



Learning Based on Higher Order Thinking Skills (HOTS) in the Era of Society 5.0

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Abstract

The world of education has an important responsibility and role so that students can develop their knowledge in the era of society 5.0. In this era, the competency skills students need are the skills that exist in the 21st century. These 21st- century competency skills are important to be taught to students to face the challenges and demands of life in the era of society 5.0. Students are not only equipped with knowledge but also must be trained in critical thinking skills to become accustomed to critical thinking, analysis, and creativity. This way of thinking is known as Higher Order Thinking Skills. This study aims to analyze and describe HOTS-based learning in welcoming the era of society 5.0 in elementary schools. This research method is a literature study, collecting and analyzing information from the results of publications such as books, research articles, or other authors' thoughts. This research approach is a qualitative descriptive approach. The result is HOTS-based learning, students' ability to think critically in elementary school is faster in receiving various information, thinking creatively in solving problems using the knowledge they have, and making decisions in complex situations.

Keywords: HOTS, Society 5.0, Elementary School

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Introduction

Industrial revolution 4.0 has changed many lines of human life affected by the development of increasingly sophisticated technology (Fonna, 2019; Purba et al., 2021; Rohida, 2018). Society often refers to these changes as the industrial revolution. The more appropriate

term for this change in the order of society is the revolution of society or society 5.0. Society 5.0 is considered similar to the Industrial Revolution 4.0. But basically, these two things are indeed related to Society 5.0, born as a result of the collaboration between cyberspace (virtual world) and physical space (real world) (Haqqi & Wijayati, 2019).

The development of this era undeniably greatly influences the world of education in Indonesia. Education is one of the important factors as a determinant of the success of a nation (Baro'ah, 2020; Juliaha, 2019). Through education, every nation will be able to give birth to a superior generation following the demands of the times (Elitasari, 2022; Mardhiyah et al., 2021). It can be said that education plays a major role in human resource development and national development (Azizah, 2019; Predy et al., 2019).

The world of education must always follow the development of information and communication technology as a facility to facilitate the learning process (Destiana, 2019; Parwati & Pramatha, 2021). In Permendiknas No. 41 of 2007 on Process Standards, following Graduate Competency Standards and Content Standards, the learning principles used in point 13 state the use of information and communication technology to improve the efficiency and effectiveness of learning (Depdiknas, 2003). With this technology, the effectiveness of learning can be further improved. In addition, technology in the learning process makes teacher-centred learning can switch to student-centred learning usually (Teguh, 2020).

Education in the society 5.0 era is closely related to changes in the learning system. Students need to be able to think critically in order to learn in the 21st century, which is connected to the society 5.0 era. Problem-solving, critical thinking, collaboration, and communication skills are essential skills (Prayogi & Estetika, 2019). If the teacher is able to develop learning through activities that challenge students to think critically in solving various problems, all of these skills are expected to be present in every student. As stated by the National Education Association, to compete in the current global era, students must be able to communicate, collaborate, think critically, and be creative (Arnyana, 2019; Dewi, 2019). This ability is contained in higher-order thinking skills, one of the important competencies in the society 5.0 era (Larasati & Yuanta, 2021).

The learning process conducted by the teachers in Indonesia has not encouraged their students to think at a high level which is the demand of the development of the 21st century. It can be seen in the data released by TIMSS and PISA that high-level thinking ability such as logical thinking ability, analytical ability, and evaluation ability of students is still weak. The 2015 TIMSS assessment, which was released in December 2016, revealed that Indonesian students' achievements in science ranked 46th out of 51 countries, with a score of 397. The Ministry of Education and Culture also analyzes Indonesia's low ranking in the TIMSS assessment. One of the influencing factors is that students have not been able to analyze more complex and problem-solving questions because they are used to questions with common and simple characteristics (Fuadi et al., 2020; Mu'Minah & Aripin, 2019; Pratiwi, 2019). Naturally, educators face difficulties in creating a learning environment that encourages students' capacity for higher-order thinking because of this.

Learning oriented to higher-order thinking skills (HOTS) are one thing educators can work on to solve these issues. The purpose of this solution is to enhance learning quality. It is urgently necessary to train these higher-order thinking skills so that students can learn to build new knowledge, solve problems, and think critically and creatively to come up with new good and useful ideas during the learning process (Septikasari & Frasandy, 2018; Zubaidah, 2018). It is hoped that students in the future will be able to compete in this era of society 5.0 by being able to solve problems and think critically. Therefore, this study aims to analyze and describe Higher Order Thinking Skills (HOTS)-based learning in elementary schools.

