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### Building Leadership Capacity in Elementary Students through Interactive Game-Based Learning in the Kampus Mengajar Program

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### ABSTRACT

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\* Corresponding Author at Departement of Primary School Teacher Education, Faculty of Tarbiyah and Teacher Education, Universitas Islam Nahdlatul Ulama Jepara, Jepara, 59427, Indonesia E-mail address: hamida@unisnu.ac.id Introduction/ Main Objectives: Today's complex global challenges demand that young people develop robust leadership skills, critical thinking abilities, and respectful conduct to address emerging issues effectively. This study aimed to explore the implementation of Interactive game-based learning in building the leadership capacity of students in elementary schools. Background problem: This research is conducted in response to the deficiency in character values and inadequate literacy and numeracy skills among elementary school students. Novelty: This research study elaborates in-depth on the leadership character values that can be applied to elementary school students through game-based learning. Research Method: This research uses a descriptive qualitative method in the form of a case study with a participant observation approach. The study was conducted in 5 elementary schools that are partner schools of the Kampus Mengajar Program in Jepara Regency. **Findings/Result:** This research shows that the implementation of interactive game-based learning in building students' leadership skills is carried out through four innovative game activities. First, the Harkasi Game (literacy treasure) stimulates leadership values of responsibility and cooperation. Second, the Hitari Game promotes leadership values of self-confidence and critical thinking. Third, the Siberta Game educates leadership values such as creative thinking and empathy. Fourth, the Ultrasi Game stimulates leadership values of honesty and creative thinking. Conclusion: Overall, the interactive game-based learning implemented in the partner elementary schools of the Kampus Mengajar Program has a positive impact on students, with 83% of 53 students showing improved leadership skills. Thus, it can be a solution to build leadership abilities.

### 1. Introduction

Schools serve as crucial venues for educating individuals. Therefore, the learning process in schools must be innovative and effective to produce highquality human resources for the nation's future (Pebristofora et al., 2022). However, according to the Institute for Management Development (IMD), in its 2023 IMD World Ranking, Indonesia's Talent human resources quality ranks 47th in the world and 9th in Asia with a score of 51.13 (Rainer, 2024). These data indicate that the quality of human resources in Indonesia still requires significant improvement through various programs. This is given that quality human resources are the driving force for socioeconomic development and the achievement of organizational goals (Destiana, 2023). Therefore, it is necessary to implement a learning and nurturing process for the nation's generation from an early age. One such initiative is the teaching campus program initiated by the Ministry of Education and Culture.

The Kampus Mengajar Program is an off-campus program focused on improving the quality of education by involving university students in supporting the learning process in schools. The main objective of this program is to enhance students' abilities in literacy, numeracy, and targeting character, partner schools, especially those with low competency assessment results (Anwar, 2021). According to data, the character development index of elementary school students in Jepara Regency still needs improvement, with scores ranging from 1.96 to 2.13, not yet reaching the cultural stage. The literacy competence index has only reached a

minimal competency level with a score of 1.82 (on a scale of 1-3). The proportion of students with advanced literacy skills is 5.49%, proficient literacy skills 57.23%, basic proficiency 27.15%, and those requiring special intervention 10.13%. The numeracy skills at the elementary school level are below the minimal competency level, with a score of 1.65 (on a scale of 1-3). The proportion of students with advanced numeracy skills is 2.85%, proficient 34.45%, basic 49.71%, and those needing special intervention 13% (Masyhadi, 2022).

These data motivate Teaching Campus students, along with teachers supervising lecturers, to collaborate in developing innovative learning methods to enhance students' character values, literacy, and numeracy in elementary schools. The character values instilled include critical thinking, creativity, honesty, responsibility, self-confidence, cooperation, and empathy. These values are part of the leadership values that must be instilled in students from an early age (Idawati et al., 2022). Good leaders emerge good from (Putnarubun, 2019). Students with strong leadership skills are capable of self-control, self-direction, and effective socialization. Research highlights that leadership plays a crucial role in children's development (Santosa, 2022).

