

Warrior Kids Games on Improving the Self-Efficacy Abilities and Fine Motor Skills of 5–6 Years-Old Children

Jogos infantis Warrior para melhorar as habilidades de autoeficácia e habilidades motoras finas de crianças de 5 a 6 anos de idade

Juegos de Warrior Kids para mejorar las capacidades de autoeficacia y la motricidad fina de niños de 5 a 6 años

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Abstract. The ability to have self-efficacy is an essential aspect for every individual. Self-efficacy skills that develop from an early age positively impact other factors, such as good social-emotional, cognitive, affective, motor skills, and academic. However, in real life, children's self-efficacy abilities still need to be developed because teachers still need to have the ability to choose suitable games to build them. This study looks at the effectiveness of the Warrior Kids' game in developing self-efficacy skills in children aged 5-6 years. This study used an experimental method with a one-group design, which compared the pre-test and post-test values; the sample used was 15 people, and the effectiveness, which is analyzed with Wilcoxon's formula, shows if the results of the study get a sig value of less than .05, the results obtained are .001, so it can be concluded that the efficacy of using warrior kids' games High means the efficacy of this game is in the high category, nature develops the self-efficacy abilities of early childhood. This is because the warrior kids' game can motivate children to conquer the game with exciting and fun obstacles, and each obstacle has been designed by prioritizing children's safety in playing so that children dare to try and participate in activities until they are finished properly.

Keywords: Game, Motor Skills, Self-efficacy, Early Childhood

Resumen. La capacidad de tener autoeficacia es un aspecto esencial para todo individuo. Las habilidades de autoeficacia que se desarrollan desde temprana edad impactan positivamente en otros factores, como el buen nivel socioemocional, cognitivo, afectivo y académico. Sin embargo, en realidad, las habilidades de autoeficacia de los niños aún deben desarrollarse porque los maestros aún necesitan tener la capacidad de elegir juegos adecuados para desarrollarlas. Este estudio analiza la eficacia del juego Warrior Kids en el desarrollo de habilidades de autoeficacia en niños de 5 a 6 años. Este estudio utilizó un método experimental con diseño de un solo grupo, que comparó los valores pretest y postest; la muestra utilizada fue de 15 personas, y la efectividad, la cual se analiza con la fórmula de Wilcoxon, muestra que si los resultados del estudio obtienen un valor sig menor a 0.05, los resultados obtenidos son 0.001, por lo que se puede concluir que la eficacia del uso Juegos de guerreros para niños Alto significa que la eficacia de este juego está en la categoría alta, la naturaleza desarrolla las habilidades de autoeficacia de la primera infancia. Esto se debe a que el juego de niños guerreros puede motivar a los niños a conquistar el juego con obstáculos emocionantes y divertidos, y cada obstáculo ha sido diseñado priorizando la seguridad de los niños al jugar para que los niños se atrean a intentar y participar en las actividades hasta terminarlas correctamente.

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Introduction

An individual's level of self-efficacy is one of the aspects of self-awareness or self-knowledge that may affect that person's life. The amount of self-efficacy that a person demonstrates has a significant influence on the beliefs that they have about the course of action that must be taken in order to achieve a specific goal. According to various studies (Moore, 1981), individuals with elevated levels of self-efficacy tend to exhibit greater confidence, competence, and perseverance. The proposition is that individuals possessing elevated levels of self-efficacy are likely to exhibit superior readiness in confronting obstacles, complexities, and adversities that emerge during the execution of a task and the predictions they encounter (Rocha et al., 2022; Wijaya et al., 2024).

According to Santrok and supported by Mirzawati Nevirani and Rusdinal (2020), self-efficacy concerns individuals' conviction regarding their capacity to effectively execute and accomplish a given task to achieve specific outcomes. As per the works of Kusaeri (Sezer & Kaya, 2019), it can be inferred that attitude serves as the fundamental driver for action, and action serves as the manifestation of

attitude. This implies that an individual's self-efficacy is the foundation for their initiative in addressing a specific issue, and their outcomes reflect their self-efficacy level. Robbins posits that self-efficacy is a determinant of an individual's performance in attaining a specific objective, as supported by scholarly works such as those of (Maddux, 2012; Schunk & Mullen, 2012). The significance of an individual's self-efficacy abilities in personal growth is widely acknowledged. Self-efficacy involves using self-regulation techniques such as goal-setting, self-monitoring, self-evaluation, and problem-solving strategies.

Related work

During the early stages of childhood, there is evidence of the development of a child's fighting power or self-efficacy. However, the current approaches and strategies must be revised, resulting in a limited impact on enhancing children's self-efficacy abilities (Husin et al., 2023; Suryadi et al., 2024). The observed phenomenon of children exhibiting fear and a lack of confidence when presenting in front of their peers, crying when unable to complete assigned tasks and activities, and displaying a reluctance to attempt problem-solving and participation is noteworthy. This issue

can be attributed to the prevalence of teacher-centered activities in the learning process (Waty et al., 2023; Godoy-Briceño et al., 2024), which should ideally be child-oriented, emphasizing the child's active participation rather than the teacher's dominance. As per the works of (Almonacid et al., 2023; Chemers et al., 2001; Reyhing & Perren, 2021; Schunk & Mullen, 2012), it can be inferred that. During the early stages of childhood, individuals possess the capacity to engage in socialization, interaction, and problem-solving.