Methodology

The method used in this research is a literature study, namely, research carried out by collecting and analyzing information on publication results, either from books or through searching relevant journals and supporting research topics and other written sources (Andini et al., 2021; Cahyono et al., 2019; Junindra et al., 2021; Melfianora, 2019). A literature study is a search or literature research by reading various articles related to research topics to produce writing related to one particular topic or issue (Mustaji & Subroto, 2021; Ulandari et al., 2022).

This research is a kind of qualitative research. The data collection process in this study was collected through online searches (Kusumawati et al., 2022; Sari & Tharir, 2021). Researchers utilize several database sources such as google scholar, science direct, semantic scholar and the Education Resources Information Center (ERIC). The journal articles taken have something to do with the problems discussed in this study: how the learning process is based on higher-order thinking skills in welcoming the era of society 5.0 in elementary schools. The results of collecting information from the relevant articles are then analyzed using the content analysis method (Agustyaningrum et al., 2022).

Results

Era Society 5.0

Society or known as society, is a group of individuals who form a system in which various mutual interactions occur (Harun, 2021). We can compare the rapid development of human life with the present. The emergence of the era of society 5.0 indicates the fifth in the development of human life.

Since humans were only the first to get to know writing, surviving by utilizing those available in nature and hunting (Haqqi & Wijayati, 2019), they made various simple pieces of equipment for daily needs and to protect themselves. In this age, humans began to try to form a group into a society.

Furthermore, the era of revolution 2.0 (Agricultural) or the beginning of the 19th century when humans began to settle in a certain place and form a more complex society so that various kingdoms emerged until big cities began to be built (Taufiqurrahman, 2022). This era is also known as the agricultural era or agricultural revolution. They became acquainted with technology and farming and used natural resources as agricultural products. Everything in nature is maximized to meet the needs of life.

The world continued to develop until the emergence of the first world industrial revolution in England in the 18-19 centuries. The dynamics of human life are greatly changed. Machines began to emerge to make various prefabricated products (Nur & Hukum, 2022). Large countries compete to increase income through industrial processes to produce large quantities and types of goods, resulting in people starting to have consumptive behaviour. It is a sign of the 3.0 (Industrial) revolution era. This era brought society to be more advanced.

The growing science and technology make humans obtain information quickly through the internet. The emergence of the internet has encouraged progress in various areas of people's lives, increasingly attached to various activities connected to the internet. People began to use the internet to facilitate various jobs to meet their needs. All this is characteristic of the emergence of the era of revolution 4.0 (Information)—a concept of life closely related to computer devices and automated machines. Science and technology are developing rapidly, making human life like there is no distance between time and space, so communication and connection between people become easier and more intense (Taufiqurrahman, 2022). In the previous era, all data was physically based, but now it has changed to digital data and can be accessed anytime. Revolution 4.0 has profoundly altered the structure of human life, and various aspects of human life have been affected by increasingly advanced technology. (Acep Suhendar,

2021). Society refers to this kind of shift in the way things were done as the "industrial revolution."

After the industrial revolution ended, 4.0 was perfected with the birth of the era of society 5.0, the 5th form of human development. The concept of the development of the era of society 5.0 is to make humans the center of technological development by combining human activities in the real world with the virtual world (Ruskandi et al., 2021). The era of society 5.0 is a refinement of the industrial revolution 4.0, which emphasizes an integrated, easy and fast life.

The Japanese government launched the era of fashionable society (society 5.0) in 2019. It was created in anticipation of the chaos that would disrupt Industrial revolution 4.0, which caused complex uncertainties that could erode the values of human character maintained in various countries (Taufiqurrahman, 2022). The term "Society 5.0" also refers to a time when people's quality of life can be improved by utilizing a variety of technological advancements to address a variety of issues.

Higher Order Thinking Skills (HOTS) Based Learning

Learning in the 5.0 era requires students to develop their thinking skills to solve problems critically and effectively. HOTS-based learning is one type of lesson that can help students develop their critical thinking skills. Higher Order Thinking Skills (HOTS) is a high-level way of thinking that prioritizes the transfer process, critical thinking and problem-solving (Mariam et al., 2020). In schools, these three elements become an essential part of the learning process. The main goal of this Higher Order Thinking Skills is to make students' higher-level thinking skills better, especially their ability to think critically when they get different kinds of information. Using their knowledge, come up with creative solutions to problems and make decisions in difficult situations (Prasetyo & Budiyanto, 2020).

High-level thinking is a way of thinking that looks at questions about what we already know about problems that don't have a clear answer. HOTS include critical thinking, logically, reflectively, metacognitively and creatively. Critical thinking skills are necessary for solving problems and making decisions. If a person has information stored in their memory and acquires new information, high-level thinking will occur if they connect, structure, and develop that information to achieve a goal or find potential answers or solutions to a confusing situation.

