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The Effect of Pempek Palembang Culinary Lacing Card Activities on Fine Motor Skills of Children Aged 5-6 Years

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Abstract. This study aims to determine the effect of Palembang culinary pempek lacing card activities on the fine motor skills of children aged 5-6 years at the Ogan Ilir Pilot State Kindergarten. The research method used in this research is a quantitative experimental method with a one-shot case study design. The sampling technique used was saturated sampling. This research was conducted on children aged 5-6 years at the Ogan Ilir Pilot State Kindergarten with a sample size of 16 children. The results of data analysis showed that the t count value was (5.70) and the ttable result was (1.75). Thus, *t count* > *ttabel*, it can be concluded that *t*count > *t*table (5.70 > 1.75) so that *H*0 is rejected, *Ha* is accepted. Thus, it can be concluded that there is an influence of the Palembang culinary pempek lacing card activity on the fine motor skills of children aged 5-6 years at the Ogan Ilir Pilot State Kindergarten.

Keywords: *Lacing card activities, Fine motor skills, Children aged 5-6 years.*

Introduction

Education is an important basic need for every individual to develop optimally. Early Childhood Education (PAUD) aims to develop all aspects of children's personality as a whole (Harmi et al., 2022; Hasanah et al., 2022). PAUD is an endeavor to support children ages 0–6 through educational stimulation for future learning preparation, following Permendikbud No. 146 of 2014. Given how quickly children's brains grow, the early years are a golden era (Murtinisitinur et al., 2023).

One of the most important aspects of this period is the development of fine motor skills, or the ability to utilize the small muscles in the hands and fingers. Writing and sketching are two tasks that need these abilities (Agustina et al., 2022). According to Nurasyiah et al. (2023), children who possess fine motor skills are better able to control their movements, concentration, and coordination. Therefore, stimulating via educational activities is crucial. One of the effective stimulation media is lace cards, which are perforated cards used to sew strings, resembling the sewing process. This activity trains children's eye and hand coordination, accuracy, and patience (Faridah, L. et al., 2020; Christiana et al., 2022). In addition to being fun, this activity is also useful in supporting children's readiness to enter elementary school (Lestari, 2021).

The phenomenon of calistung (reading, writing, arithmetic) in early childhood is also closely related to fine motor skills. Children begin writing through drawing and doodling activities, which demand good fine motor coordination (Wulandary et al., 2024; Andika et al., 2022). At the age of 5–6 years, this ability develops rapidly, including in activities such as using stationery and making simple crafts (Anna et al., 2022). Observations at the Ogan Ilir Pilot State Kindergarten showed that out of 16 children aged 5–6 years, 6 children had not achieved optimal fine motor skills. They have difficulty using stationery and participating in activities such as mosaics. This indicates a lack of structured learning stimulation (Yusneli et al., 2022). In addition, teachers' strategies are not able to attract children's interest (Silmi Nurfadillah & Fathurahman, 2022).

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Ideally, the development of these skills is done through activities such as free drawing, playing with playdough, scissors, or marbles. This activity not only trains writing skills but also supports the social, cognitive, and emotional development of children (Bachtiar et al., 2024). Activities such as mosaics have also been shown to be effective in practicing eye and hand coordination (Carissa et al., 2024; Rambe et al., 2024). Numerous studies have also demonstrated the beneficial effects of handicraft activities on children's fine motor development, including tracing, smearing, and pasting (Isnaningsih et al., 2022; Saputri as al., 2024; Kholilah, 2023).

However, most existing studies focus only on conventional forms of fine motor stimulation and do not integrate local cultural elements that may enhance children's engagement. Moreover, limited research has been conducted on the direct application of thematic lace cards—especially with regional cultural contexts such as Palembang's traditional food (pempek)—to improve fine motor skills. This, the novelty of this study lies in the development and application of lace card activities with a Palembang pempek cuisine theme, which not only functions as a fine motor exercise but also introduces local cultural identity in a fun and meaningful way. This dual approach is expected to stimulate both motor and cultural cognitive development in early childhood, particularly among children aged 5–6 years at the Ogan Ilir Pilot State Kindergarten.

