

## 4C SKILLS OF THE 21ST CENTURY: THEIR NATURE AND IMPORTANCE IN PRIMARY SCHOOL LEARNING

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### Abstract

21st century skills absolutely must be taught at all levels of education, especially elementary schools, because students have experienced very fast changing times. Elementary school students are automatically involved in becoming part of 21st century society. Therefore, 21st century 4C skills, namely Critical Thinking and Problem Solving, Communication, Collaboration, and Creativity and innovation should be taught at all levels of elementary school classes according to the development and needs of students. The aim of the study is to describe the nature of 21st century skills and the importance of their application in elementary schools. The research method used is literature study. The data sources in this study were examined from various reading sources such as books and journal articles. This method is carried out so that this journal article can provide relevant and reliable information based on data sources and provide a clear picture of 21st Century 4C skills in elementary schools. The results of this study indicate that teaching 21st century skills is a necessity for every school to form skilled students in 21st century society. The learning objectives are so that students are familiar with good communication, cooperate in a compact manner, are critical of problems and are able to solve them, and are critical and innovative in their work produce new goods.

**Keywords:** 21st century skills, 4C Skills, Elementary Schools

### Abstrak

Keterampilan abad 21 mutlak harus diajarkan di semua jenjang pendidikan khususnya sekolah dasar, karena siswa telah mengalami perubahan zaman yang sangat cepat. Secara otomatis siswa sekolah dasar terlibat menjadi bagian dari masyarakat abad 21. Oleh karena itu, keterampilan abad 21 4C yaitu *Critical Thinking and Problem Solving, Communication, Collaboration, and Creativity and innovation* hendaknya diajarkan pada semua jenjang kelas sekolah dasar sesuai dengan perkembangan dan kebutuhan siswa. Tujuan penelitian adalah untuk mendeskripsikan hakikat keterampilan abad 21 dan arti penting penerapannya di sekolah dasar. Metode penelitian yang dipakai adalah studi pustaka. Sumber data dalam penelitian ini dikaji dari berbagai sumber bacaan seperti buku maupun artikel-artikel jurnal. Metode ini dilakukan agar artikel jurnal ini dapat memberikan informasi yang relevan dan terpercaya berdasarkan sumber data serta memberikan gambaran yang jelas mengenai keterampilan 4C Abad 21 di Sekolah Dasar. Hasil penelitian ini menunjukkan bahwa mengajarkan keterampilan abad 21 menjadi kebutuhan setiap sekolah untuk membentuk siswa yang terampil dalam masyarakat abad 21. Tujuan pembelajaran tersebut supaya siswa terbiasa dengan komunikasi yang baik, bekerjasama secara kompak, kritis terhadap masalah dan mampu menyelesaikannya, dan kritis dan inovatif dalam menghasilkan barang-barang baru.

**Kata Kunci:** Keterampilan Abad 21, Keterampilan 4C, Sekolah Dasar

### 1. INTRODUCTION

The Education is a manifestation of a dynamic and continuously growing human culture.

Consequently, improvements or developments in education should be consistent with changes in life itself. Consequentially, alterations to improve schooling in all facets must be implemented regularly. Education that can promote future growth is education that can build pupils' potential so that they can face and solve life's challenges.

The industrial revolution 4.0 defines the life of the 21st century, making it a period of openness and globalization. Thus, the 21st century is characterized by numerous changes in various facets of human life; the 21st century requires excellent resources in all its efforts and outcomes. This big transformation occurs in daily life by following the existing flow. In addition, the most significant transformation is occurring in education. Unfortunately, Indonesia's education quality is still relatively low compared to other nations. Education in Indonesia must be rapidly reformed and enhanced to produce a generation that succeeds in a variety of professions and can compete with other nations. Improving the quality of human resources through education, including basic, secondary, and university education, is the key to keeping up with the industrial revolution 4.0's progress (Lase, 2019:29).