According to Bloom's (1965) taxonomy, higher-order thinking belongs to a part of the cognitive realm to develop students' thinking skills. This cognitive realm consists of six levels of thinking, namely 1) knowledge; 2) comprehension; 3) application; 4) analysis; 5) synthesis (merging); evaluation. Bloom's taxonomic revisions made by Anderson and Krathwohl (2021) focus more on the cognitive domain part more applicable to educators that are converted into verbs, namely 1) remembering; 2) understanding; 3) applying; 4) Analyzing; 5) evaluating; 6) creating. According to Krathwohl (2021), analyzing (C4) is one of the indicators used to evaluate students' high-level abilities. Analyzing refers to the capacity to break down concepts into their component parts and link those parts together to gain a complete understanding of the concepts. Furthermore, evaluate (C5) is the ability to determine something based on a certain benchmark and create (C6), combining elements into something new.

Higher-order thinking skills are different from higher other thinking. In Bloom's revised taxonomy, the term "high-level thinking" (HOT) refers to cognitive abilities for analyzing, evaluating, and creating. In the meantime, higher-order thinking skills (HOTS) are associated with problem-solving and creative and critical thinking. As part of problem-solving, skills in complex analysis and system analysis are typically not mentioned separately in the main components of HOTS. Likewise, the ability to think logically and evaluate is part of critical thinking, so the main elements of HOTS can be made simpler. Skills for higher-order thinking include abilities for higher-order thinking. Students must, for instance, be able to analyze

problems, consider alternate solutions, employ problem-solving strategies, and evaluate the methods and solutions utilized in order to solve a problem (Sani, 2019).

Discussion

The concept of the Society 5.0 era is to make humans the center of technological system development by combining activities in the real world and cyberspace that aim to solve social problems and prevent the emergence of new problems caused by the use of technology, human work will be easier but not change the nature of humans as social beings because humans remain the center of control.

The era of society 5.0 is a challenge for Indonesia today and in the future both in the fields of education, culture, health, economy and infrastructure. In preparing for the era of society 5.0, the conditions that must be met are mastery in the field of technology so that it can maximize the use of technology to increase productivity. Quality education is able to increase its potential in innovation, productivity, and mastery of new technologies. Teachers need to equip their students through learning that is oriented towards improving the ability to find and study information, increasing critical thinking skills, being creative and innovative in problem solving, improving communication skills. Where these abilities are included in the life skills of the 21st century or better known as 4C (Creativity, Critical Thinking, Communication, Collaboration).

Based on this, education in Indonesia must also be in line with the concept of society 5.0. The concept of education in Indonesia must change so that the target of society 5.0 in society is also achieved. Therefore, learning is needed that is in line with the development of the era. Every educational institution has the task of preparing innovative human resources who are able to have a career, master technology, have character, and be able to communicate well in society. Learning that is oriented towards strengthening competence or career life skills, always learning and innovating, mastering information media technology, thinking critically in solving problems, being skilled in communicating, having a creative and innovative spirit and being able to work together in a group, is very necessary and creatively developed by educators. Learning that can answer the challenges of this era of society 5.0 is learning directed at training students' higher-order thinking skills (Mu'minah, 2021).

Higher order thinking skills are the ability to connect, manipulate and change knowledge and experience that is already possessed critically and creatively in making decisions to solve problems in new situations. HOTS-based learning is able to stimulate students' critical thinking skills. Through HOTS-based learning, students will be able to distinguish ideas or ideas clearly, argue well, be able to solve problems able to construct explanations, be able to hypothesize and understand complex things to be clearer, where this ability clearly shows students reasoning (Hignasari & Diputra, 2021).

The higher-order thinking skills introduced since elementary school will have a positive impact in the future. An educator must be able to read various phenomena and updated developments in order to develop, plan, and carry out the learning series optimally in order to create a quality and quality educational process. Students are independently able to read and identify various phenomena, challenges, problems, and developments that exist so that they can bring and lead students to lead to higher-order thinking skills.

Conclusion

Technology has become a part of each person's social needs, demonstrating that the development of life in the era of society 5.0 combines technological advancements with social issues. Education plays an important role in preparing for the development challenges of the Society 5.0 era. In this case, educators, as the spearhead of educational change, are required to create students with 21st-century skills, including the ability to communicate, think critically and

solve problems. One of the lessons that teachers, in this case, can develop is through Higher Order Thinking Skills (HOTS)-based learning. HOTS-based learning can improve students' critical, creative and problem-solving thinking skills. That way, students will be able to meet the demands of the times in this era of society 5.0.

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