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Buddhist fundraising (congdanbud) and gamification approach in improving students' cognitive skills

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Abstract: Cognitive skills are a crucial aspect of education because they directly relate to students' abilities to think critically, analyse information, understand concepts, and solve problems. These skills are the primary foundation for creating an effective, meaningful, and sustainable learning process. Improving cognitive skills not only impacts students' academic outcomes but also contributes to improving the overall quality of human resources. This is crucial in developing a generation capable of adapting and contributing to the nation's future progress. This study aims to determine the effect of the traditional Buddhist congklak game and a gamification approach on the cognitive skills of students at the Sakyamuni Buddhist Sunday School (BSS). The method used was a quantitative survey. The research instrument was a Likert-scale questionnaire distributed to the entire population of 32 students, who also served as the sample. Data analysis employed multiple linear regression using SPSS version 27. The study results indicate a positive and significant influence between the Buddhist congklak game and the gamification approach on improving students' cognitive skills, with a contribution of 83.8%. Meanwhile, the remaining 16.2% is influenced by other factors not examined in this study. These findings indicate that the application of Buddhist-based learning methods combined with a fun approach such as gamification is very effective in improving students' cognitive abilities in religious educational environments. Therefore, this approach deserves further development at various levels of education, both formal and non-formal, to create a fun, relevant, and transformative learning process to produce a superior generation with character according to Buddhist moral values in a holistic and sustainable manner today.

Keywords: Fundraising Buddhist Congklak, Gamification Approach, Cognitive Skills

1. Introduction

Cognitive skills are one of the fundamental aspects of education that determine the quality of the learning process and the learning outcomes of students. These skills include critical thinking, problem solving, decision making, and the ability to analyse and evaluate information effectively [1]. Optimal cognitive development contributes to improving the quality of human resources, which ultimately plays a role in the progress of a nation [2]. However, the development of students' cognitive skills in schools still faces various challenges, especially in terms of the learning approach used. One of the main obstacles in school learning is the dominance of teaching methods that are oriented towards memorisation and one-way transfer of knowledge from teachers to students [3]. This approach limits students' scope for exploration to develop higher-order thinking

skills. The lack of variety in learning media and low integration of technology are also factors that weaken student engagement and motivation to learn [4]. On the other hand, the lack of teacher training in designing innovative learning methods is another obstacle to realising an effective and meaningful learning process [5].

A number of previous studies have shown that interactive and technology-based learning media have a significant impact on improving students' cognitive skills. Video-based media [6], Augmented Reality [7], and other interactive media [8] have been proven to substantially improve students' thinking abilities. Based on this, the development of innovative and contextual learning media is very important to implement. One innovation in the development of learning media is Congklak Dana Buddhis (Congdanbud)**,** a traditional congklak game that has been modified by adding educational elements and Buddhist values. This media is designed not only to hone playing strategies, but also to increase students' understanding of Buddhist teachings in a fun way. In practice, Congdanbud integrates the philosophy of Patticcasamuppāda (the chain of cause and effect) and the concept of Ṣaḍ Pāramitā (six noble deeds) into the structure of the game. Gamification elements such as points, challenges, and a level system are also applied to increase student motivation and participation in the learning process.

Apart from being an educational medium, Congdanbud has the potential to strengthen cognitive skills through learning by doing activities. This is in line with the principles of Buddhist education that have been applied since the time of the Buddha, where direct experience is considered one of the most effective ways to achieve deep understanding. Thus, the integration of traditional game media and the gamification approach is a potential strategy for improving the quality of learning, especially in the context of Buddhist education. This research was conducted at the Sakyamuni Buddhist Sunday School (SMB), which still faces challenges in developing students' cognitive skills due to limitations in learning media and methods used. Therefore, efforts are needed to evaluate the effectiveness of Congdanbud media and the gamification approach in improving students' cognitive skills.

