

Batik Skill, Indonesian Local Wisdom and Its Relation to Children Readiness in Writing

Correlational Study in Primary School, Jakarta

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Keywords: Batik Skills, Correlation, Writing Ability.

Abstract: This study aims to see the relationship between batik skills with the ability to write of children aged 6-8 years in Elementary School, West Jakarta, Indonesia. Correlation Technique Methodical was applicated in this survey. Population in this related research employed 160 students spread over at the 2nd. and 3rd. level of primary school grade. Research conducted through purposive random sampling for selected 30 students after completion of an explanation, clarification as well as special instruction to work out an essay finished art product. Series of tests as an instrument measured of complete data on batiking capability and writing skill capability. Correlation and Regression Statistics with significance of $\alpha = 0.05$. Applied as data analysis, which resulted Positive and Significant Correlation between Batiking Aptitude towards writing skill capability of 6 – 8 years old primary school students, showed by a $r_{y_1} = 0,740$ as correlation coefficient and $\hat{Y} = 31.69 + 0,60 X_1$ as similarly regression can be interpreted that batik skill effect on writing ability of children aged 6-8 years.

1 INTRODUCTION

Literacy and language development are key foundations of readiness, and research over the last three decades also suggests that handwriting is a key component of literacy in preschool and early childhood. Forming letters and words by hand is a complex skill: it requires a child to coordinate letter formation, letter knowledge, and fine motor skills. Research shows significant links between children's early attempts at writing and their developing knowledge about how books and printed materials work and how words on a page can create meaning (Zhang et al., 2015) that is, emerging reading skills. Learning to write letters and form words are powerful first steps toward academic success. One cornerstone of high quality preschool is a focus on literacy development, and a strong predictor of later reading skills is alphabet knowledge (Cameron et al., 2012).

Children entering the elementary school have a variety of experiences with writing exposures in general. Some six and eight-year olds arrive having more sophisticated letter formations and legible hand writing samples, while others struggle at even

attempting to write their first letters. Handwriting ability primarily involves the use of fine motor skills and a large majority of a student's day, up to 60%, is spent in writing tasks (McHale and Cermak, 1992). Therefore, it is no wonder that children who have underdeveloped or poor use of fine motor skills would struggle with their writing samples (Erhardt and Meade, 2005). In later years as a child matures some are diagnosed with having dysgraphia, which has been identified as a difficulty expressing one's opinions or thoughts on paper (Richards, 1999). Children with poor written forms may struggle with completing assignments and have a lower self-esteem due to their inability to express themselves (Crouch and Jakubecy, 2007). Teachers should be aware of how to identify and work with students who are just arriving to their classes in the very early elementary years who may have deficits in written communication.

Researchers suggest that for some children hand writing skills are not automatically obtained, but instead may need a more systematic approach to ascertain legible handwriting skills. Sensorimotor interventions have been identified popular technique to help individuals with poor handwriting skills

(Feder et al., 2000). Sensorimotor interventions may include various tasks that help improve a child's visual memory and their letter formation recall for writing assignments.

Skills batik making process repeatedly will be able to improve fine motor skills muscles of the arms and hands of children, train concentration, intelligence, patience and persistence in addition to aiming for the preservation. Many activities in the process of making batik stimulate fine motor for the child's readiness to write, among others, the process of mola, klowong and nerusi, giving color with the technique of colet, nembok and make the crevice on the edge of cloth with paraffin wax in the squeeze. Batik activities that have been done by school students just introduction or socialization only. They learn the process of making batik just want to know how it feels how to make it without realizing that there are other benefits that are more valuable, namely that by studying

The basics of fine motor training that children get from learning to write this batik will smooth the fine motor muscles and hand-eye coordination so that it becomes supple (Landy and Burrige, 1999). Motor proficiency is essential in early childhood for overall motor development and considered as the basis and building blocks of more complex movements skills (Clark and Metcalfe, 2002). Fine motor skills are essential in writing because they help form letters and numbers accurately and "can only be produced by proper timing and force control of coordinated arm, hand, and finger movement". It is important to assess young children's fine and gross motor skill performance because research has shown that a strong, positive relationship exists between fine motor skills and academic success. That is, children that perform fine motor skills better tend to be more academically successful than that of children who do not (Henderson et al., 2007) the benefits of fine motor skill intervention are not limited to improvements in motor proficiency. They have been shown to affect math and reading performance (Dinehart and Manfra, 2013).

2 HAND-DRAWN BATIK

Hand-drawn Batik there are several stages in the process the hand-drawn Batik including several sub-processes of waxing dyeing and dewaxing (removing the wax) and preparing the cloth, tracing the designs, stretching the cloth on a frame, waxing the area of the cloth that does not need dyeing,

preparing the dye, dipping the cloth in dye, boiling the cloth to remove the wax and washing the cloth.