In education, motivation alone is not enough to realize the ideals. There must be evidence or concrete forms and hard efforts for the Indonesian government and even all of us in facing the 21st Century. The challenges will also be faced in every innovation and technology transition. Educators and students must also be brave and ready to take new steps in facing the era of the industrial revolution 4.0 or what we also know as the 21st Century. The big challenge is if you can't change the way of education, teaching, and learning in the next 30 years, you will experience great difficulties.

The development of information and communication technologies has altered humans' working, socializing, playing, and learning habits. As we reach the 21st century, technological advancements have permeated all facets of society, including education. Therefore, learning in the 21st century must be technology-based to meet the needs of the times. Greenstein (2012) asserts that students in the 21st century must grasp the science and metacognitive skills, think critically and creatively, and communicate or collaborate successfully. This circumstance exemplifies the disparity between expectations and reality.

Learning in the 21st century requires not only knowledge but also abilities. This is because talents are a necessary component in many aspects of life. According to Wijaya and Sudjimat (2016: 267), the skills of the 21st century include (1) life and career skills, (2) learning and innovation skills, and (3) information media and technology skills. Thus, education is a component of national development and an endeavour to improve the quality of human existence. Therefore, teachers and students must not only acquire the abilities necessary for 21st-century learning but also comprehend these talents.

## 1. RESEARCH METHOD

The research technique employed is a literature review. According to Sugiyono (2012), the literature review comprises theoretical studies, references, and scientific literature about the values, culture, and norms that evolve in the investigated social environment. This study analyzed several reading materials as data sources, including books and journal articles. Reading credible data sources such as books and journal articles connected to the topic of discussion was the first step in this study, followed by an analysis of the contents of data sources related to the significance of 21st Century 4C skills in primary schools and a discussion of the results. Based on the analysis. This methodology is employed so that this journal article may provide relevant and dependable information based on data sources and provide a clear image of 21st Century 4C competencies in elementary schools.

## 2. RESULT AND DISCUSSION

### What are 21st Century 4C Skills?

In the 21st century, the term 4C talents have been used frequently globally. For instance, Saavedra and Opfer (2012) classify 21st-century abilities into the following four categories: (1) ways of thinking: creativity and innovation, critical thinking, problem-solving, decision-making, and learning how to learn (or metacognition), (2) ways of working: communication and cooperation in groups, (3) tools for work: general knowledge and information communication technology (ICT) literacy, and (4) life as a citizen: citizenship, life and career, personal and social responsibilities, and cultural awareness and competence. In addition, Wagner (2008) asserts that students are equipped with the following seven

skills to survive in the 21st century: (1) critical thinking and problem solving, (2) collaboration and leadership, (3) agility and adaptability, (4) initiative and entrepreneurship, (5) effective oral and written communication, (6) access to and analysis of information, and (7) imagination and curiosity.

The definition, as mentioned above, or the idea of 21st-century abilities, is expressed differently. Still, emphasis is placed on higher-order or sophisticated thinking (creativity, metacognition), communication, cooperation, and teaching and learning, which are more demanding than memorization. The 21st-century abilities that students must acquire, according to Roekel (without years), are the 4 C's: (1) Critical Thinking and Problem Solving, (2) Communication, (3) Collaboration, and (4) Creativity and Innovation.

#### 1) Critical Thinking and Problem Solving

The ability to think critically is a key aspect of human adulthood and one of the basic forms of basic capital or intellectual capital. The association between critical thinking and learning outcomes is substantial. Critical thinking contributes to learning performance at the elementary, secondary, and tertiary levels. According to Murdoch University (2008), which quotes Ennis' opinion, critical thinking is a process that focuses on making proper decisions regarding what to believe and do. AMSC (Mahanal, 2009) defines critical thinking as an organized, self-directed mind demonstrating intellectual capabilities and metacognitive talents. Students must demonstrate the following skills in this competency: 1) concentrating on problems (finding and resolving difficulties), 2) assessing arguments, 3) asking and answering questions, 4) recognizing reputable sources, 5) identifying and observing 6) Deducing, 7) Induce, 8) Decide and Evaluate, 9) Define, 10) Identify Assumptions, (11) Decide and Perform, 12) Interact with Others, and Metacognition (Murdoch University, 2008; Mahanal, 2009).

