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The Effectiveness of Market Game-Based Edupreneurship Learning Model in Instilling an Entrepreneurial Spirit in Early Childhood Education

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Abstract: This study aimed to develop and test a market game-based edupreneurship learning model to instill an entrepreneurial spirit in early childhood and to evaluate its effectiveness. The research utilized the Research and Development (R&D) method, following a ten-step process: data collection, planning, model draft development, initial field trials, revision of trial results, field trials, product improvement from field trials, field implementation trials, final product refinement, and dissemination and implementation. Data collection techniques included interviews, observations, and questionnaires, with both quantitative and qualitative analyses conducted. The study involved group B kindergarten teachers and students in the Raden Dewi Sartika PAUD cluster, Sedan District, Rembang Regency. Results indicated that the market game-based edupreneurship learning model is more effective in fostering an entrepreneurial spirit in early childhood compared to conventional learning methods.

Keywords: Edupreneurship, Market, Entrepreneurial Spirit

1. Introductions

Character development is crucial to instill in children from an early age. Schools, as educational institutions, should focus not only on intellectual development but also on character formation to align with national education goals (Nurhafizah, 2018; Malin et al., 2017). Education in schools aims to produce generations with strong character capable of competing in the era of globalization. An entrepreneurial spirit is considered a vital character trait that equips individuals to face global challenges (Suharyoto, 2017; Waluyo & Latiana, 2014).

Nurhafizah (2018) emphasizes the need for entrepreneurship education to develop, cultivate, and nurture entrepreneurial talents, ensuring they stay abreast of scientific developments and seize opportunities. This approach aligns with Law No. 20 of 2003 concerning the National Education System, which mandates national education to develop capabilities, form dignified national character and civilization and educate the nation. The goal is to develop students' potential to become individuals who believe in and fear God, possess noble character, health, knowledge, capability, creativity, independence, and be democratic and responsible citizens. Achieving this goal necessitates starting education at an early age (Maswah et al., 2022; Wartoyo, 2022).

From an early age, students should be taught creativity and independence by engaging in a variety of activities that allow them to express their imagination and manage themselves, ultimately fostering a sense of self-worth and contribution to others and their environment (Yates & Twigg, 2017). This effort aligns with building a generation with strong character. Von Graevenitz et al. (2010) states that one of the educational services to build character is entrepreneurship education.

Entrepreneurship education for young children should begin with introductory activities rather than active business roles. Pianta et al. (2016) argues that proper early education determines the formation of national character and the reliability of human resources. Entrepreneurship education aims to develop an entrepreneurial spirit characterized by independence, responsibility, and courage in decision-making. Early nurturing of these traits can enhance children's physical and mental well-being, leading to improved academic achievement, work ethic, productivity, and independence (Daelmans et al., 2021; Saugi et al., 2020; Britto et al., 2017).

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Entrepreneurship education instills an entrepreneurial mentality, focusing not just on business skills but also on building strong character. This strong character enables individuals to face challenges resiliently. Entrepreneurs with strong character qualities—such as hard work, perseverance, honesty, and creativity—are more likely to succeed. These traits are valuable across professions, contributing positively to society (Putri & Fajrie, 2023; Khuluqo, 2017; Yetti & Azizah, 2016). However, few schools currently emphasize instilling an entrepreneurial spirit in early childhood. Teachers and parents often believe that entrepreneurial knowledge is only necessary for adults.

Observations in the Raden Dewi Sartika PAUD cluster, Sedan District, Rembang Regency, from March 15-29, 2021, revealed a lack of dedicated programs to develop entrepreneurial spirit in kindergartens. Classroom learning processes are not integrated with entrepreneurship education, and although some teachers attempt to instill an entrepreneurial spirit, it is not well internalized in children. This results in children displaying attitudes such as irresponsibility, discouragement, and lack of confidence. For instance, when given new assignments, some children show a lack of responsibility, give up easily, and exhibit low confidence. This indicates a need to enhance children's soft skills to foster an entrepreneurial spirit.

Teachers face the challenge of creating engaging learning models that capture children's interest. For early childhood, learning should be conveyed through play, as this is their primary mode of learning. Teachers must design effective and creative games to engage children. Given the need to cultivate an entrepreneurial spirit in early childhood, teachers must develop learning models that attract children's interest in entrepreneurship. In response to these challenges, research aims to develop an edupreneurship learning model based on market games. This model is designed to instill an entrepreneurial spirit in early childhood by introducing new and engaging ways to learn. Considering the developmental characteristics of early childhood, this model aims to maintain children's interest through play-based learning.

2. Methods

This study employs a Research and Development (R&D) design using a mixed-method approach, integrating both qualitative and quantitative research methods to comprehensively address the research problem. The research follows the development procedure outlined by Borg and Gall (Gustiani, 2019). Primary data sources include educators, students, and parents associated with Raden Dewi Sartika early childhood education, while secondary data consists of existing documentation, such as report cards and child assessments.