2. Method

As the population in this study was less than 100 people, all members of the population were used as research samples [9]. The sampling technique used was saturated sampling, which is a sampling technique in which all members of the population are used as samples. This approach was chosen so that the study could produce representative data and avoid generalisation errors, especially given the size of the population. This study used a quantitative approach with a survey method [10]. The quantitative approach was chosen because this study aims to measure the extent to which two independent variables, namely Congklak Dana Buddhis (Congdanbud) and the gamification approach, influence one dependent variable, namely students' cognitive skills. The survey method was carried out by distributing questionnaires as the main instrument for collecting data from predetermined respondents. The questionnaire was compiled based on indicators corresponding to each variable and was used to obtain data in a systematic and measurable manner. The answers in the questionnaire were presented in a closed-ended format, so

that respondents only needed to choose the answer that best suited their conditions or perceptions. The population in this study was all students of the Sakyamuni Buddhist Sunday School (SMB) who had participated in learning using Congdanbud media. According to Sugiyono [11], the population is a generalisation area consisting of subjects with certain characteristics determined by the researcher to be studied and concluded. Because it is relatively small.

Data collection was conducted using questionnaires as the primary tool. The questionnaires used were closed-ended, meaning that each statement item was accompanied by answer options that respondents could select directly [12]. These questionnaires were designed based on indicators from each variable, namely the Congdanbud variable, the gamification approach, and cognitive skills. Each item in the questionnaire used a five-point Likert scale, namely: strongly disagree, disagree, neutral, agree, and strongly agree. The instrument development process began with the creation of a grid based on theory, followed by the formulation of statement items, and then a trial test was conducted on a group of respondents to test the validity and reliability of the instrument. After the instrument was declared valid and reliable, the questionnaire was distributed to the entire sample. The data obtained from the questionnaire was analysed using statistical analysis techniques. The analyses used included descriptive statistical analysis to determine the respondents' answer trends and inferential statistical analysis to test the research hypothesis. To test the validity and reliability of the instrument, the item-total correlation test and Cronbach's Alpha formula were used. Meanwhile, to test the effect of the independent variable ( ) on the dependent variable, multiple linear regression analysis was used. The t-test was used to determine the partial effect of each independent variable on cognitive skills, while the F-test was used to see the simultaneous effect of both independent variables. In addition, the coefficient of determination (R^2) was also calculated to determine the extent of the contribution of the Congdanbud and gamification variables to students' cognitive skills. The entire data analysis process was carried out using SPSS for Windows version 27 statistical software.

3. Results

The instrument test was conducted at the Poncokresno Buddhist Sunday School with 30 student respondents and 90 statement items consisting of 30 items for the Congklak dana Buddhis variable, 25 items for the gamification approach variable, and 35 items for the cognitive skills variable. The results for the Congklak dana Buddhis variable showed that 26 items were valid and 4 items were invalid. The invalid items were number 4 with a calculated r value of 0.176, number 7 with a calculated r value of 0.168, number 11 with a calculated r value of 0.155, and number 16 with a calculated r value of 0.325. In the gamification approach variable, there were 22 valid items and 3 invalid items. The invalid items are item number 31 with a calculated r value of 0.270, item number 50 with a calculated r value of 0.156, and item number 54 with a calculated r value of -0.241. In the cognitive skills variable, there are 32 valid items and 3 invalid items. The invalid items are item number 61 with a calculated r value of 0.199, item number 69 with a calculated r value of 0.253, and item number 71 with a calculated r value of 0.321. Several items

were declared invalid by comparing the r table of 30 respondents with a significance level of 0.05, which is 0.361. If rhitung ≤ rtabel, the item is declared invalid. The researcher removed the invalid items because other items could represent each statement indicator, so that out of 90 statement items, 80 statement items were still used in the study. The reliability test on the variable (X_1) Congklak Dana Buddhis obtained a reliability coefficient on 26 valid items, as shown in the following table.

Table 1. Reliability of Variable X^1

Reliability Statistics	
Cronbach's Alpha	Number of Items
.747	26

Source: 2025 data processing results using SPSS 27.0

Reliability Statistics Results For variable X_2 gamification approach, a reliability coefficient was obtained for 26 valid items. The reliability results using SPSS 27 produced a Cronbach's alpha value of 0.747. Since the significance value is > 0.05, the measuring instrument is considered reliable. It can be concluded that the research instrument used in this study has met the requirements for good reliability.