Critical thinking also contributes to career success. The habit of learning to think critically has an impact on students' ability to develop other skills, such as increasing higher-order thinking skills, analytical skills, and improving thought processing. Teaching critical thinking and problem-solving effectively in the classroom is very important for students. Critical thinking skills can be taught in schools through the learning process. Several studies have proven that constructivist-based learning strategies can improve critical thinking skills.

Critical thinking is a focused and transparent mental process utilized in mental tasks such as problem-solving, decision-making, persuasion, assumption analysis, and scientific inquiry. Critical thinking is the capacity for ordered thought. Critical thinking is the capacity to methodically analyze the significance of one's own and others' opinions (Elaine B. Johnson, 2009: 182). Every human must possess the ability to think. Thinking is an inherent characteristic that is inherent to all life activities. The degrees of thinking range from the most elementary, which requires merely recollection, to the most complex, which requires contemplation.

Critical thinking is fundamentally an active process in which a person, as opposed to receiving information from others, engages in in-depth reflection, formulates his questions, and seeks pertinent information (John Dewey in Alec Fisher, 2009: 2). Moreover, according to Elaine B. Johnson (2009: 185), the objective of critical thinking is to gain a comprehensive understanding. The objective of critical thinking, according to Fahrudin Faiz (2012: 2), is to ensure, as much as possible, that our thinking is true and accurate. Students can tackle their challenges if they possess the ability to think critically. For example, one cannot learn effectively without sound reasoning.

#### 2) Communication

In the human world, communication is the process of exchanging language. Therefore, humans are involved in intrapersonal, group, and mass communication. Researchers in communication demonstrates that language is currently acknowledged as the most effective medium for interpersonal communication, including counselling and coaching activities, teaching and learning procedures, business meetings, and others. (Muhtadi, 2012) Communicating requires developing speech and language with emotional and social content, specifically how the communication session might occur in a two-way manner (Van, 2011). Communication is an action that is frequently performed by everyone, everywhere, and at any time. Because communication is vital to our existence. Because of communication, everyone needs it, and everything becomes more comprehensible.

Childhood is the most appropriate age for developing language. Because at this time, it is often called the golden age, where children are very sensitive to good stimuli related to physical, motoric,

intellectual, social, emotional and language aspects. To help children's cognitive development, it is necessary to obtain a learning experience designed through observing and listening appropriately.

During the learning process, the teacher must teach his students how to talk to each other about lessons and other things, both with other students and teachers. The communication language chosen by students will affect the students themselves. The use of offensive language in communication has a negative effect. The message receiver cannot accept messages transmitted by students. This will cause mistakes in message reception, resulting in misunderstandings and interpersonal conflicts. In addition, permitting kids to use harsh language in conversation might lead to developing negative behaviours in youngsters. Conversely, the use of quality language in communication will have a favourable effect on youngsters. The child's self-esteem will grow due to their accomplishment of the targeted objective.

### 3) Collaboration

Several researchers have demonstrated that students can improve their knowledge and comprehension when they actively participate in the instructional process while working in small groups. Regardless of the educational materials, students who work in small groups tend to learn more about them and remember them for longer than if they were delivered in other formats, such as lectures (Warsono and Hariyanto, 2012: 66-67). Roberts (2004: 205) states, "Collaborative is an adjective that suggests working in a group of two or more to achieve a common objective while valuing the contributions of each member."

Learning can occur in the context of collaborative learning if the group members are not known or predetermined in advance. A group can consist of two persons, several people, or even more than seven people. Moreover, Wasono and Hariyanto (2012:50-51) claim that collaborative learning can occur at any moment, not just at school; for instance, a group of students assisting each other with their homework; and even between students from different classes or institutions. Collaborative learning can therefore be informal; it need not occur in the classroom, and learning does not need to be rigidly controlled.