Developing and installing a resolved frame of mind and a tenacious demeanor should not be saved for activities after formal schooling and the employment search (Concha-Cisternas et al., 2023; Hidayati et al., 2023). Instead, it is of the utmost importance that these characteristics be cultivated, honed, and rekindled from a young age. To succeed, one must have academic intelligence and be able to optimize their abilities and compete with others (Kaperotxipi et al., 2024). Only then can one hope to achieve their goals (Martínez, 2023). It is imperative that children begin developing a sense of self-efficacy at an early age if we can address this situation. The period known as early childhood is a crucial developmental stage that is marked by increased sensitivity. It is at this time that children need a significant amount of stimulus to aid their growth and development. The concept of Santrock deep has been discussed by (Marzetti et al., 2017; Jusoh et al., 2023) in academic literature. During the period known as Initiative Versus Guilt, which takes place in early infancy, children acquire a sense of self-assurance and work toward identifying the character they want to portray. Children are said to have a tremendous capacity for learning new things and understanding their environment, which extends to both the cognitive and emotional spheres of development. Therefore, it is essential to realize that children need suitable kinds of stimulation at each step of the developmental process, particularly concerning the growth of their sense of self-efficacy. This is especially important since insufficient stimulation may negatively impact children's self-efficacy.

Self-efficacy does not just develop within the individual; it needs stimulation and support from the environment. The environment plays an active role in shaping and assisting individual development; consistent and continuous training and habituation from the environment are needed from the time the child is at an early age because the stimulation from an early age will be able to help the development of optimal self-efficacy abilities as expected. The research conducted by (Van & Bijl, 2001) indicates that self-efficacy in young children is influenced by intrinsic motivation and external factors such as the environment. These studies suggest that a positive environment can enhance children's self-efficacy and promote positive outcomes.

Creating a high-quality childcare environment can provide a quality setting for children that supports healthy child development and provides a place for learning through play. This thinking is one of the bases for developing the "Warrior Kids" game model, where teachers and parents must prepare a play environment both at school and home for indoor and outdoor play activities (Puello et al., 2020; Setiawati & Handrianto, 2023). Adopting the Warrior Kids

game model as a possible way of promoting self-efficacy abilities in young children has been proposed as a viable means of achieving this goal. The Warrior Game is an exercise that is both physically taxing and strategic, requiring a mix of dexterity, endurance, and the ability to execute specific strategies. For participants, who are most often young people, to complete the course, they must work through several challenges within a certain amount of time. The model of the game has the potential to inculcate in youngsters a tenacious work ethic, tenacity in the face of failure, innovative problem-solving abilities, emotional fortitude to overcome failures, and the capacity to traverse obstacles and accomplish their goals effectively. The game model is also helpful in stimulating all of the fundamental areas of early childhood intelligence and the three educational domains. The cognitive domain, the emotive domain, and the psychomotor domain are the ones that need to be developed via education, according to Bloom's argument. These three domains need to be developed (Smaldino et al., 2012).

At a young age, the basis for children's growth of self-efficacy is laid by the children's normal habituation and activities intended mainly for children. This study aims to investigate the usefulness of the warrior kids game model in developing self-efficacy skills in children. This will be accomplished by paying attention to children and training them to prepare for their social environment. Additionally, this will be accomplished by providing children with workouts via games tailored to children's features. The data that the researcher supplied indicates that the structure of the presented model is consistent with Thorndike's behavioral theory.

Research Questions

This research aims to see the effectiveness of the warrior kids game in developing the self-efficacy abilities of children aged 5-6 years. The specific research questions of this research are; What is the description of the self-efficacy abilities of children aged 5-6 years before using the Warrior Kids game (pre-test)? What is the description of the self-efficacy abilities of children aged 5-6 years after using the Warrior Kids game (post-test)? How effective is the Warrior Kids game in developing the self-efficacy abilities of children aged 5-6 years?

Table 1.
Results of preliminary study of self-efficacy ability of 5-6 years old children in kindergarten Marhamah Tabing Padang.

No	Indicators of Self-Efficacy	Ratings			
		DAE/%	VWD/%	MB/%	UD /%
1	Confidence	18	18	29	35
2	Efficacy in solving problems	12	24	24	41
3	Efficacy in completing targets/tasks	12	18	24	47
4	Efficacy in Self-motivating	18	18	29	35

Note:

DAE: Developing as Expected

VWD: Very Well Developed

ED: Early Development

UD: Undeveloped

Importance of study

The importance of this research is due to the lack of development of children's self-efficacy abilities from an early age. Based on the initial data provided by the researchers, it

can be seen that, on average, children's self-efficacy abilities are underdeveloped and beginning to develop. Further information can be seen from the initial data in Table 1:

Fifteen children at Tabing Padang Padang Marhamah Kindergarten in Class B1 were observed. It can be seen from the child's self-confidence in the DAE category, 18%; in the VWD category, 18% of the number of children; in the ED category, 29, and in the UD category, 35%. Indicators of confidence in solving problems are seen in the 12% DAE category, 24% VWD category, 24% ED category, and 41% ED. Then, on indicators of confidence in completing targets/tasks, children who reach the DAE category are 12%, VWD is 18%, ED is 24%, and children in the ED category are as much as 47%. For the last indicator, namely the ability of children to believe in self-motivation, only 18% of children reached the DAE and VWD categories; 29% of children were in the ED category, while 35% were in the UD category. These data indicate that the self-efficacy abilities of children at Marhamah Kindergarten still need to be optimally developed and stimulated. This initial data is why researchers designed and tested a game that is hoped to develop the self-efficacy abilities of children aged 5-6 years, namely through the game Warrior Kids. Physical games are designed according to the needs and abilities of children.

According to Miller and Almon in (Guirguis, 2018; Ismaniar et al., 2023), play is like a machine power in learning activities in early childhood and is vital in developing children's physical, social, and emotional skills. Playing activities when children enter kindergarten will help children master problem-solving skills, adaptive abilities, and social skills. Lack of play activities, according to experts, will create serious worries. Lack of play creates increased anger and aggression in children in behavior development.