Table 2. Reliability of gamification

Reliability Statistics	
Cronbach's Alpha	Number of Items
.737	22

Source: results of data processing in 2025 using SPSS 27.0

Reliability Statistics Results For variable X_2 gamification approach, a reliability coefficient was obtained for 22 valid items. The reliability results using SPSS 27 produced a Cronbach's alpha value of 0.737. Since the significance value is > 0.05, the measuring instrument is considered reliable. It can be concluded that the research instrument used in this study has met the requirements for good reliability.

Table 2. Reliability of cognitive skills

Reliability Statistics	
Cronbach's Alpha	Number of Items
.743	32

Meanwhile, for variable Y cognitive skills, a reliability coefficient was obtained for 32 valid items. The reliability results using SPSS 27 produced a Cronbach's alpha value of 0.743. Because the significance value is > 0.05, the measuring instrument is considered reliable. It can be concluded that the research instruments used in this study have met the requirements for good reliability.

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Table 3. Normality Test

One-Sample Kolmogorov-Smirnov Test					
			Congklak and Buddhism	Gamification Approach	Cognitive Skills
N			32	32	32
Normal Parameters[a,b]	Mean		97.94	81.75	118.63
	Standard Deviation		12.964	11.427	15.665
Most Extreme Differences	Absolute		.092	.123	.097
	Positive		.092	.123	.096
	Negative		-.065	-.112	-.097
Test Statistic			.092	.123	.097
Asymp. Sig. (2-tailed)[c]			.200[d]	.200[d]	.200[d]
Monte Carlo Sig. (two-tailed)[e]	Sig.		.692	.233	.611
	99% Confidence Interval	Lower Bound	.680	.222	.599
		Upper Bound	.704	.244	.624

a. Test distribution is Normal.

Source: data analysis results for 2025 using SPSS 27.0

The results of the normality test using the non-parametric One Sample Kolmogorov Smirnov test of three variables for 32 respondents had a mean of 97.94 (X1), 81.75 (X2), 118.63 (Y), absolute values of 0.92 (X1), 0.123 (X2), and 0.97 (Y). This test statistic value gives an Asymp. Sig. value of 0.200, which is well above the value of a = 0.05. This proves that the data on the three variables obtained from the distribution instrument (questionnaire) has a normal distribution, or H_0 is accepted. This indicates that the assumption of normality in regression analysis has been met.

Table 4. Homogeneity Test

Tests of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Congklak and Buddhism	Based on Mean	1.255	6	25	.313
	Based on Median	1,020	6	25	.435
	Based on Median and with adjusted df	1.020	6	18.694	.442
	Based on trimmed mean	1,222	6	25	.328
Gamification approach	Based on Mean	1,956	6	25	.111
	Based on Median	1,549	6	25	.204
	Based on Median and with adjusted df	1,549	6	21.976	.209
	Based on trimmed mean	1,933	6	25	.115

Cognitive Skills	Based on Mean	1,288	6	25	.299
	Based on Median	1,121	6	25	.378
	Based on Median and with adjusted df	1.121	6	14.771	.397
	Based on trimmed mean	1,253	6	25	.314

Source: 2025 data processed using SPSS 27.0

The homogeneity test is a method to determine whether several population variances are the same or not. The homogeneity test is conducted as a requirement in independent sample test analysis using the Compare Means One Way Anova method. The assumption underlying the analysis (anova) is that the variances of the populations are the same. The test criterion is that if the value is greater than 0.05 or 5%, then it can be said that the variances of the two data groups are the same. The results of the homogeneity test are seen from the homogeneity test output of the significant variance values of Congklak and Buddhism at 0.313, the Gamification Approach at 0.111, and Cognitive Skills at 0.299. Because the significant value is > 0.05, it can be said that the three data sets are normally homogeneous.

