Liberating Students in 21st-Century Education with The Implementation of *Problem-Based Learning* (PBL) in The Classroom

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Abstract: Ki Hajar Dewantara's thoughts are important in implementing education in the 21st century. Education that liberates students aims to provide opportunities to explore and explore knowledge independently without coercion. This research aims to provide insight into the implementation of learning so that it is more impartial and liberating for students according to learning needs by using the *Problem-Based Learning* (PBL) model through the *Culturally Responsive Teaching* (CRT) and *Teaching at The right Level* (TaRL) approaches. The research method used is qualitative, with the type of library research using references from several national journals and proceedings related to education that supports students, liberating education, and *PBL*. The results of the research provide a plan and steps designed systematically to implement learning that supports students by applying the values of the Pancasila Student Profile to build better student character, better mathematical understanding of concepts so that students can solve problems critically, independence, cooperation and mutual respect for other people's cultures based on the experience gained.

Keywords: 21st-century Education, Problem-based learning, Education that supports and liberates students, Pancasila Student Profile

INTRODUCTION

Education is a human effort to develop one's potential and abilities through teaching, guidance, and training to improve human dignity and welfare. A developed nation reflects quality education. Education has an important role in advancing the human resources of a nation (Puspa et al., 2023). So, education has a big influence on the progress of a country. Through education, humans will create creative and innovative results (Istiq'Faroh, 2020).

The 21st century is also called the digital century, where changes in human life patterns are significant in following the existing flow. Because technological developments are growing very rapidly in the 21st century and all aspects rely heavily on technology, it cannot be denied that everyone, in living their daily lives, needs knowledge and skills to respond to this century. The 21st century has the main goal of producing human resources who have quality skills in the field of technology. This thought aligns with Mardhiyah et al. (2021) which explains that the higher the quality of human resources, the more advanced a country is. The main characteristic of the 21st century is the increasing development of science. Certainly, achieving a quality of human life requires knowledge, where knowledge is obtained from education. Increasing human resources means that education plays an important role in it.

Education must keep up with the times, as stated in the research of Maritsa et al. (2021) which states that people in the world of education must balance and follow all technological advances to improve educa-

tion quality. The situation following education refers to Ki Hajar Dewantara. Teachers have an important role in guiding students according to the nature of nature and the nature of the times (Santika & Khoiriyah, 2023). Students can improve 21st-century skills through the nature of the times. Meanwhile, it is natural for students to receive learning that is aligned with the local socio-cultural context in Indonesia. Education in Indonesia must inherit and reflect Ki Hajar Dewantara's thoughts. His thinking explains that education aims to advance the nation without distinguishing between ethnicity, religion, ethnicity, customs, economics, and social status and is based on the values of independence (Niyarci, 2022). The values of independence are the goal of education in Ki Hajar Dewantara's thinking. Independence refers to three things: standing alone, not depending on other people, and being able to regulate oneself.

Liberating education is education that makes students learn without coercion, following their ideals and life expectations, as well as a way of learning that is comfortable and appropriate to themselves to learn to live independently and free from pressure so that they can contribute to society according to their nature and identity (Tjalla et al., 2024). So, in implementing learning, teachers are expected to be able to analyze and identify students' characteristics, understanding abilities, and students' backgrounds to align education according to natural conditions and current conditions. Through this understanding, it is hoped that it can be used as a foundation for achieving learning outcomes that suit the needs of students. Liberating education empowers students to become independent, critical, and responsible individuals (Wardani et al., 2023). So that liberating education can provide justice to students regardless of their social, economic, or cultural differences. Liberating education strives for students to participate actively in learning so that it becomes a determinant of achieving learning success.

Education in Indonesia aims to liberate, humanize, and advance individuals by implementing the Merdeka curriculum. This curriculum represents a significant effort to prepare the nation's next generation better, ensuring they can adapt and thrive amidst the rapid developments of the modern world. By fostering a learning environment that emphasizes freedom of thought and expression, the Merdeka curriculum seeks to cultivate students who are academically proficient, critical thinkers, and innovative problem solvers. This approach empowers students, giving them the tools and confidence to navigate and contribute positively to a dynamic and ever-changing global landscape. Ultimately, the Merdeka curriculum aspires to create a more enlightened and resilient generation capable of driving progress and achieving personal and collective success in various fields (Hamzah et al., 2022). The Merdeka curriculum also applies the Pancasila student profile to foster the character of Pancasila values.