The absence of leadership values in students can result in poor teamwork, inadequate problem-solving and decision-making skills, a lack of self-confidence, and minimal initiative and motivation, which can negatively impact students' learning outcomes (Annisa, 2022). Overall, without leadership values, students will face various obstacles in their personal and academic development. This can affect their ability to

reach their full potential and contribute effectively in social and professional environments in the future. Therefore, educators are expected to develop leadership attitudes in students through meaningful learning processes (Tabrani, 2020). One of these processes can be through interactive game-based learning activities. This aligns with the findings of several studies that show the effectiveness of game-based learning in improving student learning outcomes (Latif, 2021; Wardia, 2022) and character values (Adipat et al., 2021).

The application of game-based learning methods is crucial for students, especially at the elementary school level (Dipani, 2023). This aligns with Erikson's psychosocial theory, which states that elementary schoolaged children (ages 6-12) are in the "Industry vs. Inferiority" stage. At this stage, children strive to master various skills and tasks. Through play, children can develop a sense of competence and achievement (Arini, 2021). This drives the necessity for fun learning so that students can develop optimally and achieve their best condition, including in the five elementary schools that are target partners of the Teaching Campus program in Jepara Regency.

The implementation of various game-based learning variants in partner schools needs to be thoroughly reviewed so that it can be mapped to find data that can serve as references or resources for teachers, parents, other elementary schools, and future researchers. This study aims to explore the implementation of interactive game-based learning in building leadership skills in elementary school students. The urgency of this research is to provide a comprehensive and holistic exploration of the leadership values that can be instilled through the

application of interactive game-based learning in elementary schools. Thus, these leadership values can become part of the student's character and support the overall success of the organization.

### 2. Literature Review

### 2.1. Innovation of learning methods

Learning methods are steps or techniques designed to facilitate the teaching and learning process. Effective learning methods can help students easily understand and internalize new concepts (Khasanah, 2023). Some commonly used learning methods include lectures, discussions, simulations. studies. case and demonstrations. Each learning method has its own advantages and disadvantages. Therefore, innovation in learning methods has become a primary focus in the education world to enhance the effectiveness of the teaching and learning process.

Various new methods have been adopted to meet increasingly complex and dynamic learning needs. Innovations in learning methods have been evolving to meet the needs of independent learning in modern education. Some innovative learning methods include game-based learning (Tuzun et al., 2023), project-based learning (Miller, 2022), and technology-based learning (Wu, Y., & Huang, 2021). These innovations in learning methods aim to enhance learning quality (Rosyiddin et al., 2022), boost student participation and collaboration (Sukarman, 2023), and address diverse learning needs (Maulana, 2023).

Efforts to increase the effectiveness of teaching must be carried out through the development of teaching techniques by educators. Educators must be able to choose the appropriate methods according to the material and student characteristics. Learning objectives will be achieved more easily if educators innovate with effective strategies. Therefore, learning using innovative learning methods is one of the most important skills educators must possess to prepare students for the future. A teacher's success in managing a class can be seen in enthusiastic students who follow learning process (Mahanis, 2022).

### 2.2. Game-Based Learning

Game-based learning is an innovative educational approach that can be utilized to foster deep comprehension among learners. Game-based learning combines material with games to motivate and attract students' interest in learning, making the learning process enjoyable and meaningful. Gamebased learning (GBL) is a pedagogical approach that integrates educational content with interactive game elements to enhance the learning experience and outcomes. Game-based learning aims to combine learning objectives with engaging game mechanics, encouraging motivation, engagement, and a deeper understanding of the material among students (Hui et al, 2023).

The application of game-based learning techniques integrates gaming elements into the educational material. Research has shown that integrating games into learning content can increase students' interest in the material, making it effective as a practice tool (Ren, 2021). Several studies indicate that game-based learning offers various benefits, including its interactive nature, added appeal through enjoyable learning experiences, overcoming boredom from monotonous teaching methods, and

providing a deeper understanding of content (Kusumarasdyati, 2022).