Table 5. Linearity Test

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Cognitive Skills * Congklak and Buddhism	Between Groups	(Combined)	7286.583	22	331,208	9,289	.001
		Linearity	5,168.707	1	5,168.707	144,955	.000
		Deviation from Linearity	2,117.877	21	100,851	2,828	.055
	Within Groups		320,917	9	35,657		
	Total		7,607,500	31			

Source: SPSS 27 data analysis results

Based on Table 4.12, which displays the results of the ANOVA table, the regression model is said to be linear because the calculation results of the professionalism variable on cognitive skills obtained a sig. value of 0.00 at Deviation from Linearity > 0.05. It can be concluded that there is no deviation from linearity. This means that the relationship between the variables of Congklak Dana Buddhis, the gamification approach, and cognitive skills is linear, indicating that $H_{(0)}$is rejected or it can be concluded that the regression model used is linear.

Based on the ANOVA table above, a significance value of 0.559 was obtained for deviation from linearity. Because this significance value is greater than 0.05 (0.559 > 0.05), it can be concluded that there is no deviation from linearity. This means that the relationship between the variables of Congklak Dana Buddhis, the gamification approach, and cognitive skills is linear, indicating that H_0 is rejected or that the regression model used is linear.

Table 6. Multicollinearity Test

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Buddhist fund pooling	.915	1.093
	Gamification approach	.915	1,093

a. Dependent Variable: Cognitive Skills

Source: SPSS 27 data processing results

The tolerance values of both independent variables are greater than 0.10, and the VIF values of both variables are less than 10. Thus, it can be concluded that there is no multicollinearity among the independent variables in the regression model.

Table 7. Heteroscedasticity Test

Coefficients[a]						
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.258	5.660		2,342	.026
	Buddhist Fund	.099	.171	.301	.576	.569
	Gamification approach	-.224	.194	-.604	-1.155	.257

a. Dependent Variable: Cognitive Skills

Source: SPSS 27 data processing results

In the heteroscedasticity test, it was found that the significance value for the Buddhist Fund Congklak variable was 0.569 > 0.05, which means that there was no heteroscedasticity in this variable. Meanwhile, the Gamification Approach variable also has a significance value of 0.257 > 0.05, indicating that there is no heteroscedasticity in this variable. Thus, it can be concluded that the two independent variables in this regression model do not contain heteroscedasticity, so that the classical assumptions of regression are fulfilled, particularly the assumption of homoscedasticity (constant residual variance).

Table 8. Hypothesis Testing

Coefficients[a]						
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	115.202	2.892		39,837	.000
	Buddhist Fund Collection	.051	.019	.321	2,716	.011
	Gamification Approach	.152	.028	.649	5,497	.000

a. Dependent Variable: Cognitive Skills

Source: 2025 data analysis using SPSS 27.0

Based on the results of the multiple linear regression analysis, the t-value for the Congklak Dana Buddhis variable was 2.716 with a significance value (Sig.) of 0.011. The t-table value at df = 29 and a significance level of 0.05 is 2.045. Because t-count > t-table (2.716 > 2.045) and Sig. < 0.05, it can be concluded that Buddhist fund collection has a positive and significant effect on the cognitive skills of SMB Sakyamuni students.

Table 9. Hypothesis Test

Coefficients[a]

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	115.202	2.892		39,837	.000
	Buddhist Fund Collection	.051	.019	.321	2,716	.011
	Gamification Approach	.152	.028	.649	5,497	.000

a. Dependent Variable: Cognitive Skills

Source: 2025 data analysis using SPSS 27.0

Based on the results of the multiple linear regression analysis, the t-value for the Gamification Approach variable was 5.497, with a significance value of 0.000. The t-table value at a degree of freedom (df) = 29 and a significance level of 0.05 (two-tailed) was 2.045. Because tcount > ttable (5.497 > 2.045) and the significance value is less than 0.05, it can be concluded that the Gamification Approach has a positive and significant effect on the Cognitive Skills of SMB Sakyamuni students.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.212	2	35,106	23,250	.000[b]
	Residual	43,788	29	1,510		
	Total	114,000	31			

