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Utilization of Youtube as a Problem Solving-Based Learning Media

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ABSTRACT

Education in the digital age demands innovative approaches to learning, particularly in developing problem-solving skills. The main problem faced in traditional education is the lack of real context and practical situations that stimulate students' critical and creative thinking. A potential solution to this problem is the utilization of YouTube as a problem-solving-based learning medium. YouTube provides access to a variety of educational content featuring case studies, simulations, and real-life examples, which can assist students in understanding and applying concepts in a more practical context. This study uses mixed research methods to investigate how YouTube can be utilized in problem-solving-based learning. Data collection was conducted through quantitative surveys and qualitative interviews with students and educators who have used YouTube education content in their learning. Data analysis shows that the integration of YouTube in learning can improve students' concept understanding, facilitate problem identification and analysis, and support the real-time exchange of ideas and solutions through the interactivity of the platform. The results show the potential of YouTube as an innovative learning tool that can improve students' problem-solving skills. The use of educational videos and interactive features such as comments and live streaming encourage student engagement and collaborative learning. This research provides insights for educators in designing and implementing learning strategies that utilize digital technology effectively.

1. Introduction

Education in the digital age has undergone a significant transformation with the advent of information and communication technology. One platform that has made a huge impact in education is YouTube. With over two billion monthly active users, YouTube has become a vast and diverse learning resource, offering educational content in various forms and topics.

Problem solving is one of the important skills that students need to master. This ability is not only relevant in academic contexts but is also very important in everyday life and work environments

(Candrasari et al., 2023; Lubis et al., 2022; Muhammadiah et al., 2023). However, a challenge often faced in problem-solving-based learning is the lack of real contexts and practical situations that can stimulate students' critical and creative thinking.

Current education is often limited in providing contexts and learning resources that can support the development of problem-solving skills (Aditama et al., 2022; Akbar et al., 2023; Cano & Lomibao, 2023). Textbooks and conventional lecture methods are often insufficient to challenge students to apply their knowledge in real-life situations (Muliadi et al., 2022; Wariunsora et al., 2024). In addition, limited resources and access to diverse learning materials become another obstacle in the effective learning process (Boari et al., 2023; Wahyuningtyas et al., 2023).

Previous research has shown the potential of YouTube as a learning medium. Studies by (Abdullah et al., 2023; Tahat et al., 2021; Utama et al., 2023) found that the integration of YouTube videos in learning can improve students' understanding of complex concepts. Other studies have shown that students' participation in video-based discussions can improve their problem-solving skills(Fauzi et al., 2023; A. Kurniawan et al., 2023; Sentriyo et al., 2023). However, there is still a need to further explore how YouTube can be effectively used in the context of problem-solving-based learning.

YouTube thus offers a potential solution to this problem by providing access to a variety of learning videos featuring case studies, simulations, and real-life examples. This content can help students in understanding abstract concepts and applying them in a more practical context. In addition, the interactivity offered by the platform, such as discussions through comments and live streaming, can increase student engagement and facilitate collaborative learning.

This study aims to investigate how YouTube can be utilized as a problem-solving-based learning medium. Specifically, this study will evaluate the effect of using YouTube videos on improving students' problem-solving skills and identify effective strategies in utilizing YouTube for this purpose. The implications of this study are expected to provide insight into the potential of YouTube as an innovative learning tool in the context of problem solving. The implications can be useful for educators in designing and implementing learning strategies that effectively utilize digital technology. In addition, this study can contribute to the development of more interactive and problem-solving oriented learning practices.

2. Literature Review

YouTube has been identified as a valuable platform for problem-solving-based learning in various educational settings. Research has demonstrated that incorporating YouTube videos into education can enhance students' mathematical problem-solving abilities (E. D. Kurniawan, 2022), improve vocabulary mastery (Maulana, 2023; Riyanti et al., 2023), and aid in understanding complex mathematical concepts (Herawaty et al., 2021). Furthermore, YouTube has been shown to be effective in enhancing critical thinking skills and academic achievement (Habes et al., 2022; Sentriyo et al., 2023; Sudipa et al., 2022).