### 2.3. Leadership

Leadership skills refer to the abilities and attributes that enable an individual to lead, motivate, and influence others to achieve common goals. Leadership involves various aspects, including making decisions, communicating managing conflicts, effectively, and providing inspiration and direction to a team or organization (Murray, 2020). Successful leadership can be measured by a leader's ability to communicate a vision, build trust among members, and exhibit behaviors that provide a positive example and apply values to achieve set goals (Dinh et al., 2021).

Character important values for developing leadership in elementary school students include active, innovative, critical thinking, creativity, integrity, cooperative attitudes and behaviors (Smith, 2023). Leadership is inseparable from motivation. Motivation is a process or drive that facilitates human behavior to achieve maximum results. Character education is a crucial component in the learning process to build leadership capacity among students. Leadership capacity refers to an individual's ability to manage and resolve problems (Sudiarti, 2024).

### 3. Method, Data, and Analysis

This study utilizes a descriptive qualitative approach with field research and case study methods, as five primary schools were involved. This case study involves indepth exploration by researchers of a particular program, activity, process, or event (Fusch, 2020). This research was conducted in 5 elementary schools in Jepara

Regency where the elementary schools are the schools where Teaching Campus students are assigned, including SDN 6 Panggang, SDN 3 Damarwulan, SDN 3 Tempur, SDN Pringtulis, SDN Mayong Lor.

The data collection techniques include interviews, observation, and document analysis. Interviews were conducted through two-way communication between researchers and informants to obtain information. The interview technique used was an in-depth interview with the principal, guest teachers, and students at the target primary school of the teaching campus, which was the location of this research. Interviews are used to gather information by interacting directly and asking questions openly with informants.

In addition, researchers also conducted observations to gather in-depth information about the implementation of the game-based teaching campus program in primary schools in Jepara district. The observation method used in this study was participant observation, in which the researcher was directly involved in the activities carried out by the informants as part of data collection.

The researcher was also a field supervisor at the school location where this study took place. In addition to interviews and observations, researchers also used documentation as additional data needed. Documentation includes recording real information from documents, reports, diaries, photo archives, and other sources (Marshall, 2022).

Data analysis techniques were applied to summarize the information that had been collected previously. In this study, data analysis was carried out using an inductive qualitative method, namely by processing the data obtained. The steps include data reduction (summarizing core information and selecting data according to themes), eliminating irrelevant data, presenting data, and drawing conclusions or verification (Michael Milles & Huberman, 2020).

### 4. Results and Discussion

This study was conducted in five primary schools selected by the Kampus Mengajar program in Jepara Regency. It was conducted during the fifth and seventh rounds of Kampus Mengajar program activities. This research was based on observations conducted by students from the Kampus Mengajar at SDN 6 Panggang, SDN 3 Damarwulan, SDN 3 Tempur, SDN 1 Mayong Lor, and SDN 1 Pringtulis. It indicates that the five elementary schools retain their B accreditation and demonstrate insufficient development of leadership values, including active attitudes, creative thinking, criticality, innovation, cooperation, and integrity. This can be observed in students who are passive learners, fail to finish assignments, have choosy friends, or possess low numeracy skills.

These findings align with the results of an interview with the principal of SDN 6 Panggang, who emphasized the need to help students cultivate practices that foster leadership values, as they are essential to character education. The principals of SDN 3 SDN Damarwulan and 3 Tempur emphasized the significance of instilling leadership values in primary school students, as this lays a crucial cornerstone for their future success. Students need to be able to lead, even if it is just for their benefit. A comprehensive character education helps naturally students acquire leadership qualities.

Based on the needs analysis above, the planned researcher to offer several innovative programs to assist Kampus Mengajar students in developing their leadership, literacy, numeracy, and technology skills, as well as to help schools build character values. Some programs implemented by the fifth group of Kampus Mengajar students in the targeted elementary schools required analysis and mapping of their results as they benefit both teachers and students, particularly in fostering character values, literacy, and numeracy skills. The Kampus Mengajar program review yielded insights that educators may use to supplement their efforts to instill character values, literacy, and numeracy skill. The program aimed to develop leadership skills among students in five elementary schools. Herein, researcher explores the program's results in detail.

