



**APPLYING PROJECT-BASED LEARNING TO REINFORCE THE STUDENTS' CHARACTER**

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**PENERAPAN PEMBELAJARAN BERBASIS PROYEK UNTUK MENGUATKAN KARAKTER SISWA**

**ARTICLE HISTORY**

**ABSTRACT**

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*Abstract: 21<sup>st</sup>-century skills become a concerning matter for all educators due to the challenges that the young generation will face in the future. And educators are on the essential duty to implement the proper teaching methods to support the students in achieving the competencies as well. The presence of "The 4Cs" (Communication, Collaboration, Critical Thinking, Problem-Solving, Creativity, and Innovation) as an indicator for learning outcomes are important components that cannot be separated in areas of life. These four skills are also included in the teaching and learning models named project-based learning. It is a teaching model that can lead students to experience an inquiry process. Students are expected to be able to develop knowledge, skills, and attitudes as the basic assessment for teachers in the context of character education. The outline of this paper is that first the concept of Project-Based Learning, the overview of character education, and lastly reviewing a number of theories of 4Cs skills to strengthen character building for students.*

**Keywords:** *character education, project-based learning, skills*

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**Abstrak:** Keterampilan abad 21 menjadi perhatian khusus bagi semua pendidik karena tantangan yang akan dihadapi generasi muda di masa depan. Dan pendidik memiliki tugas penting untuk menerapkan metode pengajaran yang tepat untuk mendukung siswa dalam mencapai kompetensi tersebut. Kehadiran indikator atas capaian belajar dalam pendidikan karakter yang dikenal dengan sebutan "4C" (Komunikasi, Kolaborasi, Berpikir Kritis, Pemecahan Masalah, Kreativitas dan Inovasi) dianggap sebagai komponen penting yang tidak dapat dipisahkan dalam bidang kehidupan. Keempat keterampilan ini juga termasuk dalam model pembelajaran yang diberi nama pembelajaran berbasis proyek. Pembelajaran ini merupakan model pengajaran yang dapat mengarahkan siswa untuk mengalami proses inkuiri. Siswa diharapkan mampu mengembangkan pengetahuan, keterampilan, dan sikap sebagai dasar penilaian bagi guru dalam konteks pendidikan karakter. Maka secara garis besar topik yang diangkat dalam penulisan ini yaitu konsep pembelajaran berbasis proyek, gambaran umum tentang pendidikan karakter, dan terakhir juga mengulas beberapa teori keterampilan 4C untuk dapat memperkuat pembentukan karakter siswa.

**Kata Kunci:** *pendidikan karakter, pembelajaran berbasis proyek, keterampilan*

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**INTRODUCTION**

21st-century skills, which are currently competencies in the world of education, have created many breakthroughs

and innovations in presenting several learning models. Learning is expected to produce human resources who have strong communication and collaboration skills,

experts in using technology, creative and innovative thinking skills, and the ability to solve problems (Larson & Miller, 2011). Various types of skills are important components that cannot be separated in areas of life. Trilling & Fadel (Wijaya et al., 2016) said that skills must be possessed in the 21st century (1) life and career skills, (2) learning and innovation skills, and (3) Information media and technology skills. The presence of "The 4Cs" also strengthens those skills, namely communication, collaboration, critical thinking and problem solving, creativity, and innovation (Andrian & Rusman, 2019). These four skills are included in important elements of project-based learning. A learning model which includes workgroup among students, communication, and critical thinking (Jumaya & Efyanto, 2018).

Projects engage students in activities that are interesting to them and important to the course of study. Projects also bring intensive experience for the students. They involve in teamwork and they often bring the project result in an exhibition or product for the audience or a real-world purpose (Fleming, 2000). The project-based learning model includes activities that accommodate the cognitive, psychomotor, and affective skills of students. The beginning of the project activities is from essential questions, the plan of the project, test results, and monitoring (Indasari, 2018). This learning model uses the project as a medium (García, 2016). With the existence of learning media, educators can create various activities that trigger creativity, determine teaching methods to be used in different situations and create a healthy emotional atmosphere among students (Thaariq et al., 2020). The learning model strategy will affect learning outcomes through contextual learning patterns that emphasize creative and innovative learning approaches (Mulyaningsih et al., 2021). This relates to the attention on character education that has been growing in public school systems because of the increasing tendency of negative behaviors

among youth (Williams et al., 2003). This project can be a tool to scaffold students' abilities not only academically but also socially. As said (Cooley, 2008) character education is an "engine of social change".