a. Dependent Variable: Cognitive Skills

b. Predictors: (Constant), Gamification Approach, Buddhist Congklak Funds

Source: data processed in 2025 using SPSS 27.0

Based on the results of the data processing above, the Fcount value obtained is 23.250 with a significance value of 0.000. Meanwhile, the Ftable value at a significance level of 0.05 with the numerator degrees of freedom (df1) = 2 and denominator degrees of freedom (df2) = 29 is 3.33 (based on the F distribution table). Because Fcount > Ftable (23.250 > 3.33) and the significance value < 0.05, H_0 is rejected and H_1 is accepted. Thus,

it can be concluded that the Buddhist fund and gamification approach simultaneously have a positive and significant effect on the cognitive skills of SMB Sakyamuni students.

Table 10. Determination Coefficient Test

Model Summary[b]				
Model	R	R Square	Adjusted R-Square	Standard Error of the Estimate
1	.916[a]	.838	.827	6.510

a. Predictors: (Constant), Gamification approach, Congklak and Buddhist funds

b. Dependent Variable: Cognitive Skills

Source: 2025 data analysis using SPSS 27.0

Based on the table above, the R^2 (R Square) value is 0.838 or 83.8%. In other words, the cognitive skills variable can be explained or influenced by the Buddhist Congklak Fund and gamification approach variables by 83.8%, while the remaining 16.2% is explained or influenced by other variables not studied.

4. Discussion

The results of the study indicate a positive relationship between the traditional game of congklak dana Buddhis and the improvement of students' cognitive skills. This means that students who are more often involved in congklak games with a Buddhist values approach, such as patience, concentration, and mindfulness, demonstrate better logical thinking, working memory, and problem-solving skills. Congklak requires strategy, planning, and the ability to calculate and estimate moves, all of which are important aspects of cognitive development. When this game is framed within Buddhist values such as paticcasamuppada, sad paramitha, and self-control, students not only learn cognitively and understand Buddhist values but also form a focused and directed mindset. In line with Nataliya [13] in her research, congklak is a traditional game that emphasises counting skills. Therefore, the application of this game will be more interesting when used as a learning tool. The strength of the relationship between Congklak Dana Buddhis and cognitive skills can be seen from the correlation test results, which show a coefficient of determination of 0.679. This indicates that 67.9% of the variation in cognitive skills can be explained by Congklak Dana Buddhis, while the remaining 20.1% is influenced by other factors outside of this variable. Thus, it can be concluded that Buddhist congklak contributes significantly to improving students' cognitive skills. The more students engage in Buddhist congklak activities, the higher their cognitive skills will be.

The remaining 20.1% is explained by factors other than Buddhist almsgiving. This means that there are additional factors besides Buddhist almsgiving that also influence students' cognitive skills. These factors may include the learning environment, the teaching methods used by teachers, individual levels of learning motivation, and access to adequate learning facilities and resources. A lack of attention to these factors can be an obstacle to optimising the overall development of students' cognitive skills. Therefore, although Buddhist fund collection has a significant contribution, it is also important to

consider and manage other factors in order to maximise learning outcomes. Based on the results of this study, students who consistently engage in Buddhist congklak practices, which include awareness of the physical body, feelings, thoughts, and objects of thought, tend to have better cognitive skills in relation to their current experiences, thereby helping them to focus better, reduce impulsive reactions, and improve their logical, analytical, and reflective thinking abilities. Thus, Buddhist congklak not only shapes spiritual character, but also contributes positively to the development of students' cognitive functions in the learning process.