Despite its benefits, challenges exist in utilizing YouTube as a learning tool. Some students have reported difficulties with using YouTube videos for English learning during the COVID-19 pandemic (Khotibi & Hadi, 2022). Concerns have also been raised regarding the effectiveness of YouTube videos as English learning media. However, it is important to acknowledge that YouTube can serve as a powerful tool for self-directed learning (Joa et al., 2023; Widianto et al., 2022) and offer a platform for students to learn at their own pace (Hamsiah et al., 2023; Insorio & Macandog, 2022).

Moreover, YouTube has been acknowledged as a platform that can cultivate a sense of community among learners and instructors (Alawiyah & Santosa, 2022). It provides a wide array of educational content that can be leveraged to engage students in problem-solving scenarios (Beji & Saidu, 2021). By utilizing YouTube videos, educators can create interactive and productive learning environments(Truong & Le, 2022).

YouTube presents opportunities for enhancing problem-solving skills and academic performance, it is crucial to address challenges associated with its use as an educational tool. By effectively integrating YouTube into educational practices, educators can harness its potential to enhance student learning outcomes and foster critical thinking skills.

3. Research Methods

The research method used regarding the Utilization of YouTube as a Problem Solving Based Learning Media is this method combines quantitative and qualitative approaches to collect and analyze data. Mixed methods allow researchers to explore the depth of understanding of a concept (qualitative approach) while also measuring its broad effectiveness (quantitative approach) (Cano & Lomibao, 2023; Ibrahim et al., 2023; Saputra et al., 2024; Wahanani & Swari, 2023). This provides a more comprehensive picture of the phenomenon under study. Mixed methods allow researchers to adjust their approach based on the results obtained during the study. For example, quantitative findings can be used to inform further qualitative data collection (Candrasari et al., 2023; Rony, 2023; Rony et al., 2023). This approach allows researchers to understand not only 'what' and 'how much' (quantitative) but also 'why' and 'how' (qualitative) YouTube is used as a problem-solving-based learning medium. Mixed methods can be tailored to explore specific aspects of YouTube utilization in learning, such as its impact on student engagement, concept understanding, or problem-solving skill development. By using mixed research methods, researchers can gain a more in-depth and multifaceted insight into the utilization of YouTube in problem-solving-based learning, providing a solid foundation for practical and theoretical recommendations. The data used is sourced from educational content on existing YouTube channels, there are 10 educational YouTube channels that are sampled in the study.

4. Results and Discussions

The Role of YouTube as Problem Solving-Based Learning Media

YouTube is used as a platform to present educational content in video form, which includes learning materials and case presentations. Interactivity through comments and live streaming enables real-time exchange of ideas and solutions, thereby supporting the problem-solving-based learning process. based on the literature study that has been carried out, an overview of the role of YouTube as a learning media in supporting problem solving can be compiled, in Figure 1 below.

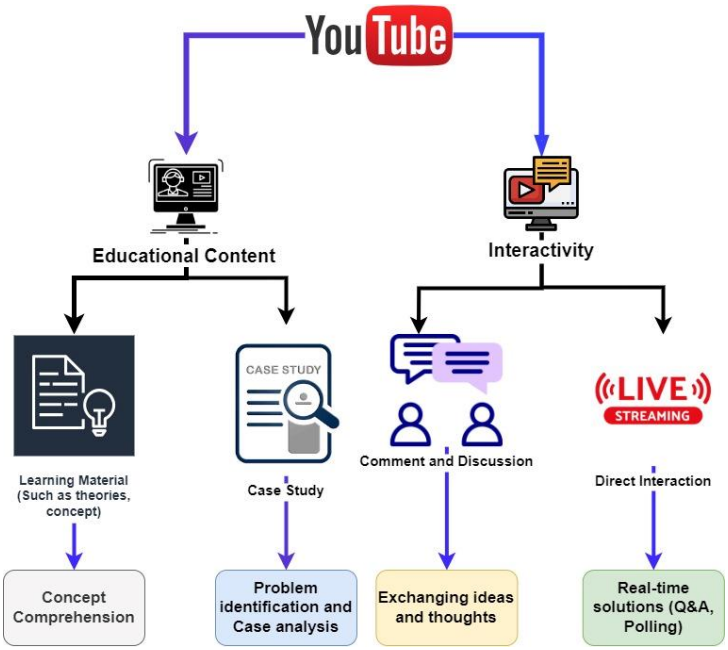

Fig.1. Overview of Youtube as Problem Solving-Based Learning Media

Based on Figure 1 above, it can be explained the role of YouTube as a problem-solving learning media, namely YouTube provides a variety of educational content in video format, which includes learning materials and case presentations. The learning materials include explanations of theories, concepts, and practical applications that can help students understand important concepts. Case presentations in videos help students to see the application of concepts in real situations, which is very important in problem-solving-based learning.