Materials and Methods

This research used a pre-experimental approach with a One-Shot Case Study design to determine the effect of Palembang pempek-themed lacing card activities on the fine motor skills of children aged 5–6 years at Ogan Ilir Pilot State Kindergarten. A sample of 16 children was selected using saturated sampling. The independent variable in this study was the lacing card activity, while the dependent variable was fine motor skills. The data collection instrument was an observation sheet in checklist form, based on indicators of early childhood fine motor development. The indicators included two main aspects: (1) eye-hand coordination, measured by the child's ability to insert the string into the holes and follow the pempek pattern, and (2) finger strength and flexibility, assessed through the child's ability to grasp, pull, and neatly arrange the string. Data were collected through direct observation and documentation over 16 sessions. Observation scores were converted into quantitative values and categorized according to the PAUD developmental scale: BB, MB, BSH, and BSB. Data analysis was carried out in several stages, including a validity test using Pearson Product Moment correlation, a reliability test using Cronbach's Alpha (result = 0.932), a normality test using the Chi-Square formula (X^2 = 6.69 < X^2 table = 24.99), and hypothesis testing using a one-sample t-test. The t-test result showed that the calculated t-value of 5.70 was greater than the table t-value of 1.75, indicating that Ha was accepted and H0 was rejected. Therefore, the lacing card activity had a significant effect on children's fine motor skills.

Results and Discussion

Results

Validity Test

Before being used to collect data, the research instrument is first tested for validity. The validity test is carried out to ensure that the measuring instrument used in the study is able to measure what should be measured. In this study, the researcher used a correlation formula, *the product-moment correlation* from Pearson. The validity calculation is carried out by comparing the calculated value for each indicator with the reference value.

Based on the table values obtained from the distribution r *product moment* with a significance level of 5% using the SPSS application version 27. The following is a table of SPPS test results comparison between r_{count} and r_{table}.

Table 1.
Instrument Validity Test Results

No Item	Calculated value	Table values	Serenity
Item 1	0,953	0,514	Valid
Item 2	0,853	0,514	Valid
Item 2	0,904	0,514	Valid
Item 3	0,888	0,514	Valid
Item 5	0,834	0,514	Valid

Based on the comparison between the calculated and Rtable values, it can be concluded that all indicators are declared valid because the R value count each indicator is greater than the value of R_{table} (0.514). Thus, the research instrument used is valid and can be used to collect data related to fine motor skills in early childhood.

Reliability Test

To ascertain the degree of consistency or dependability of the measurement tools utilized in this investigation, a reliability test was conducted. With a Cronbach's Alpha score of 0.932, the Cronbach's Alpha test—one of the reliabilities testing methods using SPSS version 27—was selected as the methodology.

Table 2.
Cronbach's Alpha SPPS Reliability Test

Reliability Statistics	
Cronbach's Alpha	N of Items
.932	5

It can be concluded that the value of *Cronbach's Alpha* above 0.6 is considered reliable. Therefore, the results of the reliability test obtained (0.932) indicate that the measuring instrument used in this study has good or consistent reliability. Value *Cronbach's Alpha.* The high (0.932) indicates that the items in the measuring instrument consistently measure the same construct. That is, respondents gave relatively the same answers for items that measured the same construct.

Normality Test

To make sure the data was distributed normally, the researcher performed a normality test prior to doing any analysis on the study data. The Chi Square formula is used to perform the normalcy test on a sample size (n) of sixteen children. If x2 counts ≤ x2table, then the data is normally distributed. If x2 counts ≥ x2table, then the data is abnormally distributed.