Based on the problems above, the author wrote this article to propose a change project in learning that supports students and liberates students which is supported by a variety of approaches, learning methods that suit students' needs, the use of technology in learning with the application of the Pancasila student profile. Through the change projects made, the author hopes that learning at SMAN Negeri Kalisat in Jember will bring changes that will be more pro-student and liberate for students. So that students can explore their potential and gain meaningful knowledge.

METHOD

The method used in this research is qualitative research. Library Research or library study is the type of research used in this research. The author looked for several references related to the topic discussed in this article. Literature study research is a systematic process of collecting, evaluating, and synthesizing literature relevant to the research topic (Jailani, et al, 2023). The data analysis technique used is content analysis, namely drawing conclusions to identify content systematically and objectively (Creswell, 2012). In this re-

search, there are procedures, namely 1) determining themes and topics, 2) collecting literature sources, 3) analyzing literature sources, and 4) writing research results. This research uses literature sources, including national journals and proceedings related to education that support students, liberating education, and PBL. In collecting data, the author reads and notes relevant things and then compares the literature sources collected to get a relationship with each other and get updates on this research.

RESULTS AND DISCUSSION

The findings of the literature analysis in this research will be presented as an activity-based project designed to facilitate liberating learning through the Problem-Based Learning (PBL) model. This approach emphasizes student-centered learning, where students actively engage in problem-solving and critical-thinking activities. The project aims to create an educational environment that empowers students to take ownership of their learning, encourages collaborative inquiry, and promotes the application of knowledge to real-world situations.

Case-Based

Mathematics learning at the high school level is oriented toward understanding concepts related to the material being studied. Understanding concepts is crucial in building students' thinking processes and analyzing their problems. So that students can solve problems independently and gain meaningful understanding. So that students can understand concepts that are easy to understand, teachers must facilitate their learning by the nature of the times. The 21st-century learning process utilizes or involves technology to increase students' motivation and interest in learning when following the learning process (Prastika et a.l, 2023).

In the 21st century, utilizing technology in the classroom has become an integral part of the teaching and learning process. Utilizing digital tools and resources can significantly enhance students' motivation and interest in learning mathematics. By incorporating interactive software, online resources, and various technological aids, teachers can create a more engaging and dynamic learning environment. This approach not only makes the learning process more enjoyable but also helps students connect theoretical concepts to real-world applications, thereby deepening their understanding and retention of mathematical principles. So that students can gain meaningful understanding according to the student's learning experiences.

Planned Project for Liberating the Student in Learning

The project for changes in learning that is pro-student and liberating in 21st-century education in mathematics learning is entitled "Use of Technology in Mathematics Learning to Facilitate Students' Understanding of Concepts," which requires a strategy in implementing it based on Ki Hajar Dewantara's views as follows:

1. Implementing learning that supports students and liberates students through differentiated learning. Differentiated learning is a learning method used to meet students' needs (Purnawarto, 2023). Differentiated learning allows students to increase their potential according to their learning needs, readiness, interests, and learning styles. The teacher, as a facilitator, is oriented towards fulfilling learning based on students' needs. Differentiated learning is applied, of course, to liberate students in the learning process. Students are not required to be the same as each other, without coercion, and participants can explore the knowledge they have. So, this differentiated learning creates equality of learning between students. Furthermore, differentiated learning promotes a more inclusive and supportive educational environ-

ment. It encourages students to take ownership of their learning and fosters a sense of independence and confidence. By recognizing and valuing the unique strengths and abilities of each student, differentiated instruction helps to build a classroom culture where all students feel respected and motivated to succeed. This approach not only enhances academic outcomes but also contributes to the overall development of students as self-directed, lifelong learners. Through differentiated learning, education becomes a more personalized and equitable experience, allowing every student to reach their full potential.

2. Applying learning with a CRT (Culturally Responsive Teaching) approach. CRT is a learning approach that focuses on recognition and recognizes and appreciates students' cultural diversity (Henita et al., 2024). The CRT approach will foster students' learning motivation and respect their culture. So, with the CRT approach, students will better understand the culture, respect each other's culture, and love their country. This approach not only aids in academic achievement but also deepens students' understanding and appreciation of different cultures, fostering mutual respect and empathy among classmates. As students learn to value their heritage and the diverse cultures of their peers, they develop a stronger sense of community and national pride, ultimately cultivating a more cohesive and respectful society. Through CRT, education becomes a powerful tool for promoting cultural awareness, inclusivity, and patriotism, preparing students to thrive in a multicultural world.