### 4.1. The Implementation of Kampus Mengajar Program

The Kampus Mengajar program is an initiative by the Ministry of Education and Culture through the Kampus Merdeka (Independent Campus) policy. This program opportunities for university provides students to develop their skills and competencies by collaborating with teachers to improve students' literacy and numeracy. Students demonstrated significant improvements in literacy, numeracy, and skills. They also showed leadership enhanced technological adaptation abilities and developed stronger character values, addressing key educational challenges. Through the Kampus Mengajar program, students are expected to apply creative ideas to support the implementation of school

learning, creating effective, innovative, and meaningful learning experiences, thereby optimally achieving student development.

Various activities were planned at the initial implementation stage based on the programs carried out by several Kampus Mengajar teams in elementary schools in Jepara Regency. These activities aim to improve the quality of learning as a commitment of the students participating in the program.

### 4.1.1. Technology Adaptation

Technology adaptation is implemented comprehensively for both teachers and students. During the learning process, the Kampus Mengajar team introduces instructional videos and utilizes projectors to deliver content. For teachers, this adaptation includes training and support in creating educational media with tools like Canva, designing online quizzes, and producing creative, innovative instructional videos. For students, technology adoption focuses on guiding them in using computers and laptops, especially with Microsoft Word. They are taught essential skills such as proper typing techniques, text deletion, font adjustments, and formatting changes.

This technology adaptation program benefits both teachers and students. For teachers, it enables them to deliver meaningful and effective learning through the innovation of technology-based learning media development. For students, the benefits include becoming technologically skilled, competent, and ready to face global challenges.





**Figure 1.** Assistance the student in building creativity through technology

## 4.1.2. Enhancing Student Character and Preventing the Three Major Sins of Education

The presence of the independent curriculum focuses on six aspects of strengthening the Pancasila Students enhancing Profile, including 1) Faith in God Almighty and noble character; 2) Global diversity; 3) Cooperation; 4) Independence; 5) Critical thinking; and 6) Creativity. In addition to these six dimensions, there are also programs for preventing and handling the three significant sins of education, as stated in the Minister of Education and Culture Regulation No. 30 of 2021, namely bullying, intolerance, and sexual violence. Therefore, the Kampus Mengajar team, lecturers, and mentor teachers developed several programs for student character education in partner schools through habituation. exemplary behavior, socialization, and guidance. Examples of habituation carried out during the Kampus Mengajar program include saying sorry, thank you, please, and excuse me.

Additionally, students are habituated to reciting the Asmaul Husna and praying before and after learning with focus. In the learning process, students are taught various national and regional songs as an effort to form strong nationalism character. Furthermore, students are given education on anti-bullying, anti-sexual violence, and anti-intolerance attitudes.

These three major sins of education are implemented through socialization activities and educational games during daily classroom learning. Additionally, the team created class agreements regarding acceptable and unacceptable behaviors and their consequences.

### 4.1.3. Implementation of Game-based Learning

Game-based learning is an innovative approach to address educational challenges in elementary schools, where the learning process is combined with games to create an enjoyable learning atmosphere. In practice, the Kampus Mengajar team used this method to enhance students' literacy and numeracy skills.

The types of games applied in learning include: First, the Harkasi Game (Literacy Treasure Hunt): In this game, students are divided into several groups, and each group is given the challenge of finding the treasure hidden by the facilitator. The groups that successfully found the treasure must complete the challenge and then returned to the facilitator for a presentation. This game leadership instills values such as responsibility, proactivity, and critical thinking skills in students.





Figure 2. The Harkasi Game

Second, the Hitari Game (Fast Counting with Fingers) serves as a means to stimulate students' numeracy skills through finger guessing. This game is implemented for students in grades 2-4, who are at the stage of learning multiplication using concrete methods such as manipulatives or finger counting (Cheeseman et al, 2023). The concept of this game involves several stages. The initial stage begins with the teacher motivating students to be enthusiastic about learning with a finger and thumb song and providing a quick counting quiz. Next, students are paired up and play a rockpaper-scissors-like game using all five fingers. The number of fingers each student shows becomes the number to be multiplied. The student who multiplies the numbers correctly and fastest earns a score. After using five fingers, the game progresses to the next level, using ten fingers.