Table 3.
Calculation of fh Value

Interval	Class Z Limit Wide Area Nyata	Score	0 s/d Z	f_h Interval		
	100,5	1,29	40.15	36.56	5.85	
82-100						11
	81,5	-0,09	3,59	39,2	6,27	
63-81						3

	62,5	-1,46	42,79	6,98	1,12	
44-62						2
	43,3	-2,84	49,77			
25-43						0

According to the computation's findings, the x2 value came out to be 6.69. The X2 value is computed in comparison to the X2 value table to determine if the data is regularly distributed. 16-1 = 15 is the degree of freedom (DF) n-1 at the 5% significance level. The number x is 24.99 based on the distribution table x^2. It is possible to conclude that the data from this study is normally distributed because the value of x2 (6.69) < the value of x2table (24.99). The results of the normality test showing normal distribution of data are a prerequisite for further data analysis using parametric statistics. With the fulfillment of the assumption of normality, researchers can continue data processing and testing of research hypotheses with an adequate level of confidence.

Discussion

Lacing card exercises have been shown to improve the fine motor abilities of children aged 5 to 6 at the Ogan Ilir Pilot State Kindergarten, according to the findings of data analysis and hypothesis testing. This activity involves fine motor coordination through activities such as inserting, grasping, pulling, and arranging ropes in a specific pattern, which can help the development of small muscles in children's hands (Azizah et al., 2022; Rezieka et al., 2022). In the first indicator of sub-indicator one, namely the ability of children to insert the rope into the lacing card hole and pull it according to the pattern, 69% of children obtained a score in the Very Good Development (BSB) category. This shows that children can perform coordinated movements appropriately. Istiqamah et al. (2023) emphasized that sewing activities using lacing cards are effective for honing fine motor skills because they involve coordination between hands and eyes.

The second sub-indicator of the first indicator showed that 57% of children were able to follow the lacing card pattern according to the shape of Palembang pempek well (BSB score). Martinez et al. (2020) state that these activities can help children understand visual instruction and improve problem-solving skills. In the second indicator of sub-indicator one, namely the ability of children to grasp ropes to form patterns, 63% of children were in the BSB category. This proves that this activity supports the flexibility and strength of the finger muscles. Tarigan et al. (2024) also mentioned that lacing cards train the use of both hands, increase patience, and hone children's accuracy. The second sub-indicator of the second indicator assesses the ability to pull the rope to form a pattern. As a result, 50% of children obtained a score in the Develop as Expected (BSH) category, indicating progress in the ability to pull the rope in the right direction and force. Melinda et al. (2021) added that this activity also improves children's self-expression and understanding of shapes and colors.

The third sub-indicator assesses the child's ability to arrange ropes regularly. As many as 44% of children are in the BSB category, and another 44% are in BSH. This shows that most children can compose patterns neatly. Basri (2022) mentioned that this skill develops finger coordination and children's accuracy in producing works. The posttest instrument is prepared based on two indicators and five sub-indicators in the form of observation sheets. The results of the observations showed a significant increase in each indicator. The dominant posttest scores were in the BSB and BSH categories, indicating optimal achievement. Statistically, the tcal value of 5.70 is greater than the ttable 1.75, which means that the alternative hypothesis is accepted. Thus, it

can be concluded that lacing card activities significantly affect children's fine motor skills. This activity can be used as an effective learning method in supporting early childhood fine motor development.

Conclusion

This study used an experimental quantitative technique using a one-shot case study design. The saturated sampling strategy was used to determine the research sample. This study was conducted at the Ogan Ilir Pilot State Kindergarten for children aged 5-6 years, with a total of 16 participants. The study and analysis revealed that lacing card activities influenced the ability of children aged 5-6 years at the Ogan Ilir Pilot State Kindergarten, as well as their fine motor abilities in early infancy. This is explained by doing a hypothesis test using a t-test, which yielded a tcal value of (5.70) ≥ ttable (1.75). If the tcount exceeds ttable, then H0 is rejected and Ha is accepted. As a result, it is possible to infer that lacing card activities have an impact on the fine motor abilities of children aged 5-6 years at the Ogan Ilir Pilot State Kindergarten.

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