Warrior Kids is one game that can develop early childhood self-efficacy skills. The warrior game is a game of dexterity, physical endurance, and tactics where a child, to reach the finish, must go through several obstacles before they are given a specific time. These games can train children who participate in the game continuously to try hard to get ahead; they do not give up when they fail, think creatively to conquer obstacles, do not linger on sadness, but must get up immediately and be able to complete obstacles and reach their destination. Games also help stimulate all the fundamental aspects of early childhood intelligence and the three domains of education. Bloom argues that three domains must be developed through education, namely the cognitive domain, the affective domain, and the psychomotor domain (Smaldino et al., 2012).

Warrior is a word from English and has the meaning in the KBBI of "warrior." The word is also used in a program on TV known as Sasaki Ninja Game, which was adopted from a Japanese TV series (Leong, 2018; McEwan et al., 2010; Mei-Dan, 2018; Peek, 2018). The warrior game involves physical activity that pits dexterity, confidence, endurance, and adversity against each other; reaching the final stage at the peak of the game's activity is fun (Vega et al., 2022). Basic movements in learning are significant to be learned and known by the teacher; according to Pangarazi basic movements that are not stimulated optimally will impact the child's further development. Children who lack

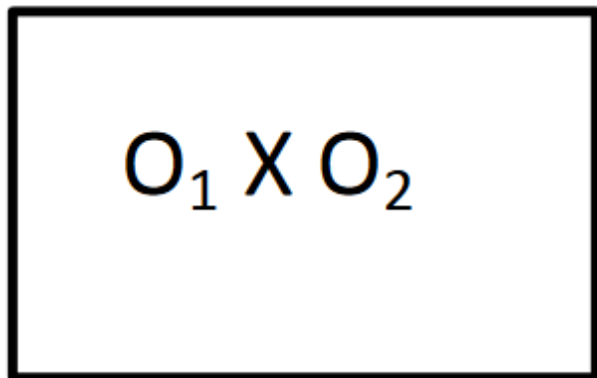
movement and play cause social and cultural problems. Also, (Marzetti et al., 2017) argued that, according to the suggestion, regular physical activity benefits children's cognitive and social development, whereas regular physical activity benefits children's cognitive and social development. This is also supported by (Alnedral et al., 2020) that movement is a strategy that helps facilitate affective and character development in a person. So, playing and moving are the most fundamental things for children's development from an early age. (Lindsay, A. & Byington, 2020) fundamental movement skills are a specific set of skills that involve using different parts of a child's body for more complex and specialized skills they will need throughout their life. Based on the experts' opinions above, movement activity is a significant requirement in supporting growth and development in children. Self-efficacy is developed in children from an early age through consistent habituation and exercises for children. Warrior Kids games help children develop self-efficacy by paying attention to and preparing them for their social environment, providing exercises through games according to the child's characteristics. Thorndike's behavioral theory supports the game design that the researcher offers.

The games designed through Warrior Kids games are expected to optimize children's development, especially self-efficacy skills. Games are designed to involve children in physical games but are still adapted to the characteristics of early childhood play. Warrior Kids game is an active play activity. This game is a learning innovation that can develop children's self-efficacy abilities from an early age. This warrior kids game activity is designed as a physical activity involving the will to play individually and in small and large groups. Physical games with challenges and missions in every playing activity in the Warrior Kids game challenge children to finish the game because there are targets to be achieved at the end of the game, set strategies to arrive at the final goal, and are motivated by various exciting stages (Bergen, 2002; Kenneth, 2021; Sheridan et al., 2010).

With this game, it is hoped that it will result in or have an impact on the development of self-efficacy abilities in children from an early age and help children to be able to make simple decisions after getting direct experience involving all the five senses (physical and psychological) as well as experience when playing in solving problems.

Materials and Methods

The present study employs experimental methodology where researchers administer treatment by designing games that target enhancing self-efficacy abilities in early childhood. The experimental methodology employed in this study was a pre-test and post-test design within a single group, specifically in the stump group. The observed trend in this research is:



Note: O₁ = Pre-test scores, X = Warrior Kids Game Model, O₂ = Post-test scores.

The research population was 39 people, and 15 people were used as samples in this study. To test the validity, we used SPSS version 28.0. The effectiveness test was analyzed using Wilcoxon's formula where if the sig value < 0.05, then H₀ is rejected, it can be concluded that the warrior kids game model is effective for developing self-efficiency abilities; if H₀ > 0.05, then H₀ is accepted with the conclusion that the warrior kids game model is not effective in developing self-efficiency abilities (García Álvarez et al., 2022).

Procedure

The study followed a structured protocol comprising three main steps. Firstly, a pre-test was conducted wherein the participants underwent assessment using a self-efficacy evaluation instrument. This initial phase aimed to establish baseline data regarding the participants' self-efficacy abilities. Subsequently, the participants engaged in the Warrior Kids game intervention, involving various activities tailored to enhance self-efficacy skills, over a predetermined period. Finally, following the intervention, a post-test was administered using the same self-efficacy assessment instrument to reassess the participants' self-efficacy levels. This comprehensive procedure allowed for the evaluation of the effectiveness of the Warrior Kids game intervention in developing self-efficacy abilities among the participants.

Data Analysis

To analyze the effectiveness of the Warrior Kids game in developing the self-efficacy abilities of the children, the researchers employed the Wilcoxon signed-rank test. This non-parametric statistical test was selected due to the small sample size and the ordinal nature of the self-efficacy assessment data. A significance level of $p < 0.05$ was used to determine the effectiveness of the intervention.

In addition to the quantitative analysis, the researchers conducted qualitative observations during the Warrior Kids game sessions to gather additional insights into the children's behavioral and emotional responses to the activities. These observations were used to contextualize and further interpret the quantitative findings.