Data collection techniques encompass interviews, observations, questionnaires, and documentation. Research instruments include structured guidelines for interviews, observations, and questionnaires, as well as documentation guidelines. To ensure data accuracy, validity and reliability tests are conducted. Data analysis involves prerequisite tests to verify the suitability of the data for further analysis and hypothesis testing to determine the significance of the findings. This approach aims to develop an effective edupreneurship learning model based on market games, enhancing the entrepreneurial spirit in early childhood.

3. Results

To determine the effectiveness of the market game-based edupreneurship learning model in instilling an entrepreneurial spirit in early childhood at Raden Dewi Sartika early childhood education, Sedan District, Rembang Regency, trials were conducted on both limited and large scales. These trials aimed to assess and validate the model's impact on fostering entrepreneurial traits among young children.

3.1 Limited Trial

After the product was created and passed the validation test, a limited trial was conducted to evaluate the effectiveness of the market game-based edupreneurship learning model in instilling an entrepreneurial spirit in early childhood. In this trial, the entrepreneurial spirit of the children was assessed both before and after using the edupreneurship learning model. The limited trial involved 5 children, and the collected data from these respondents shows in Table 1.

The data obtained from the pretest shows that the entrepreneurial spirit of children in the experimental class had an average score of 49.16, with the highest score being 58.3 and the lowest score being 41.7. The control class had an average score of 49.18, with the highest score being 54.2 and the lowest score being 41.7. Posttest results, following the implementation of the market game-based edupreneurship learning model in the experimental class, showed an average entrepreneurial spirit score of 87.3, with the highest score being 95.8 and the lowest score being 79.2. In contrast, the control class, which followed a conventional learning model, had an average entrepreneurial spirit score of 58.34, with the highest score being 66.7 and the lowest score being 50.0. These results indicate that the pretest entrepreneurial spirit scores in both the experimental and control classes were almost equal. However, the posttest scores revealed a significant difference: the experimental class, which used the market game-based edupreneurship learning model, achieved a much higher average score of 87.3 compared to the control class's average score of 58.34, demonstrating the effectiveness of the new learning model in enhancing the entrepreneurial spirit of children.

Table 1: Limited Experiment Data Description

		Pretest		Posttest	
		Eksperiment	Control	Eksperiment	Control
N	Valid	5	5	5	5
	Missing	0	0	0	0
Mean		49.160	49.180	87.500	58.340
Median		45.800	50,000	87.500	58.300
Std. Deviation		6.8405	5.4417	6.5776	6.5934
Variance		46.793	29.612	43.265	43.473
Range		16.6	12.5	16.6	16.7
Minimum		41.7	41.7	79.2	50.0
Maximum		58.3	54.2	95.8	66.7
Sum		245.8	245.9	437.5	291.7

3.2 Wide Field Trials

A limited trial was conducted to simulate and determine the effectiveness of the product before its broader application. This trial involved forming a control class and an experimental class. The experimental class, which was subjected to the market game-based edupreneurship learning model, consisted of 15 children from Group B of Kartini Kindergarten in Mojosari Village. The control class, which followed a conventional learning model, also consisted of 15 children from Group B of Harapan Bangsa Kindergarten in Sambiroto Village.

3.3 Data Description

The data description involves an analysis of observational data on the use of the market game-based edupreneurship learning model to instill an entrepreneurial spirit in children. This data was obtained from observations conducted before (pretest) and after (posttest) the implementation of the market game-based learning model. Both pretest and posttest values were collected from the control group and the experimental group. Table 2 show the data description wide field trial.

The pretest data shows that the entrepreneurial spirit of children in the experimental class had an average score of 48.33, with the highest score being 58.3 and the lowest score being 37.5. The control class had an average score of 48.06, with the highest score being 58.3 and the lowest score being 37.5. These results indicate that the pretest entrepreneurial spirit scores in both the experimental and control classes were almost identical, demonstrating balanced abilities.

Table 2: Test Data Description Wide Field Trial

Value		Pretest		Posstest	
		Eksperiment	Control	Eksperiment	Control
N	Valid	15	15	15	15
	Missing	0	0	0	0
Mean		48.333	48.060	85.280	58.327
Median		45.800	50.000	87.500	58.300
Std. Deviation		7.5120	5.8627	8.8897	8.6293
Variance		56.430	34.371	79.026	74.465
Range		20.8	20.8	29.1	29.2
Minimum		37.5	37.5	66.7	45.8
Maximum		58.3	58.3	95.8	75.0
Sum		725.0	720.9	1279.2	874.9

Based on the posttest results, the experimental class, which used the market game-based edupreneurship learning model, had an average entrepreneurial spirit score of 85.28, with the highest score being 95.8 and the lowest score being 66.7. The control class, which followed a conventional learning model, had an average entrepreneurial spirit score of 58.327, with the highest score being 75.0 and the lowest score being 45.8. These results indicate significant differences in posttest entrepreneurial spirit scores between the two learning models. The data from the limited trial is illustrated in Figure 1.