YouTube supports student interactivity and participation through its commenting and live streaming features. The comment feature allows students to discuss, exchange ideas, and ask questions, which increases their engagement in the learning process. Live streaming, on the other hand, provides an opportunity for real-time interactive learning, where students can participate in live discussions and activities alongside content creators and other participants. The videos provided on YouTube can cover a wide range of learning materials, from theories, concepts, to practices. These materials are presented in an engaging and easy-to-understand format to help students grasp basic concepts. YouTube can also be used to present case studies that are relevant to the topic being studied. These case studies can help students in identifying and analyzing existing problems, as well as thinking of possible solutions.

Thus, YouTube becomes an effective platform for problem-solving-based learning as it provides rich and interactive educational content. It allows students to not only understand theories and concepts but also apply them in a real context through case studies and hands-on interactions.

The utilization of YouTube as a problem-solving-based learning medium aims to improve students' ability to identify, analyze and solve problems. The relevant video content and dynamic interactions through this platform provide opportunities for students to develop their problem-solving skills in diverse and challenging contexts. The commenting feature on YouTube videos allows students to discuss, exchange ideas, and ask questions to the video creators or fellow viewers. This can enhance their understanding of the material and help in the problem-solving process. YouTube Live allows direct interaction between the content creator and the audience. In the context of learning, it can be used for question and answer sessions, polling, or live discussions that help students in finding real-time solutions to the problems discussed.

While YouTube offers many opportunities for problem-solving-based learning, there are challenges in its implementation, including varying content quality and potential distractions. Therefore, effective strategies are needed to make optimal use of YouTube in learning contexts.

Recommendations for Learning Practices

To maximize the potential of YouTube as a problem-solving-based learning medium, it is recommended that educators and students use structured strategies in selecting and using video content. This includes the integration of videos into the curriculum, active student participation in video-based discussions and activities, and the development of critical skills in evaluating content.

YouTube provides videos that explain theoretical concepts in an engaging and easy-to-understand manner. It helps students build a strong knowledge base and understand the basic principles required to solve problems.

Case study videos on YouTube take students to real situations where they can see how learned concepts are applied in practice. Students learn to identify key issues, analyze the variables involved, and understand the complexity of the situation. This process sharpens students' analytical skills and prepares them for the problem-solving stage.

Interactive features such as comments and discussion forums allow students to exchange ideas and opinions on the cases or concepts discussed. This encourages collaboration and peer-to-peer learning, where students can gain new perspectives and deepen their understanding. Through live streaming or interactive Q&A sessions, students can engage in real-time problem solving. They can ask questions, propose solutions, and get immediate feedback from content creators or experts. This process provides an opportunity to learn through practical experience and improve problem-solving skills directly.

5. Conclusion

The conclusion of the study shows that YouTube provides a rich platform for the development of learning materials that can enhance students' concept understanding. Through educational videos and case presentations, students can see the application of concepts in a real context, facilitating the process of problem identification and analysis. The interactivity offered by YouTube through commenting and live streaming features supports the exchange of ideas and enables real-time solutions, which is an important component of problem-solving-based learning. The ability to interact and collaborate directly with content creators and fellow viewers adds a new dimension to learning, encouraging student engagement and the development of social skills. In addition, the accessibility

and flexibility of YouTube allows students to learn according to their own pace and learning style, which can improve overall motivation and learning outcomes. Suggestions for future research are Investigating factors that may hinder the effective utilization of YouTube in problem-solving-based learning, such as distraction or inconsistent content quality, may help in designing solutions to overcome the types of YouTube content that can be utilized in problem-solving learning.

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