By employing a pre-test and post-test design, the researchers aimed to establish a clear understanding of the participants' self-efficacy abilities before and after the

Warrior Kids game intervention. The use of the Wilcoxon signed-rank test, coupled with qualitative observations, provided a comprehensive and rigorous approach to evaluating the effectiveness of the game-based intervention.

Results

Before administering the intervention utilizing the Warrior Kids game to enhance the self-efficacy skills of children between the ages of 5 and 6, the investigator obtained preliminary data through a pre-test. The Warrior Kids game intervention involved a series of physical and cognitive challenges designed to develop the self-efficacy abilities of the participating children. The children engaged in the game activities over a period of several weeks, with the researchers closely observing their behavior and responses during the sessions. Data can be seen in the following table:

Table 2.
Results of pre-test and post-test scores

No	Pre-test	Post-test	Difference
1	25	40	15
2	26	34	8
3	27	40	13
4	22	30	8
5	26	40	14
6	26	30	4
7	26	40	14
8	25	37	12
9	22	32	10
10	30	40	10
11	26	34	8
12	22	40	18
13	21	34	13
14	20	40	20
15	27	40	13
Average elementary school	2.74	3.97	4.14

Table 2 shows the differences and increases in scores obtained before and after the warrior kids' game; data describes that children's self-efficacy ability increases after carrying out the game. It can be seen from 15 people that the sample studied showed a good improvement. The data reveals a notable increase in the participants' self-efficacy scores after engaging in the Warrior Kids game intervention. The average difference between the pre-test and post-test scores was 12 points, indicating a substantial improvement in the children's self-efficacy abilities. Furthermore, these results are continued with effectiveness tests using Wilcoxon's formula, with the following results:

The analysis test results were seen in the negative value of the ranking; no children experienced an increase in their self-efficacy after the warrior kids' game was carried out, as seen from the mean rank and sum of rank values. There was an increase in self-efficacy ability seen from the value of positive ranks; 15 sample people increased from a mean rank of 8 to a sum of 120. The children's self-efficacy abilities were assessed using a validated assessment instrument both before (pre-test) and after (post-test) the Warrior Kids game intervention. The assessment focused on measuring key components of self-efficacy, such as self-confidence, problem-solving skills, goal-setting, and self-motivation.

Table 4 shows the results of statistical tests that the sig

value < 0.05 , which is obtained by a sig of 0.001. So, it can be concluded that H_0 is accepted, so Warrior Kids games are effective for developing self-efficacy skills in children aged 5-6 years. Further analysis using the Wilcoxon signed-rank test (see Tables 3 and 4) confirmed the statistical significance of these findings. The results showed a z-value of -3.415 and a p-value of 0.001, which is well below the established significance level of 0.05. This indicates that the Warrior Kids game intervention was highly effective in enhancing the self-efficacy abilities of the participating children.

Table 3.

Rank results of the effectiveness of the warrior kids' game model in developing self-efficacy abilities of children aged 4-5 years

	N	Mean Rank	Sum of Ranks
Negative Ranks	0 ^a	.00	.00
Positive Ranks	15 ^b	8.00	120.00
Ties	0 ^c		
Total	15		

a. Post-Test < Pre-Test

b. Post-Test > Pre-Test

c. Post-Test = Pre-Test

Table 4.

Statistics Test

Test Statistics ^b	
	Post-Test - Pre-Test
Z	-3,415 ^a
Asymp. Sig. (2-tailed)	,001

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Discussion

Children's Early Self-Efficacy Ability Before Getting Treatment (Pre-test)

Initial data on children's self-efficacy abilities during the pre-test or before treatment was given shows that children's self-efficacy is relatively low. It can be seen that almost half of the children studied had self-efficacy conditions in the underdeveloped category. The category of developed children dominates second place, and only a few children are already in the developing category. This condition is quite worrying, because based on various references related to the development of self-efficacy in a person, self-efficacy abilities in children aged 5-6 years should have well-developed if the environment provides positive support.

The self-efficacy skill is an important aspect for every individual and it requires stimulation from an early age. At each stage of life development, humans have different self-efficacy abilities according to their needs. Bandura (Van & Bijl, 2001) stated that self-efficacy develops regularly. The following are the stages of developing self-efficacy: 1) Babies begin to develop self-efficacy as an effort to train the influence of the physical and social environment. They begin to understand and learn their physical, social and language skills, which are almost regularly used and handled in the environment. 2) The initial growth of self-efficacy focuses on parents and is then influenced by siblings, peers and other adults. 3) self-efficacy in adulthood includes adjustment to marital problems and career advancement. 4) Meanwhile, self-efficacy in old age is difficult to form because during this period there is mental and physical

decline, work retirement, and withdrawal from the social environment. From the explanation put forward by Bandura, it can be understood that the development of self-efficacy abilities at each stage of human life is different. Especially in early childhood, the development of self-efficacy is greatly influenced by the environment in which and with whom the child lives. Children who live in a responsive and supportive social environment will develop high self-efficacy that meet expectations, and vice versa. Children who live in an ignorant and neglected social environment will experience delays in the development of self-efficacy.