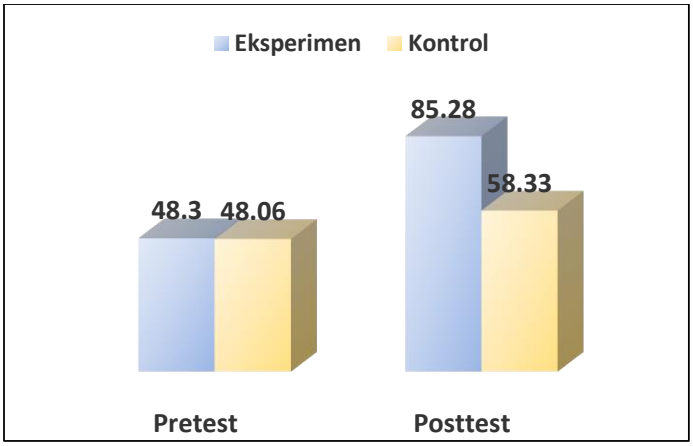

Fig 1: Histogram of Pretest and Posstest of Children's Entrepreneurial Spirit

3.4 Prerequisite Analysis Test

To further analyze and confirm the effectiveness of the edupreneurship learning model based on market games, it is necessary to conduct prerequisite tests, specifically the normality test and homogeneity test.

3.4.1 Normality Test

The normality test determines whether the data is normally distributed. Normally distributed data have an equal amount of data above and below the average, and a consistent standard deviation. In this study, the Shapiro-Wilk Test was used due to the sample size being less than 50. A significance value (sig) greater than 0.05 indicates normal distribution, while a value less than 0.05 indicates non-normal distribution.

Table 3: Normality Test

	Group	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Entrepreneurial Spirit of Children	Pretest Eksperiment	0.183	15	0.191	0.902	15	0.102
	Posttest Eksperiment	0.199	15	0.115	0.905	15	0.114
	Pretest Control	0.163	15	0.200	0.954	15	0.596
	Posttest Control	0.114	15	0.200	0.962	15	0.731

The results of the pretest and posttest normality tests for both the experimental and control classes showed that the significance values were greater than 0.05, indicating that the data in both classes were normally distributed.

Table 4: Pretest Homogeneity Test

		Levene Statistic	df1	df2	Sig.
Entrepreneurial Spirit of Children	Based on mean	2.223	1	28	0.147
	Based on median	1.213	1	28	0.280
	Based on median and with adjusted df	1.213	1	27.378	0.280
	Based on trimmed mean	2.238	1	28	0.146

Next, the homogeneity test determines whether the populations from which the samples are drawn have equal variances. The significance value (sig) for the homogeneity test based on the mean was 0.147 for the pretest and 0.812 for the posttest, both greater than 0.05. This indicates that the variances in both the experimental and control classes were the same, or homogeneous.

Table 5: Posttest Homogeneity Test

		Levene statistic	df1	df2	Sig.
Entrepreneurial Spirit of Children	Based on mean	0.058	1	28	0.812
	Based on median	0.000	1	28	0.997

	Based on median and with adjusted df	0.000	1	27.354	0.997
	Based on trimmed mean	0.029	1	28	0.865

3.4.2 Independent sampel t-test

An independent sample t-test was conducted to compare the effectiveness of the two learning models in enhancing the entrepreneurial spirit of early childhood students in Rembang Kindergarten. The t-test results showed a t-value of 8.426, which is greater than the t-critical value of 2.04841, indicating a significant difference between the entrepreneurial spirit of children in the experimental group and those in the control group. The results of the independent sample t test can be seen in Table 6.

Table 6: Independent Sample t Test Wide Field Tials

		Levene's test for equality of variances		**t-test for equality of means**		
		F	**Sig.**	**t**	**df**	**Sig. (2-tailed)**
Entrepreneurial Spirit of Children	Equal variances assumed	0.058	0.812	8.426	28	0.000
	Equal variances not assumed			8.426	27.975	0.000

The average posttest entrepreneurial spirit score for the experimental group was 85.28, compared to 58.327 for the control group as shows in Table 7. This significant difference indicates that the market game-based edupreneurship learning model is more effective in enhancing the entrepreneurial spirit in early childhood than conventional learning methods.

Table 7: Large Field Trial Statistics Group

	Group	N	Mean	Std. Deviation	Std. Error Mean
Entrepreneurial Spirit of Children	Eksperiment	15	85.280	8.8897	2.2953
	Control	15	58.327	8.6293	2.2281

3.4.3 Gain Index

Furthermore, the Gain Index calculation was performed to measure the increase in entrepreneurial spirit. The results in Table 8 showed that 73.3% of children in the experimental group experienced a high increase in entrepreneurial spirit, compared to 66.7% of children in the control group who experienced a low increase.