It is possible to draw the following conclusion based on the information presented above: students participate in collaborative learning when they work together in groups under teachers' guidance inside and outside the classroom to gain knowledge and accomplish shared learning goals through social interaction. As a result, meaningful learning takes place. In addition, students will value one another's contributions to the group.

### 4) Creativity and innovation

The ability to create something new, apply a new form, produce innovative skills, or transform something currently existing into something else is what we mean when we talk about creativity (Greenstein, 2012). According to Lawrence in Suratno (2005: 24), creativity is an inventive, efficient, and intelligible concept in the human mind. In contrast to Lawrence, Chaplin claimed in Yeni Rachmawati and Euis Kurniati (2010: 16) that creativity is the capacity to generate new forms in the arts or arts or to solve problems using novel approaches. According to Suratno (2005:24), creativity is an imaginative activity that embodies the inventiveness of the intellect capable of making a product or addressing a problem.

According to Yeni Rachmawati and Euis Kurniati (2010: 30-31), the creative potential of children has the potential to flourish if it is encouraged by several different circumstances, including the following:

- 1) Provide good mental stimulation to Children's cognitive characteristics, personality, and psychological climate are stimulated.
- 2) Creating a conducive environment The development of children's creativity requires the creation of an environment that makes it easier for them to access whatever they see, hold, hear, and play.
- 3) The role of educators in encouraging creative thinking Teachers that are creative will provide the proper stimulation for youngsters, thereby fostering creativity in their students.
- 4) Parental participation The parents alluded to here are those who permit their children to engage in activities that foster creativity.

The invention is the definition of innovation. Innovation implementation is putting ideas into practice and significantly contributing to the field. Innovation is an idea, item, event, or approach perceived or observed as a novel by an individual or group (society), regardless of whether it results from invention or discovery. Innovation is viewed as a means to attain certain objectives or solve a particular problem (Sa'ud, 2008: 3).

### **Why do Elementary Students need 21st Century Skills?**

Critical thinking means weighing all information in a logical and accountable manner. Critical to information is to have an opinion or view accompanied by clear reasons and data. So critical thinking is not only active, but also the reasons expressed can be accepted by the mind. To get used to critical thinking, the brain must be trained to focus because critical thinking arises from correct understanding, while understanding cannot be obtained without focus and concentration (Judge, 2009). Problem-solving skills are understanding problems, finding solutions, and predicting outcomes. Solving problems involves decision-making skills because finding the most appropriate solution must be followed by other alternative solutions. The procedure for solving the problem is a) Defining the problem; b) Looking for alternative solutions; c) Determining the choice of the most appropriate solution among many alternative options; d) applying solutions to problems; and e) Predicting the outcome of problem-solving (Butterworth & Thwaites, 2013).

Communication is a basic ability that every human being must master. Communication is a tool to convey a message to the recipient of the message. For information to be received effectively, it must meet the principles of being clear, not confusing, understandable, and structured. In addition, communication has rules and ethics that must be followed so that communication does not harm the recipient (Sandy, 2009).

Collaboration is an activity carried out jointly by two or more people with the same goal. Collaboration is carried out by prioritizing the benefits of both parties. All parties involved have clear responsibilities, and each role is clearly described (Conklin, 2013).

Creativity is the ability to do new things that did not exist before (Piiro, 2011). Creativity requires courage because new things usually cause problems due to unpreparedness for these new things. Creativity also does out the ordinary people in the plural. Innovation adds value from creativity and other aspects to everything that has existed. Innovation skills arise from situations that require or want to improve the capabilities of existing goods. Innovation skills are synonymous with the ability to analyze, modify, and update (Nakano & Wechsler, 2018).