We can further understand the development of each child's self-efficacy by paying attention to several aspects. According to Bandura (9), the aspects of self-efficacy include the following: 1) Self-confidence in uncertain situations that contain ambiguity and are full of stress. Children who have high self-efficacy are not too affected if they are in different situations and conditions, because they have high self-confidence. Self-efficacy determines the component of self-confidence that an individual has in facing future situations that are unclear, unpredictable and often cause stress. A person who has self-efficacy shows confidence in the actions they will take and how much effort they make will determine the achievement of the final goal. Next is the second aspect, confidence in the ability to overcome problems or challenges that arise. Self-efficacy is also related to an individual's ability to overcome problems or challenges that arise. If self-confidence is high in facing problems, then the individual will try as hard as possible to overcome these problems. On the other hand, failure is most likely to occur if individuals are not confident in their abilities to deal with difficult situations. 3) Confidence in the ability to achieve the targets that have been set. Individuals with high self-efficacy will set high targets and always be consistent with these targets. Individuals will try to set higher targets if the actual targets can be achieved. In contrast, individuals with low self-efficacy will set initial targets and make low estimates regarding the achievement of outcomes. Individuals will reduce or even cancel the targets they have achieved if they face several obstacles, and in the next task they tend to set even lower targets. 4) Confidence in the ability to build motivation and cognitive abilities takes necessary actions to achieve good result. Motivation, cognitive ability and determination to act are needed to achieve optimal work results. When faced with a task, motivation, cognitive abilities, and appropriate actions are needed to achieve good results. A person's ability and motivation in facing work situations is very determining.

The study above explains that self-efficacy skill in a person, especially in early children, do not just develop, but require full support from the environment, especially the closest environment such as the family and early childhood education institutions. Children need to be well-stimulated in order to develop appropriate the self-efficacy skill (Bodrova & Leong, 2019; Mosley, 2014).

Children's self-efficacy abilities after being given the Warrior Kids game treatment experiment

Initial data on children's self-efficacy abilities during the pre-test or before the treatment shows that children's self-

efficacy is relatively low. It can be seen that almost half of the children had self-efficacy conditions in the underdeveloped category. The category of children starting to develop dominates second place, and only a few children are in the already developing category. This condition is quite worrying, because based on various references related to the development of self-efficacy in a person, self-efficacy abilities in children aged 5-6 years should have developed well if the environment provides positive support (Pramling et al., 2019).

The ability of self-efficacy is an important aspect for every individual, so this ability requires stimulation from an early age. At each stage of life development, humans have different self-efficacy abilities according to their needs. Bandura (Van & Bijl, 2001) stated that self-efficacy develops regularly; The following are the stages of developing self-efficacy: 1) Babies begin to develop self-efficacy as an effort to train the influence of the physical and social environment. They begin to understand and learn their physical, social and language skills, which are almost always used and handled in the environment. 2) The initial growth of self-efficacy focuses on parents and is then influenced by siblings, peers and other adults. 3) self-efficacy in adulthood includes adjustment to marital problems and career advancement. 4) Meanwhile, self-efficacy in old age is difficult to form because during this period there is mental and physical decline, work retirement, and withdrawal from the social environment. From the explanation put forward by Bandura, it can be understood that the development of self-efficacy abilities at each stage of human life is different. Especially in early childhood, the development of self-efficacy is greatly influenced by the environment in which and with whom the child lives. Children who live in a social environment that is responsive and always supportive will be children who have self-efficacy abilities that meet expectations, and vice versa. Children who live in an ignorant and neglected social environment will experience delays in the development of self-efficacy (Li et al., 2016; Vostal, , Lee, & Miller, n.d.).

We can further understand the development of each child's self-efficacy by paying attention to several aspects. According to (Bandura, 1997; Van & Bijl, 2001), the aspects of self-efficacy include the following: 1) Self-confidence in uncertain situations that contain ambiguity and are full of stress. Children who have high self-efficacy are not too affected if they are in different situations and conditions, because they have high self-confidence. Self-efficacy determines the component of self-confidence that an individual has in facing future situations that are unclear, unpredictable and often cause stress. A person who has self-efficacy shows confidence in the actions they will take and how much effort they make will determine the achievement of the final goal. Next is the second aspect, confidence in the ability to overcome problems or challenges that arise. Self-efficacy is also related to an individual's ability to overcome problems or challenges that arise. If self-confidence is high in facing problems, then the individual will try as hard as possible to overcome these problems. On the other hand, failure is most likely to occur if individuals are not confident in their abilities to deal with difficult situations. 3) Confidence in the ability to achieve the targets that have been set.

Individuals with high self-efficacy will set high targets and always be consistent with these targets. Individuals will try to set higher targets if the actual targets can be achieved. In contrast, individuals with low self-efficacy will set initial targets and make low estimates regarding the achievement of outcomes. Individuals will reduce or even cancel the targets they have achieved if they face several obstacles, and in the next task they tend to set even lower targets. 4) Confidence in the ability to grow motivation and cognitive abilities and take the necessary actions to achieve a result. Motivation, cognitive ability and determination to act are needed to achieve optimal work results. When faced with a task, motivation, cognitive abilities, and appropriate actions are needed to achieve good results. A person's ability and motivation in facing work situations is very determining.

The study above explains that self-efficacy abilities in a person, especially children, do not just develop, but need full support from the environment, especially the closest environment such as the family and early childhood education institutions. Children need to be stimulated well so that appropriate self-efficacy development can be achieved.

The effectiveness of the Warrior Kids game in developing the self-efficacy abilities of children aged 5-6 years

The effectiveness test results prove that the use of the Warrior Kids game is very effective or has high effectiveness in developing Self-Efficacy Abilities in children aged 5-6 years. The Warrior Kids game is designed with challenges (obstacles) that are designed to have different levels of difficulty, so that children are indirectly motivated to conquer the challenges. Apart from that, arranging a play environment that also pays attention to children's safety has also been proven to provide comfort and reduce children's feelings of worry when playing. So that after children follow the game process that has been designed, their self-efficacy abilities will be high. This can be seen in children who have high self-confidence and willingness to carry out and carry out any tasks given to them.

Quoted from five-star ninjas, it is stated that the Warrior Kids game benefits children such as improving coordination. This game helps strengthen and optimize children's movements and improves coordination and balance throughout the child's body. Full inadequate functional strength, this game helps strengthen muscle strength that can be used in everyday life. Build mental strength: This game helps build mental strength, such as a clear mind, focus, and determination needed to overcome the obstacles that children face in everyday life (Leong, 2018; Mei-Dan, 2018; Peek, 2018).