With the development of congklak into Buddhist Congklak, Buddha explained in the Bhaddekaratta Sutta that: Understanding the dhamma in phenomena at the time it occurs, let him see every situation that arises in the present with wisdom. Let him know and believe it. Unconquerable, unshakeable. Today, the effort must be made; tomorrow, death may come, who knows? There is no bargaining with death, which can make death and its army go away, but someone who remains steadfast, without ceasing, all day, all night. He is the one who is said to be a saint full of peace. A person who has a beneficial attachment [14]. From the description of the Sutta that has been presented, it can be concluded that awareness of the current condition allows a person to accept and respond to the situation, so that they can avoid suffering or difficulties that may arise. Another study reinforces the relationship between the Buddhist game of congklak and students' cognitive skills. This study found that the game of congklak can improve children's cognitive abilities, particularly in counting objects and recognising numerical concepts [15]. In addition, the results of another study conducted by Nurhasanah and Sesrita [16] show that through playing congklak, children can more easily recognise numbers, count objects, and understand number sequences in a fun and contextual way. This game also helps develop cognitive aspects, particularly in number recognition and basic arithmetic skills.

Furthermore, the Buddhist congklak game also plays a role in helping students remember and understand the basics of Buddhist teachings. This is due to the integration of Buddhist values into the mechanics of the game. By linking play activities with the principles of Buddhist teachings, students are not only cognitively involved in game strategies, but also affectively involved in the process of internalising the values that form the basis of Buddhist religious learning. This integration allows for more meaningful and contextual learning, making it easier for SMB Sakyamuni students to remember and apply Buddhist teachings in their daily lives.

The principles of Buddhist teachings explain the importance of having right view (sammā-diṭṭhi) regarding the law of karma, cause and effect, and moral responsibility for every action. This is emphasised in the Sammaditthi Sutta (Majjhima Nikāya 9), in which Sariputta explains that a correct understanding of the causes and effects of actions is the basis for wisdom and wise behaviour. In the context of congklak, each move taken has certain consequences, and students are indirectly trained to think logically, consider the results of their actions, and develop ethical responsibility. This activity encourages students to anticipate the consequences of their choices, a process that reflects the higher-order thinking skills emphasised in the development of right view according to Buddhist teachings [17]. Therefore, it can be concluded that the game of congklak makes a real

contribution to the development of students' cognitive skills, particularly in terms of recognising numbers, counting, understanding sequences and numerical logic, and understanding the basics of Buddhist teachings.

Students who have confidence in participating in gamification-based learning activities tend to be better at problem solving, critical thinking, and effective decision making. Gamification encourages students' confidence through structured challenges and positive feedback, so that they feel more prepared to face cognitive tasks. This confidence plays an important role in improving students' ability to manage their thinking processes independently and purposefully. According to Ariani [18], the main objective of implementing gamification is to make learning more interesting and encourage active participation of students in the learning process. The implementation of gamification has been proven to increase 1) interest in learning, 2) motivation, and 3) enthusiasm of students. The strength of the relationship between the gamification approach and cognitive skills can be seen from the correlation test results with a determination test value of 0.828. This shows that the variations that occur in cognitive skills are closely related to the application of gamification. Thus, it can be concluded that the gamification approach contributes 82.8% to the improvement of cognitive skills, while the remaining 17.2% is influenced by factors other than the gamification approach. This determination test shows that a value of 0.828 or 82.8% of the variation in cognitive skills can be explained by the gamification approach. This means that gamification contributes significantly to the improvement of students' cognitive skills. From these results, it can be concluded that the gamification approach plays a major role (82.8%) in helping students develop their cognitive abilities. The more effective the application of gamification elements in the learning process, the higher the cognitive skills possessed by students.

The remaining 17.2% of the variation in gamification approaches is explained by factors other than gamification approaches. This means that there are additional factors besides the gamification approach that influence the development of cognitive skills. These factors may include individual learning styles, students' intrinsic motivation, the learning environment, the quality of interaction with teachers, support from parents, and the use of other learning methods that support critical thinking and problem-solving processes. Gamification contributes significantly to the development of students' cognitive abilities through a systematic, structured, and goal-oriented learning approach. In this context, students are presented with various challenges designed in game elements, encouraging them to develop critical thinking skills, problem-solving abilities, and strategic decision-making. Through this process, students not only experience improvement in cognitive aspects, but also feel greater emotional and intellectual engagement with the learning material, which ultimately strengthens their motivation to learn and their focus during the learning process. This is in line with the Kalama Sutta (Aṅguttara Nikāya 3.65), which discusses the importance of critical learning and direct experience:

“Mā anussavena, mā paramparāya, mā itikirāya, mā piṭakasampadānena, mā takkahetu, mā nayahetu, mā ākāraparivitakkena, mā diṭṭhinijjhānakkhantiyā, mā

bhabbarūpatāya, mā samaṇo no garūti. When you, Kālāmā, should know for yourselves: 'These are unwholesome things, these are blameworthy things, these are things to be abandoned, these things lead to suffering and misery' then, Kālāmā, you should abandon them." [19] Meaning, "Do not believe merely because you have heard it from tradition, but when you yourself know: 'These things are unwholesome; these things are blameworthy; these things are criticised by the wise; these things, if undertaken and practised, lead to loss and suffering,' then abandon them." This quote emphasises the importance of personal evaluation and direct experience in accepting a teaching, which is in line with the gamification approach in education.

In gamification, students are encouraged to actively experience, evaluate, and understand the value of their actions, rather than simply receiving information passively. This creates an interactive and reflective learning environment, allowing students to develop critical thinking skills and make decisions based on their own understanding.

Azizah and Nawir [20] show that gamification-based learning media with Genially can significantly improve students' cognitive learning outcomes. The average student score increased from 42.86 before treatment to 80.00 after treatment. Statistical tests showed a significance value of 0.000, which means there was a significant difference between learning outcomes before and after the use of gamification. Another study conducted by [21] systematically described the effect of gamification in mathematical logic games on students' cognitive abilities. The results showed that the gamification approach could improve students' logical thinking and problem-solving abilities. Therefore, this approach is highly relevant to be applied as an innovative strategy in learning that requires students to think actively and reflectively. The gamification approach not only increases student motivation and engagement but also plays an important role in developing critical thinking, problem-solving, and working memory skills, all of which are key indicators of cognitive skills.

With gamification, students can be actively involved in learning. In addition, gamification also helps improve memory and understanding of the material because students are directly involved in the learning process through challenging and interesting activities. The indicators of the gamification approach are 1) engagement and 2) learning outcomes [22].

According to Piaget [23], cognitive development involves the interaction between individual maturity and environmental influences. Humans are actively involved in relationships with their environment, adjusting to the objects around them as part of the interaction process to develop their cognitive aspects. Therefore, it is necessary to develop interactions related to the learning methods and media needed, such as Buddhist Dana congklak in learning applications. The strength of the relationship between Buddhist Dana congklak and the gamification approach to cognitive skills can be seen from the correlation test results with a determination test value of 0.838. The diversity that exists in cognitive skills is also closely related to the application of Buddhist Dana congklak and the gamification approach. Thus, it can be concluded that Buddhist Dana congklak and the gamification approach contribute 83.8% to the improvement of cognitive skills, while 16.2% is influenced by other factors outside these two variables.

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This determination test shows that a value of 0.838 or 83.8% of the variation in cognitive skills can be explained by the application of the Buddhist Dana congklak and the gamification approach. This means that these two factors contribute significantly to students' cognitive skills. From these results, it can be concluded that Buddhist fund congklak and the gamification approach together play a major role (83.8%) in helping students improve their cognitive skills. The more effective the application of Buddhist fund congklak and the gamification approach in the learning process, the better their cognitive skills. The remaining 16.2% of the variation in cognitive skills is explained by factors other than the Buddhist fund and gamification approach. Nafiati [24] argues that cognitive skills are an individual's ability to process information, think critically, and solve problems based on their knowledge. These skills play an important role in the learning process because they enable students to understand the material, develop logical thinking, and apply knowledge in various situations. In the context of learning, cognitive skills include several indicators, namely: 1) understanding concepts, 2) analysis, 3) synthesis of ideas or material, 4) evaluation of arguments/statements, 5) problem solving. Meanwhile, the gamification approach reinforces the learning process through game elements such as challenges, points, levels, and feedback that motivate students to actively engage. By facing various challenges in gamification, students learn to think critically, strategise, and develop a high level of determination in completing tasks. This not only improves memory and concentration but also strengthens a sense of achievement and focus on learning objectives.