For example, A fact stated in the previous article by Mulyaningsih et al (2021), the problem is about the difficulty of the 5th-grade thematic science learning process, to understand some of the material presented because it uses reasoning from general to specific things. The process of learning about Natural Sciences can develop processing skills, understanding of concepts, application of concepts, and scientific attitudes on learning activities based on issues in society (Astuti et al., 2019). But in reality, the teaching process is less effective and efficient. Based on the description of several previous studies, regarding the basic concept of project-based learning and the impact of implementing project-based learning, the importance of research on this learning strategy will provide convenience in strengthening students' character in the process of meaningful learning activities. Therefore, the importance of this research is to empower the implementation of character education through project-based learning. Moreover, the purpose of this paper is to provide an understanding of project-based learning which can be a strategy to build students' character. So that problems related to the challenges of learning processes are expected to be resolved with integrated learning strategies as well as holistic learning outcomes.

## **METHOD**

This writing uses a descriptive qualitative approach. The method used in this writing is a literature review. A literature review is done by researching, reading, analyzing, evaluating, and drawing conclusion from scholarly literature such as journals and articles about project-based learning topic that is integrated into character education. It can be described as a systematic way of collecting and

synthesizing previous research (Baumeister & Leary, 1997). This process was developed from practical experience and is a synthesis of and influenced by various standards and guidelines suggested for literature reviews (Wong et al., 2013). The instrument of this research used are some documents related to Project-Based Learning concept and guideline, various theories from books, articles, scientific journals, and even from other digital reading platform sources whose validity can be justified that is relevant to the topic of discussion in this paper. Data collection is obtained by identifying all the information related to the topic, setting up the time to research, collecting some literature sources such as documents, books, articles, scientific journals. In addition, the data analysis is done as a qualitative systematic review. In the other word, the process of analysis can be described as a method of comparing findings from qualitative studies. The basic steps and important choices involved in conducting a literature review will be suggested using four phases; (1) designing the review, (2) conducting the review, (3) analysis, and (4) writing up the review. Drawing conclusions by researchers is the most important part to describe various kinds of studies from the data that has been collected.

## **RESULTS AND DISCUSSION**

### **Concept of Project-Based Learning**

Project-based learning is a teaching model that can lead students to experience an inquiry process. This teaching model emphasizes the form of projects on assigned tasks. Hence, students are expected to be able to develop knowledge, skills, and attitudes as the assessment basis for teachers (SEAQIL, 2020). Student choice is an important aspect of project work. Usually, teachers either provide a list of possible topics for students to choose from or have students submit topics for approval (Fleming, 2000). It also shows that project-based learning provides inexperienced teachers with varied and valuable learning

experiences and supports their professional and personal development (Tsybulsky & Muchnik, 2019). Furthermore, Heitmann distinguishes between learning ended with a project and project-based learning (Kubiatko & Vaculová, 2011). Learning ended project is an extension of what students have learned in the classroom and the knowledge implemented into a product project. The project is a lesson assigned at the end of the learning program, so the project is accomplished without having observation and inquiry process. Mostly, teachers assign this kind of project to students as individual or group work. In contrast, a project as a base of learning has distinctive features. Terms of process and the project results are the significant difference in the project-based learning and project given at the end of the learning. A pedagogical approach involving teamwork provides a very rewarding experience for learners. And specific topics are addressed from a distinct perspective. Students and teachers gain benefits from project-based learning through professional and emotional support (Simons & Baeten, 2016). The structure of project-based learning is guided by teachers such as selecting specific learning goals; requiring students to prepare an outline, design brief, proposal, or analysis before proceeding with the project; and establishing timelines and milestones to guide student efforts (SEAQIL, 2020).