This game also impacts other intelligences because it involves children cognitively, affectively, and psychomotorically. Where the child plans and predicts how he will play the game well until completion, the child takes a stance and manages himself emotionally to continue participating in play activities even though mistakes occur in carrying out according to play instructions, the child moves, which involves all his body parts, both gross motor skills for running. It also uses fine motor skills to pick up and attach media according to instructions (. Alnedral, 2020; Ghufroon &

Suminta, 2017; Smaldino et al., 2008).

This warrior kids game aligns with early childhood education, namely holistic and integrative learning, where learning activity can develop all aspects of a child's intelligence and comes from various scientific disciplines. Thus, this research shows that the Warrior Kids game is very effective in developing learning activities for young children. The Warrior Kids game is an active play activity. This game is a learning innovation that can develop children's self-efficacy abilities from an early age. The Warrior Kids game activity is designed as a physical play activity that involves playing individually and in small or large groups. Physical games with challenges and missions in each playing activity in the Warrior Kids game challenge children to complete the game because there is a target to be achieved at the end of the game, set a strategy to reach the final goal and be motivated by various exciting stages.

The resulting games can be used to develop self-efficacy abilities in early childhood. This warrior kids game is adapted to children's learning characteristics and age development to facilitate the development process. The Warrior Kids game is made in the form of a physical game that involves children making movements such as running, climbing, jumping, and crawling. The game is designed with several challenges and missions in each given platform. Each obstacle is given more educational challenges, such as expressing symbols and recognizing letters and numbers. Carrying out play activities can make children enjoy themselves, volunteer to participate in the game, be challenged to conquer every obstacle, and dare to try.

The Warrior Kids game can meet children's basic needs. Play activities carried out by young children can function as a forum for learning various things, knowing the rules, providing momentum for socializing with peers, placing oneself, managing emotions, tolerance, cooperation, and upholding sportsmanship. Playing helps children develop a sense of self-esteem. Children need play activities because they need a place to release emotional urges appropriately.

The findings of this study corroborate existing research on the value of play-based activities in fostering self-efficacy and other essential competencies in early childhood (Bodrova & Leong, 2019; Guirguis, 2018). The Warrior Kids game, with its blend of physical, cognitive, and emotional elements, seems to have provided a supportive and engaging environment for children to develop and practice self-efficacy skills.

The implications of these findings are twofold. First, the Warrior Kids game presents a promising and practical intervention for educators and early childhood practitioners seeking to actively promote self-efficacy development in their students. The game's design and implementation can be adapted to various educational settings, offering a versatile and engaging approach to fostering this critical skill.

Second, the study underscores the importance of incorporating play-based, child-centered activities into early childhood curricula and programs. By designing and implementing activities that align with children's developmental needs and interests, educators can create learning environments that effectively nurture the growth of self-efficacy and other essential competencies.

Future research should explore the long-term sustainability of the self-efficacy gains observed in this study, as well as the potential for the Warrior Kids game to have a broader impact on other areas of child development, such as fine motor skills and social-emotional learning. Additionally, a comparison of the Warrior Kids game with alternative self-efficacy interventions could provide deeper insights into the unique contributions of this game-based approach.

Overall, the findings of this study highlight the significant potential of the Warrior Kids game in enhancing the self-efficacy abilities of young children. By providing an engaging, challenging, and supportive learning environment, this game-based intervention can serve as a valuable tool for early childhood educators and practitioners in their efforts to foster the holistic development of their students.

Conclusion

The results of this research can conclude that there is a difference in the self-efficacy ability values obtained before playing the Warrior Kids game and after playing the Warrior Kids game—post-test score with a difference between the pre-test and post-test of 4.14. The results of the effectiveness analysis test can be seen in the negative rank values; there are no children who did not experience an increase in their self-efficacy abilities after playing the Warrior Kids game, and it can be seen from the mean rank and sum of rank values. There was an increase in self-efficacy abilities seen from the value of the positive rank that 15 people in the sample experienced an increase from a mean rank of 8 with a sum of ranks of 120. The statistical test results showed that the sig value was < 0.5 , which was obtained as a sig of 0.001. So, it can be concluded that H_0 is accepted, so the Warrior Kids game is effective for developing the self-efficacy abilities of children aged 5-6 years. It can be understood that if self-efficacy abilities are properly stimulated in children from an early age, their development can be achieved as expected. On the other hand, if stimulation is not carried out or is carried out inappropriately, then the child's self-efficacy abilities cannot develop optimally. The Warrior Kids game can meet children's basic needs. Play activities carried out by young children can function as a forum for learning various things, knowing the rules, providing momentum for socializing with peers, placing oneself, managing emotions, tolerance, cooperation, and upholding sportsmanship.