When these two approaches are combined, namely Buddhist congklak, which is rich in contemplative values, and gamification, which emphasises motivation and learning structure, they create a synergistic effect on the development of students' cognitive skills. Students are not only intellectually engaged, but also emotionally and spiritually. They learn to regulate themselves, respond to challenges wisely, and develop discipline and responsibility towards their learning process.

In the long term, the integrated use of Buddhist congklak and gamification supports the formation of a structured, focused, and sustainable mindset. Students become better prepared to face academic and social demands and have a strong cognitive and character foundation to live a dynamic and meaningful learning life.

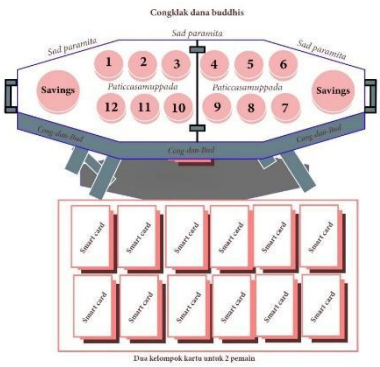

Figure 1: Buddhist Congklak [25]

This not only improves memory and concentration, but also strengthens a sense of achievement and focus on learning goals. When these two approaches are combined, namely Buddhist congklak, which is rich in contemplative values, and gamification, which emphasises motivation and learning structure, they create a synergistic effect on the development of students' cognitive skills. Students are not only intellectually engaged, but also emotionally and spiritually. They learn to manage themselves, respond to challenges wisely, and develop discipline and responsibility towards their learning process. In the long term, the integrated use of Buddhist congklak and gamification supports the formation of a structured, focused, and sustainable mindset. Students become better prepared to face academic and social demands and have a strong cognitive and character foundation to live a dynamic and meaningful learning life.

Based on the results of multiple linear regression analysis, a coefficient of determination (R^2) value of 0.838 or equivalent to 83.8% was obtained, indicating that the variables of Buddhist funds and the gamification approach together contributed 83.8% to the improvement of the cognitive skills of SMB Sakyamuni students. This means that the influence of these two independent variables on the dependent variable is very strong and significant. The remaining 16.2% is influenced by other factors outside this research model, such as the learning environment, student background, or other learning methods. These results indicate that the integration of traditional game-based learning media and the gamification approach is very effective in helping to significantly improve students' cognitive aspects. Supporting this, Buddhist congklak and the gamification approach have complementary and mutually reinforcing roles in creating a more effective and meaningful learning process. The Congklak dana Buddhis game, which integrates Buddhist values such as mindfulness (sati), patience, Sad Paramitha, and the law of cause and effect (paticcasamuppāda), helps students to be more aware of their actions and consequences. Through this game, students are trained to think strategically, anticipate moves, and make decisions considering long-term impacts, thereby significantly developing their cognitive skills such as logic, working memory, and problem-solving. Therefore, the use of Buddhist congklak and gamification can be used as an alternative innovative learning strategy that supports the improvement of cognitive skills as a whole. This approach is highly relevant to be applied as an innovative strategy in learning that requires students to think actively and reflectively. The gamification approach not only increases student motivation and engagement but also plays an important role in developing critical thinking, problem-solving, and working memory skills, all of which are key indicators of cognitive skills [26].

5. Conclusion

This study shows that the Buddhist Congklak game and the gamification approach, both individually and in combination, have a positive and significant effect on improving the cognitive skills of SMB Sakyamuni students. The use of this method has been proven to improve students' logical thinking, learning focus, and reflective understanding. The integration of Buddhist values and gamification elements creates a fun and meaningful learning atmosphere, as well as strengthening students' character and active participation

in learning. Further research is recommended to explore the effectiveness of this model at different levels of education or with other skill variables. Practically, schools and teachers can adopt this strategy as an innovative alternative in developing value- and culture-based learning media to improve the quality of holistic and comprehensive education.

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