The results of this game show increased student interest in learning numeracy and stimulate critical thinking skills and responsibility in completing numeracy tasks well. The pair that completes the problems the fastest receives the highest points. The challenges in the Hitari Game make students enjoy learning multiplication and feel motivated to complete the challenges quickly to earn high points. Based on the tests given, the students' understanding and ability in multiplication operations improved from 35% to 83%.



Figure 3. The Hitari Game

Third, the Siberta Game (Creative Storytelling Students) educates leadership values such as creative thinking, empathy, and self-confidence. This game is conducted by dividing students into several groups, each consisting of three students. The teacher then distributes pieces of a pictorial story with different topics to each group. The students, in their groups, must arrange the picture pieces in a sequence to form a coherent and meaningful story. After completing their stories, each group presents their story to the class. Following the presentations, the teacher asks the students to line up to play a quiz by guessing the meanings and activities depicted in the pictures. The group that answers correctly earns points.

In this game, the ability to think creatively and teamwork are crucial. The content of the picture pieces used as game-based learning media also carries values of empathy and honesty. Research shows that the ability to process information is closely related to students' creative thinking skills (Qomariyah, 2021).



**Figure 4**. The Siberta game

Fourth, the Ultrasi Game (Literacy-Numeracy Snakes and Ladders) stimulates leadership values such as self-confidence and creative thinking in students. The initial stage of this game involves the teacher dividing students into several groups, each consisting of four students. The teacher then distributes snakes and ladders game sets, along with dice and flashcards containing numeracy and literacy questions. The teacher provides instructions before the game begins.

Once the game starts, each student plays Ultrasi in their respective groups. Students who land on a numbered square with a gift box image are given a question from the flashcards. The first student to reach the number 100 wins the game. This game educates students to think critically and creatively when answering the questions on the cards they receive. Self-confidence is demonstrated when they roll the dice and move their game pieces.



Figure 5. The Ultrasi Game

Based on the assistance provided, the results show that game-based learning can improve students' literacy, numeracy, and character values abilities, demonstrated by students' leadership capacity. The improvement in literacy and numeracy skills can be seen from evaluating student learning outcomes. Meanwhile, the increase in character values is observed through a survey conducted after implementing the game-based learning method.

The survey results on students' leadership capacity show that out of 53 students, 48% have excellent self-awareness and are proactive in carrying out gamebased learning activities, 33% are good, and 14% are still not. Regarding responsibility, 60% of students have a very good sense of responsibility, 33% are good, and 7% are not. Most of the students completed their tasks.

Additionally, most students also displayed good creativity and openness to ideas. This is evidenced by the survey results, which show that 86% of students have openness to ideas and are critical and creative in solving the challenges. In the aspect of cooperation, 60% of students demonstrated very good cooperation.

Meanwhile, in terms of leadership values such as self-confidence, empathy, and honesty, 83% of students improved their abilities. This is based on student responses during group learning activities. Almost all students were eager to learn and took responsibility for the tasks given.

Based on this data, it can be concluded that 83% of students have good leadership capacity. This figure shows that the gamebased learning method can not only improve children's cognitive aspects but also enhance affective aspects, as indicated by students' leadership capacity. This is in line with research that states that the gamebased learning method has a significant effect on student interest, motivation, and learning outcomes (Setiawan et al., 2020).

### 4.2. Correlation of Student Leadership Value from Game-Based Learning with Leadership Ability in Organizations

The correlation between the leadership value embedded in students through the implementation of game-based learning and its influence on leadership ability in organizations can be explained in more detail through the following aspects:

### 1. Collaborative teamwork

In game-based learning, many games are designed collaboratively, where players (students) must work together to achieve a goal. This emphasizes the importance of teamwork, where students learn to communicate effectively, share responsibilities, and utilize the strengths of each team member. These skills are especially important in complex organizations, where success relies heavily on an individual's ability to work in teams and build productive relationships with colleagues and high performers have more organized problem solving and deep reflection (Kuo&Huo, 2024).