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References

- Almonacid, J. H., Herrera, J. D. C. P., Arias, I. M., Salinas, C. O., Covarrubias, M. C., González, M. W., & Gallardo, N. L. (2023). Nivel de Autoeficacia Docente de profesores y profesoras de Educación Física que participan del sistema escolar en Chile. *Retos: Nuevas Tendencias En Educación Física, Deporte y Recreación*, 48, 564–574.
- Alnedral, A., Umar, U., & Aldani, N. (2020). Strategy to Improve Intelligent Characters and the Fighting Ability for Junior Athletes of Tarung Derajat. *International Journal of Psychosocial Rehabilitation*, 24(05). <https://doi.org/10.37200/IJPR/V24I5/PR201743>
- Alnedral, U. and N. A. (2020). Strategy to Improve Intelligent Characters and the Fighting Ability for Junior Athletes of Tarung Derajat. *International Journal of Psychosocial Rehabilitation*, 24(05), 748.
- Bandura, A. (1997). *Self-Efficacy The Exercise Of Control*. Stanford University.
- Bergen, D. (2002). The role of pretend play in children's cognitive development. *Early Childhood Research and Practice*, 4(1).
- Bodrova, E., & Leong, D. J. (2019). Making Play Smarter, Stronger, and Kinder Lessons from Tools of the Mind •. *American Journal of Play*, 12(1), 37–53.
- Chemers, M. M., Hu, L. T., & Garcia, B. F. (2001). Academic self-efficacy and first-year college student performance and adjustment. *Journal of Educational Psychology*, 93(1), 55–64. <https://doi.org/10.1037/0022-0663.93.1.55>
- Concha-Cisternas, Y., Bravo-Bravo, J., Contreras-Torres, E., & Riveros-Brito, J. (2023). Efectos de un programa de juego motor estructurado sobre la autoeficacia motriz y componentes de la condición física en escolares (Effects of a structured motor game program on motor self-efficacy and components of physical fitness in schoolchildren). *Retos*, 49, 435–441.
- García Álvarez, D., Cobo Rendón, R., & Hernández Lalinde, J. D. (2022). Validez, fiabilidad e invarianza factorial de las escalas de autoeficacia general y autoeficacia académica en estudiantes universitarios. <http://bonga.unisimon.edu.co/handle/20.500.12442/11476>
- Ghufron, M. N., & Suminta, R. R. (2017). Hubungan antara kepercayaan epistemologis dengan belajar berbasis regulasi diri. *Jurnal Psikologi Insight*, 1(1), 40–54.
- Godoy-Briceño, J., Joaquín Álvarez-Opazo, J., Zavala Crichton, J. P., Solís Urra, P., & Rojas Moreno, S. (2024). Autoeficacia del profesorado y factores claves para la inclusión del alumnado con discapacidad en clases de Educación Física en Chile. *Retos: Nuevas Perspectivas de Educación Física, Deporte y Recreación*, 53. <https://recyt.fecyt.es/index.php/retos/article/download/102322/75886/401419>
- Guirguis, R. (2018). Should We Let Them Play? Three Key Benefits of Play to Improve Early Childhood Programs. *International Journal of Education and Practice*, 6(1). <https://doi.org/10.18488/journal.61.2018.61.43.49>
- Hidayati, A., Eldarni, E., Solfema, S., Handrianto, C., & Sunarti, V. (2023). Strategies for integrating a web-based learning environment based on authentic learning in distance learning for elementary school students. *Journal of Education and E-Learning Research*, 10(3), 437–445. <https://doi.org/10.20448/jeelr.v10i3.4840>
- Husin, A., Maharani, S. D., Raharjo, M., Yosef, Y., Sumarni, S., & Handrianto, C. (2023). Prospects for implementation of green campus in education and research pillars at edupark fkip Unsri become edutourism. *International Journal of Professional Business Review*, 8(4), e01597. <https://doi.org/10.26668/businessreview/2023.v8i4.1597>
- Ismaniar, Landa, K. S., Zaini, M., & Utoyo, S. (2023). Improving Fine Motor Skills of Children Using Eggshell Collage Media. *International Journal of Instruction*, 16(4), 597–614.
- Jusoh, A. J., Imami, M. K. W., Handrianto, C., Isa, A. N. M., Omar, S. Z., Abdullah, A., & Wahab, S. (2023). Verification the reliability and validity of a Malaysian version of rathus asertiveness schedule as drug prevention scale. *Islamic Guidance and Counseling Journal*, 6(2). <https://doi.org/10.25217/0020236369700>
- Kaperotxipi, N. A., de Lahidalga Agirre, G. M., de Azua Larrinaga, M. R., & Atxa, I. E. (2024). Perceived academic self-efficacy of adolescents and the relationship with physical activity. *Retos: Nuevas Tendencias En Educación Física, Deporte y Recreación*, 54, 264–271.
- Kenneth R. G. (2021). The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child. <https://doi.org/10.1542/peds.2006-2697>
- Leong, N. (2018). Against Women's Sports. *SSRN Electronic Journal*, 1–43. <https://doi.org/10.2139/ssrn.2923503>
- Li, J., Hestenes, L. L., & Wang, Y. C. (2016). Links Between Preschool Children's Social Skills and Observed Pretend Play in Outdoor Childcare Environments. *Early Childhood Education Journal*, 44(1), 61–68. <https://doi.org/10.1007/s10643-014-0673-2>
- Lindsay, A. & Byington, T. (2020). No Title Fundamental Movement Skills | Active Kids Are Active Adolescents. University of Nevada, Reno, IP.
- Maddux, J. E. (2012). *Self-efficacy, Adaptation, and Adjustment: Theory, Research, and Application*. Plenum Press.
- Martínez, R. S. (2023). Relación entre dimensiones de autoeficacia y metas académicas en estudiantes universitarios con movilidad reducida (Relationship between dimensions of self-efficacy and academic goals in university students with reduced mobility). *Retos*, 48, 420–428. <https://doi.org/10.47197/retos.v48.97029>
- Marzetti, E., Calvani, R., Tosato, M., Cesari, M., Bari, M. Di, Cherubini, A., Broccatelli, M., Saveria, G., D'Elia, M., Pahor, M., Bernabei, R., & Landi, F. (2017). Physical Activity and Exercise as Countermeasures Tophysical Frailty and Sarcopenia. *National Library of Medicine*, 29(1). <https://doi.org/doi:10.1007/s40520-016-0705-4>
- McEwan, H., Goto, S., & Horike, Y. (2010). The Bukkyo University and University of Hawai'i College of Education Partnership. *Educational Perspectives*, 43, 67–68.
- Mei-Dan, O. (2018). Children and extreme sports: A parent's perspective. *Research in Sports Medicine*, 26(1), 1–4. <https://doi.org/10.1080/15438627.2018.1432195>
- Mirzawati Neviyarni, Rusdinal, R. (2020). The Relationship between Self-efficacy and Learning Environment with Students' Self-directed Learning. *Jurnal Aplikasi IPTEK Indonesia*, 4(1), 37–42. <https://doi.org/10.24036/4.14343>
- Moore, H. D. M. (1981). An assessment of the Fertilizing Ability of Spermatozoa in the Epididymis of the Marmoset Monkey (*Callithrix jacchus*). *International Journal of Andrology*, 4(1–6). <https://doi.org/10.1111/j.1365-2605.1981.tb00716.x>
- Mosley, J. (2014). Circle Time for Young Children. *Circle Time for Young Children*.