3. Applying learning with TaRL (Teaching at The Right Level) is a learning approach that focuses on the level of students' abilities (Irmayanti et al., 2023). This approach can support a learning process that can adjust the level of understanding and abilities of students so that each student has the opportunity to learn and develop according to their abilities. Further, this method involves regularly assessing students to accurately determine their learning levels and then grouping them according to these levels for targeted instruction. By aligning teaching strategies and content with the actual proficiency of the students, TaRL enables more effective learning experiences. Students are more likely to grasp fundamental concepts and progress steadily when they are not overwhelmed by material that is too advanced or disengaged by content that is too easy.

This change project at school will use a problem-based learning model. PBL is a learning model that builds students' understanding of analyzing and solving problems. Culturally responsive (CRT) and TaRL approaches are used. The reason for the change project using the PBL learning model at SMAN Kalisat is based on the results of the teacher's observations that the class still does not fully use student-centered learning or is still teacher-centered and rarely uses an approach based on the culture of the student's environment. By holding a change project, it is hoped that the learning carried out will be student-centered, adapted to the needs of students, and liberating students to make them active, independent, and gain meaningful knowledge. The reason for choosing this project is that each student has different characteristics. So, in the learning process, the teacher pays attention to students according to their needs through initial diagnostic tests and facilitates students' learning needs according to their cognitive abilities through differentiated learning. The second reason is the lack of understanding of mathematical concepts among students; of course, teachers need exciting things to motivate students to participate in learning. One of them is involving technology, increasing students' motivation and interest in learning by following a learning process tailored to their experiences.

Steps for Implementing Liberating Learning

1. Carry out a diagnostic assessment

    Before carrying out learning, teachers need to carry out an initial diagnostic test to determine students' cognitive abilities and learning styles—implementation of student-centered learning through (student-centered learning). Student-centered learning is learning that prioritizes the active role of students, where the teacher is only a facilitator who helps students to learn and develop according to their potential and interests.

2. Accommodate students' learning needs through differentiated learning with the CRT approach and TaRL approach

    The CRT approach is culturally responsive learning. It provides problems in LKPD related to mathematics material by involving students' culture, one of which is the Kalisat area, the largest tobacco producer in Jember. This can be linked to the material that will be presented to students. Carrying out differentiated learning using the TaRL (cognitive understanding) approach divides groups according to ability levels as follows.

    a. High cognitive ability group (Advanced), where the group solves problems on the LKPD through independent group discussions

    b. In the medium cognitive ability group (Ready), the group solves LKPD problems through discussion with the help of the teacher if they experience difficulties.

    c. The low cognitive ability group (developing) solves LKPD problems through discussion with teacher guidance or scaffolding.

3. Utilization of technology in the learning process

    Utilization of technology to create learning that guides children's nature. The technology used includes PowerPoint points and videos as teaching materials, displayed in front of the class via projectors and laptops. In addition, Canva is used to design students' LKPD to be interesting and motivate students to learn.

4. Accompanying students during presentations

    The teacher guides students in presenting the discussion results. The teacher provides reflection or feedback to students. Feedback is provided to follow up on students' strengths and weaknesses and create a productive learning environment.

Supporting factors, challenges, and solutions for change projects

For the success of this change project, support from several parties, both internal and external to the school, is very necessary. The parties that must support the school internally include the principal, teachers, students, and school facilities. Meanwhile, external parties to the school are the school committee and parents.

Challenges that may arise in implementing the above activities include damaged technological facilities in several classes, which may limit the availability of learning-supporting technology such as projectors. It is also possible that some students lack discipline and are less active in learning.

Therefore, to navigate the challenges that may be faced in implementing the change project in learning, several solutions can be implemented, including before classroom learning takes place, the teacher borrows and communicates the projector to the TU for use in the learning process because it is seen from the availability of projectors in schools is limited. Another thing that can be done is to agree on the rules during

class, which are conveyed before learning begins. So, an agreement helps create a safe and conducive learning environment, builds discipline, and directs students to be more active in the learning process.

CONCLUSION

The change project at SMAN Kalisat School aims to ensure that education is carried out according to Ki Hajar Dewantara's thoughts, namely, education that supports and liberates students. Its implementation involves technology following the nature of the times to develop 21st-century skills. With this change project, it is hoped that the learning carried out will fully involve students, make students active and independent, and allow them to explore their knowledge based on experience so that students gain meaningful experiences in accordance with Pancasila values.

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