Teaching 21st-century skills is necessary for every school to form skilled students in 21st-century society. The learning objectives are so that students are familiar with good communication, cooperate compactly, are critical of problems and can solve them, and are critical and innovative in producing new goods. In teaching 21st-century skills, teachers can integrate them into different activities in the form of learning activities. Students practice alone, and the teacher acts as a facilitator. 21st-century learning should be carried out by prioritizing thinking and doing skills, especially aspects of critical thinking and problem solving, and being creative and innovative. At the same time, communication and collaboration are used to grow these thinking and doing skills. Learning assessments should hone students' logical skills in case study questions, descriptions, story questions, etc.

### **How to Teach 21st Century Skills?**

1st-century learning prepares the 21st-century generation to face various global demands and challenges. In this century, advances in technology and information are growing very rapidly and affecting all areas of human life, one of which is the field of education. Education is a part of efforts to improve the welfare of human life in advancing the development of the nation and state. Education in the 21st century has undergone changes marked by the development of new, digital, information, and media literacy. Learning in the 21st century is oriented towards activities to train students' skills by leading to the learning process. Learning can be interpreted as a teacher's effort to provide stimulus, guidance, direction and encouragement to students so that the learning process occurs. Learning, in this definition, is not a knowledge-learning process but a knowledge-formation process by students through their cognitive performance (Wijaya, 2016: 270). Therefore, the learning system in the 21st century is no longer centred on educators (teacher-centred learning) but students (student-centred learning). It aims to provide students with skills in thinking and learning skills in the 21st century, or what is known as "The 4C Skills" formulated by the Framework Partnership of 21st Century Skills, including (1) Communication; (2) Collaboration / Collaboration; (3) Critical Thinking and Problem Solving; and (4) Creative and Innovative (Nabilah, Nana, 2020: 3). In its application, it directly requires students to be

active without being limited by space and time (Kuncahyono, 2020: 155). Therefore, 21st-century learning cannot be separated from the demands of 21st-century learning, namely the integration of technology as a learning medium to develop learning skills. In this case, education in the 21st century requires changes in teaching materials, learning media, facilities, and learning models provided to students to face increasingly stringent global demands.

Syahputra (2018: 1279-1280) argues that 21st-century learning has four main principles including:

a) Instruction should be student-centred

Students are placed as active learning subjects to develop their interests and potential. So students are no longer required to be listeners or memorize the material provided by educators. Still, students are the centre of learning to improve thinking, knowledge, and skills development.

b) Education should be collaborative

Participants must be taught to collaborate with other people with different cultural backgrounds and values, aiming for students to work productively with others, take responsibility for themselves and others, appreciate different perspectives, and put empathy in its place.

c) Learning should have context

Educators must develop learning methods that relate to the real world, enabling students to find meaning, values, and beliefs about what they have learned and implement them in the real world.

d) Schools should be integrated with society

To prepare responsible students and care about their surroundings, schools should facilitate their students to be involvement in the social environment; this aims to train students in empathy, sensitivity and social concern for the surrounding environment. In the practice of learning in the 21st century, educators have an important role; this is because educators are required to design a learning system that is by this 21st century in terms of curriculum and teaching and learning processes. Furthermore, educators must master various skills that can make their students become individuals with skills in critical thinking to solve a problem, collaboration, communication, creativity and innovation, and technology and concepts. Therefore, learning in the 21st century is more integrated with knowledge, skills, and mastery of technology and information.

#### 4. CONCLUSION

Teaching 21st-century skills is necessary for every school to form skilled students in 21st-century society. The learning objectives are so that students are familiar with good communication, cooperate compactly, are critical of problems and can solve them, and are critical and innovative in producing goods. New. In teaching 21st-century skills, teachers can integrate them into different activities in the form of learning activities. Students practice alone, and the teacher acts as a facilitator. 21st-century learning should be carried out by prioritizing thinking and doing skills, especially aspects of critical thinking and problem solving, and being creative and innovative. At the same time, communication and collaboration are used to grow these thinking and doing skills. Learning assessments should hone students' logical skills in case study questions, descriptions, story questions, etc.

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