Table 8: Recapitulation of the Gain Index of the Entrepreneurial Spirit of Children

Criteria	**Experiment**	**Control**
High	73.3%	0%
Average	26.7%	33.3%
Low	0%	66.7%

Figure 2 ilustrated that in learning using the development of market game-based edupreneurship learning models in the experimental class the majority of children experienced a high increase in entrepreneurial spirit (73.3%) while in conventional learning in the control class the majority of students experienced a low increase in entrepreneurial spirit (66.7%). These results prove that learning using the development of edupreneurship learning models based on market games is more effective in increasing the entrepreneurial spirit of early childhood compared to conventional learning.

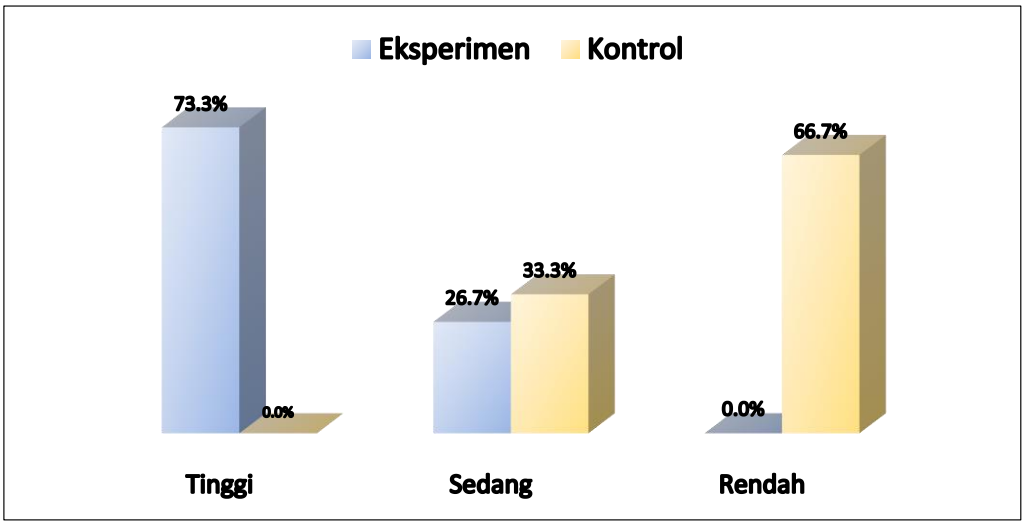

Fig 2: Histogram of Increasing Children's Entrepreneurial Spirit

4. Discussion

The results of the independent sample t-test, assuming equal variances, yielded a t-value of 8.426, which is greater than the critical t-value of 2.04841. This indicates a significant difference in the entrepreneurial spirit of early childhood students who were taught using the market game-based edupreneurship learning model (experimental group) compared to those who received conventional learning (control group) (Mangundjaya & Wicaksana, 2022).

The large field trial statistics revealed that the average entrepreneurial spirit score for children in the experimental group was 85.28, while the control group had an average score of 58.327. This substantial difference (85.28 > 58.327) suggests that the market game-based edupreneurship learning model is more effective in enhancing the entrepreneurial spirit in early childhood compared to conventional learning methods.

Further analysis using the Gain Index in the experimental class showed that 11 children (73.3%) experienced a high increase in entrepreneurial spirit, 4 children (26.7%) experienced a moderate increase, and no children (0%) experienced a low increase. In contrast, the control class revealed that no children (0%) experienced a high increase in entrepreneurial spirit, 5 children (33.3%) experienced a moderate increase, and 10 children (66.7%) experienced a low increase.

In summary, the majority of children in the experimental class, who were taught using the market game-based edupreneurship learning model, experienced a high increase in entrepreneurial spirit (73.3%). Conversely, the majority of children in the control class, who received conventional learning, experienced a low increase in entrepreneurial spirit (66.7%). These results clearly demonstrate that the market game-based edupreneurship learning model is significantly more effective in fostering the entrepreneurial spirit in early childhood compared to conventional learning methods.

5. Conclusion

Based on the research findings, it can be concluded that the market game-based edupreneurship learning model is effective in instilling an entrepreneurial spirit in early childhood within the PAUD Raden Dewi Sartika cluster, Sedan District, Rembang Regency. The model demonstrated a significant improvement in children's entrepreneurial spirit compared to conventional learning methods, as evidenced by the results of statistical tests. Therefore, the market game-based edupreneurship learning model is a more effective approach for fostering entrepreneurial skills in early childhood education.

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Conflict of Interest

The authors declare no conflicts of interest.

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