### **The Advantage of Project Based-Learning for Elementary Students**

Children's development is divided into two broad periods. Ages 6 to 10 are middle childhood and ages 11 to 14 are early adolescence. To achieve competence, autonomy, and relatedness, children are driven by basic psychological needs during both periods. As a result, they can find opportunities to master and demonstrate new skills, make decisions independently, control their own behavior, and form good social interactions with peers and adults. These opportunities become learning challenges. The

basic biological and cognitive changes mark each period of children's development. The social surrounding changes are impacted as well. Therefore, children need to exercise their growing autonomy in school and organized programs, children also observe the world outside the family life, understand how to match themselves against the expectations of others, reflect their performance with that of their peers, and improve ways of responding to those challenges. They must go through these years to forge a personal identity, a self-concept, and a mindset toward achievement role in forming their success in school, work, and life (Wang et al., 2019). Striving to succeed, children need the willingness to engage in tasks. But this engagement depends on their interests and what they believe that a given task is essential. Both children's interests and their evaluation of specific tasks typically change during middle childhood.

Based on the theory of children's development explained above, has similarities with the principles of project-based learning. Besides acknowledging the project specifications, the main principles in applying project-based learning should be understood by teachers. There are seven primary standards as main principles, as follows (Dias & Brantley-Dias, 2017) :

1. Principle of challenging problem or question: Underlying problem assigning or essential questions can stimulate students in discovering the answers.
2. Principle of sustained inquiry: This principle is the next step of the inquiry process. Assigning problems and big questions at the beginning of learning is a starting point. Students' critical thinking skills and problem-solving, collaboration, and self-management can be promoted through the inquiry process.
3. Principle of authenticity: The authentic principle is related to the real-life context of learning.

Three things to apply the authentic principle in project-based learning, as follows:

- a. Authentic in the project: what students experienced from the real world, should be the basic design of projects.
  - b. Authentic in the activity and equipment used in the project: students perform activities during the project that should be similar to their real-life
  - c. Authentic in the impact of project results: the project results are expected to be very impactful on the environment.
4. Principle of student voice and choice: this principle requires students to express ideas and make their choices during the process of doing the project.
  5. Principle of reflection: Reflection helps to develop students' metacognitive. The purpose of this activity is to train how to face problems during the project and how to solve those problems.
  6. Principle of critique and revision: this principle aims to facilitate students to find and revise inappropriate matters in a project result.
  7. Principle of public product: publishing a product is well-known as the project result. By presenting a project result to the public will make students have been satisfied and motivated.

Regarding the principle of authenticity, to undermine the social contexts, the discourse should involve the character development: the family home; the school; and the local community. Downgrading forms of social life as inferior is a disrespectful way to lose self-esteem and the ability to do something of positive significance in their community. Even though it is not an easy task to build a system of social values, lifestyles, attitudes, and patterns of thinking to live in harmony with the environment based on the principle of sustainability. Students who learn through this method frequently collaborate to solve a specific problem, develop a product for a specific audience, and then make a process of

evaluation and development (Kokotsaki et al., 2016). Project-based learning is an effective way to develop 21st-century capabilities by encouraging critical thinking as well as problem-solving, interpersonal communication, information and media literacy, collaboration, leadership and teamwork, innovation, and creativity (Häkkinen et al., 2017). Some studies have a result on project-based learning shown that the method improves problem-solving abilities and academic performance, and has a positive influence on the perception of the learning profession (Ergül & Kargin, 2014). By designing their inquiries, planning their learning, organizing their research, and implementing a multitude of learning strategies, students can solve real-world problems. They learn and gain valuable skills as a strong foundation for their future. Moreover, the performance that is observed during the learning process can develop thinking skills together with the learning process of students.

#### **4Cs Skills to Reinforce the Character Traits**

Nowadays people require a higher level of information and technological literacy that is further beyond the basic knowledge that was considered sufficient in the past. In the 21st century, there are more complicated and complex challenges. For instance, global warming, immigration reform, pandemic diseases, financial meltdowns, and many more. Therefore, students must be prepared to solve these challenges. It is not only to solve any problem within society but also to be able to compete in the global society, students must be proficient communicators, creators, critical thinkers, and collaborators (the 4C's). The Ministry of Education and Culture of Indonesia (Kemendikbud) through the 2013 Curriculum emphasizes the importance of 21st-century skills. Teachers are expected to be able to facilitate students to have 21st-century learning and innovation skills.