### 2. Empathy and Communication

Game-based learning is implemented with social simulation, where players assume the role of characters with different backgrounds and motivations, which can increase students' empathy (Pavecy, 2021). Understanding perspectives and communicating appropriately are important skills leadership, where a leader must empathize with their team and convey messages clearly and convincingly (Jin&Ikeda, 2024).

### 3. Responsibility and Ownership

In game-based learning, students are often faced with choices where they have to take responsibility for the outcome. Failure or success depends on the students' own actions, which fosters a sense of responsibility and ownership. In the organizational world, an effective leader is one who has a sense of responsibility for decisions and actions and is ready to accept the consequences (Hallo et al., 2020).

### 4. Initiative and Confidence

Game-based learning provides space for students to take initiative and solve the challenges faced. This process builds students' confidence in facing new situations and provides motivation to lead. In organizations, leaders who are confident and proactive in facing challenges are needed to ensure success in carrying out the organization's mission (Khasanah & Himam, 2018).

Through the implementation of game-based learning, students acquire various skills that are highly relevant in the world of organizational leadership. These skills include the ability to collaborate, empathize, take responsibility, develop initiative and confidence. All of these aspects play an important role in building the character of a strong and effective leader.

## 4.3. Supporting and Inhibiting Factors for The Implementation of The Kampus Mengajar Program

According to interviews with students from the Kampus Mengajar team, several elements influence the program's implementation, both as support and hindrance. The factors supporting the implementation of the Kampus Mengajar program are as follows:

- Support System from School Principals and Teachers: School principals fully wholeheartedly support various programs planned by the Kampus Mengajar team. Additionally, teachers are cooperative and enthusiastic when sharing information about student learning needs and discussing programs. The school principals also facilitate the FKKS program as a means of monitoring, evaluating, and sharing programs that will or have been implemented.
- b. High Student Enthusiasm for Self-Development: During the program, the Kampus Mengajar team consistently habituates, motivates, and stimulates students to hone their interests and talents. This effort would not be effective without the students' awareness and desire to develop. This

is evidenced by the high enthusiasm of the students, which positively impacts their leadership abilities.

The inhibiting factors in the program's implementation include:

- a. Uneven literacy and numeracy skills among students, with some at moderate, low, or very low levels.
- b. Some teachers are not yet proficient in using technology.
- c. Environmental factors that affect students' character.

Solutions to these inhibiting factors include:

- a. Daily guidance activities such as literacy and numeracy mentoring (Bilinu Activity) to improve students' skills.
- Providing extrinsic motivation to students and examples of habituation in character building.
- c. The program includes providing assistance to teachers in technology adaptation and information on developing innovative learning media through Canva and educational videos.

### 5. Conclusion and Suggestion

The research findings reveal that the implementation of the Kampus Mengajar which includes optimizing program, libraries, bulletin adapting boards, technology, and game-based learning, can build students' leadership values. This is evident from the results of the questionnaire given after mentoring by Kampus Mengajar students. Of the 53 students, 81% became more proactive in learning activities. In terms responsibility, 93% improved completing tasks. Additionally, 86% students showed openness to ideas and critical and creative thinking skills in solving challenges, and 60% demonstrated very good cooperation with their peers.

The game-based learning innovations implemented by Kampus Mengajar students are first, the Harkasi Game (Literacy Treasure Hunt): This game stimulates leadership values of responsibility and cooperation. Second, the Hitari Game (Fast Counting with Fingers): This game encourages leadership values of selfconfidence and critical thinking. Third, the Siberta Game (Creative Storytelling Students): This game promotes leadership values of creative thinking, empathy, and self-confidence. Fourth, the Ultrasi Game (Literacy-Numeracy Snakes and Ladders): This game stimulates leadership values of honesty and creative thinking.

These games have been implemented and proven to positively influence student's character and leadership capacity. Thus, it can be concluded that the Kampus Mengajar program, especially game-based learning, positively impacts building the leadership capacity of elementary school students. Implementing game-based learning in elementary schools could be an alternative solution to help children build leadership capacity.

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