- <https://doi.org/10.4324/9781315758572>
- Peek, H. S. (2018). Distorted reality: Reality television and the effects on female body image. In *Child and Adolescent Psychiatry and the Media*. Elsevier Inc. <https://doi.org/10.1016/B978-0-323-54854-0.00002-3>
- Pramling, N., Wallerstedt, C., Lagerlöf, P., Björklund, C., Kultti, A., Palmér, H., Magnusson, M., Thulin, S., Jonsson, A., & Pramling Samuelsson, I. (2019). A Play-responsive Early Childhood Education didaktik. *International Perspectives on Early Childhood Education and Development*, 26(May), 167–183. https://doi.org/10.1007/978-3-030-15958-0_12
- Puello, F. G., Beltrán, Y. H., Guette, L. S., Villa, E. J. B., Rodríguez, A. D. C. C., Rueda, E. A. C., Fontalvo, A. E. V., & Ruíz, C. M. R. (2020). Autoeficacia hacia la actividad física en escolares colombianos. *Retos: Nuevas Tendencias En Educación Física, Deporte y Recreación*, 38, 390–395.
- Reyhing, Y., & Perren, S. (2021). Self-Efficacy in Early Childhood Education and Care: What Predicts Patterns of Stability and Change in Educator Self-Efficacy? *Frontiers in Education*, 6(April), 1–10. <https://doi.org/10.3389/educ.2021.634275>
- Rocha, C. L., de Campos, L. F. C. C., Campos, K. C., Segura, K. A., Henriquez, M., Ramírez, Y. V. P., ... & Duarte, E. (2022). Rendimiento físico de atletas varones de élite de baloncesto en silla de ruedas de la región del Biobío-Chile en inicio del período preparatorio: estudio transversal. *Retos: nuevas tendencias en educación física, deporte y recreación*, (44), 1027-1036.
- Schunk, D., & Mullen, C. A. (2012). Self-efficacy as an Engaged Learner. In *Handbook of research on student engagement*. Springer Science.
- Setiawati, S., & Handrianto, C. (2023). Role of parents on children's prosocial behavior at the public playground. *International Journal of Instruction*, 16(3), 421-440.
- Sezer, H. N., & Kaya, N. (2019). The examination of the postgrade theses on harmonization programs in preschool period: Analysis of problems and solution suggestions. 11(2), 100–129.
- Sheridan, M., Howard, J., & Alderson, D. (2010). Play in Early Childhood: From Birth to Six Years.
- Smaldino, S. E., Lowther, Clif Mims, D. L., & D., J. (2008). Deskripsi Singkat Revisi Taksonomi Bloom. *Majalah Ilmiah Pembelajaran*, 4(2).
- Smaldino, Sharon, Russel, D. J., Heinich, R., & Molenda, M. (2012). *Instructional Technology and Media for Learning*. Pearson Merrill Prentice Hall, Upper Saddle river, New Jersey colomcus.
- Suryadi, D., Nasrulloh, A., Yanti, N., Fauzan, L. A., Kushartanti, B. W., Suhartini, B., ... & bin Abdullah, N. M. (2024). Stimulation of motor skills through game models in early childhood and elementary school students: systematic review in Indonesia. *Retos: nuevas tendencias en educación física, deporte y recreación*, 51, 1255-1261.
- Van, J. J., & Bijl. (2001). Article Self-efficacy Theory and Measurement. In *Scholarly Inquiry for Nursing Practice* (Vol. 15, Issue 13, pp. 189–207).
- Vega, H. B., Contreras, M. O., García, P. J. J., Blanco, J. R., Vásquez, S. I. A., Contreras, R. G. O., Lira, C. J., & Neyra, N. N. (2022). La autoeficacia y el cuidado de la salud física en los adolescentes mexicanos. *Retos: Nuevas Tendencias En Educación Física, Deporte y Recreación*, 45, 154–162.
- Vostal, B. R., Lee, D. L., & Miller, F. (n.d.). Effects of Environmental Stimulation on Students Demonstrating Behaviors Related to Attention Deficit/Hyperactivity Disorder: A Review of the Literature. *International Journal of Special Education*, 28(3), 32-43.
- Waty, E. R. K., Nengsih, Y. K., Handrianto, C., Nurrizalia, M., & Shomedran, S. (2023). Examining the psychological factors impacting teachers' constraints in creating and administering final examinations. *Journal for ReAttach Therapy and Developmental Diversities*, 6(7s), 530–540. Retrieved from <https://www.jrtdd.com/index.php/journal/article/view/829>
- Wijaya, R. G., Darizal, D., Sabillah, M. I., Annasai, F., & Fitri, E. S. M. (2024). The effect of playing playdough and collage on improving fine motor skills in early childhood in terms of independence. *Retos: nuevas tendencias en educación física, deporte y recreación*, (51), 1146-1152.

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