The first skill is communication. Communication skills can be integrated with integrated language skills. In the teaching and learning process, the effective approach to sharpen communication skills is student-centered learning in which groups of learners work together to complete a task, solve a problem, or create a product. Tsybulsky & Muchnik (2019) stated that corporative learning or project-based learning provides the opportunity to build communication with peers, present and defend thoughts, share diverse students' opinions, other conceptual questions are all involved actively. However, in the context of 21st-century skills, communication covers a more complex dimension than it was in the 20th century. Communication is still a tool like social glue that holds together nations, corporations, scientific disciplines, and families, and some aspects of communication, both oral and written (Larson & Miller, 2011).

In general terms, collaboration means the practice of teamwork to achieve a set goal. It is an increasingly important educational outcome because organizations and businesses have increasingly moved to team-based work. The importance of collaboration skill has become the educational outcome since team-based work have increasingly been done within the organization and the work environment. Group work gives the chance to involve interaction among learners and provides them to learn from each other. Therefore, a social process occurs through interaction among learners in situated contexts. It is also known as the sociocultural approach. To build solid teamwork, the participants' skills, knowledge, and attitudes could be united by collaboration skills (Fisherman et al., 2001). Collaboration skill has been accepted as a teaching and learning approach implemented by leading students to work in groups to accomplish a task, or to solve problems by working on a project.

The critical thinking concept historically was originally acknowledged by

Socrates about 2,500 years ago. His theory of the questioning process has been an approach to increasing human reasoning skills quality. A French Philosopher, Descartes, revived the concept in the 17th century and then was prompted by Dewey as a prominent component in Western educational programs since the mid of the 20th century. Now critical thinking is accepted as an essential skill of 21st-century education worldwide and has been recommended as a pedagogical alternative to improve language learning (Pardede, 2019). Bloom's Taxonomy refined six classes of the cognitive domain representing the main elements of critical thinking—remember, understand, apply, analyse, evaluate, and create. Critical thinking needs to be developed by every student, for it helps them to be more active and become life-long learners, to understand, to evaluate different perspectives, to improve problem-solving ability which leads to empowerment, to take charge of their thinking, and to develop appropriate criteria and standards for analysing their thinking.

Creativity and creative thinking are two different things. Creativity is considered a process of generating new ideas, thoughts, and objects, whereas creative thinking refers to the thinking skills which enable a person to think of new original ideas, thoughts, and objects. Creativity is formed by creative thinking skills, motivation, and expertise (Kessler, 2013). Various definitions of creativity are provided by the literature. It is more appropriate as the act of rearranging or regrouping. He accentuated that creativity “uncovers, selects, re-shuffles, combines, and synthesizes already existing facts, ideas, faculties, skills. The more familiar the parts, the more striking the new whole”. Whatmore (2002) defined creativity as related to novelty, effectiveness, and ethics. Novelty identifies that the creativity of products, actions, or ideas should be different from the existing ones.

## **CONCLUSIONS AND RECOMMENDATIONS**

Education today requires educators to be more thorough and effective in teaching. Especially in achieving 21st-century competencies or what is known as the 4Cs. Communication, Collaboration, Critical thinking, and Creativity. As it is viewed further, these competencies require learning methods that can be a support to reinforce students' character. So, what we know as character education is not enough to present learning outcomes that are by these competencies. It is necessary to have innovation in education that consistently develops character traits so that student achievement can be realized.

Project-Based Learning has a core of teaching that prioritizes freedom to choose, execute and make decisions. Through these processes, character traits can be developed for students. Media or peers could impact the development outcomes or lead to the opposite direction, to help students become good citizens, the school still needs to employ character education equipping students with proper characteristics. As a result, the key to attaining this goal is participation and commitment. The authenticity principles are related to the real-life context of learning. The authentic project lets the students design the project based on what they are experienced and find a problem in their environment or society. This principle exposes students' analytical thinking and students perform activities during the project that should be similar to their real life, which means students learn by the contextual concept as well. And the other thing is the authentic project which means the project results are expected to be very impactful on the environment. Therefore, to empower students' character needs the implementation of project-based learning for effective learning and accomplishing strong character to have readiness for young generations to face the more challenging issues

of personal life, within society, or any other situations in the future.

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