There are many activities of hand drawn batik making batik for the child's readiness to write, the process of mola, klowong and nerusi, giving color with the technique of colet, and make the crevice on the edge of cloth with paraffin wax in the squeeze.

Here is an introduction to the process of making batik that can be done on children.

- a) Mola, prepare motif picture on cotton cloth. Put the cotton over the picture and trace the motifs on the top and bottom of the fabric on the tracing table. The following figure 1 is the photo while student is tracing the motifs.



Figure 1: Klowong.

- b) Klowong, Thickening motifs on fabric with canting containing wax liquid. The following figure 2 is the photo while student is thickening motifs.



Figure 2: Klowong.

- c) Nerusi, Thickening the rear motif of the fabric. The following figure 3 is the photo while student is thickening the rear motif.



Figure 3: Nerusi.

- d) Giving color with the technique of colet, coloring motif pictures that have been in klowong cloth

with a brush. The following figure 4 is the photo while student is coloring motifs with a brush.



Figure 4: Mencolet.

- e) Remukan, a motif of cracked ornaments on the edge of the fabric with liquid paraffin wax. The following figure 5 is the photo while student is cracking ornaments.



Figure 5: Nerusi.

- f) Dye the fabric base color, rinse and dry. The following figure 6 is the photo while students are rising and drying.



Figure 6: Coloring the base, rinsing and drying.

Learning batik starting from how to use the correct canting, then write it on the surface of the fabric until it becomes a batik patterned fabric require time and a long process if you want to succeed well. Not enough just one try, repeated practice of multiple experiences, students will look for the best way to perform the expected movement. The wrong techniques will be abandoned and gradually replaced with the correct movement so that eventually the students will master the whole movement by repeating the process of motor activity is done through trying and trying again (Luthan and Rusli 1988). Repetition of those experiences increases the chances of a right response (Mudjiono and Dimiyati, 2006). The process of learning the formation of the relationship between stimulus and

response is in line with the theory of Association Psychology.

Skill are developed through practice sensory information is interpreted and action follows from the interpretation the sequence of events can be depicted: Stimulli, senses, recognition by brain, interpretation (muscular action), feedback to senses, repeat cycle with improved performance (Collins and Nigel, 1989). Similarly, the repetitive batik making skills of the fine motor muscles of the hands and eye coordination become better prepared for the child doing the writing activity.

Writing is a complex activity that includes arm, hand-eye coordination (Abdurrahman, 1996). Coordination is the ability to perform movements at various levels of difficulty quickly and efficiently, as well as full of precision (Thompson, 1991). To be able to write one must master the ability to remember visually to remember the letters and sequence of movement in its making (Ashman and Elkins, 1990). The development of writing skills in children is influenced by the environment and fine motor control skills (Landy and Burrige, 1999). The control skills will come up if the child gets repetitive exercise. Instruction in handwriting can provide preschool teachers a way to mark developmental milestones across the rapid age-related changes in motor skills and social emotional behaviours in the preschool years as well as to help support children's language and cognitive development. Handwriting instruction supports school readiness Explicit handwriting instruction in the preschool years, using developmentally appropriate classroom practices, can provide strong foundational skills to prepare young children to enter kindergarten. Thoughtful researchers have advocated a refocused attention on handwriting in the school curriculum given the emphasis in the Common Core State Standards on high quality written texts. Improving fine motor writing skills and handwriting readiness in preschool children may be a key to improving academic skills in the long term (Dinehart, 2015)

3 METHODS

Research method that will be used in this research is survey method with correlation technique. The variables of skills batik making are tracing motif image (mola), thicken with canting containing hot wax (nglowong & nerusi), make crab (remukan) and color it by technique of applying dyestuff by means

of brush (coletan). The variable of students writing ability is based on writing test score result.

4 RESULTS AND DISCUSSION

The study was conducted at the Primary school of West Jakarta. The sample used was 30 students of Grade II and III students. The sample selection was done by purposive mix random sampling technique.

X variable (batik skills) obtained from the calculation score X variable assessment consisting of 6 aspects of assessment conducted by three assessors of 30 respondents. Based on the analysis of the score of the assessment results obtained range of empirical scores batik skills are in between 42.33 to 85.00 from the range of theoretical scores 0 to 100.

Table 1: Frequency distribution of batik skill score.

No	Class Interval	Frequency	Median	Frequency Relative (%)	Frequency cumulative (%)
1	42 – 50	5	46	16,67	16,67
2	51 – 59	4	55	13,33	30,00
3	60 – 68	7	64	23,33	53,33
4	69 – 77	11	73	36,67	90,00
5	78 – 86	3	82	10,00	100,00
		30		100,00	

From the table 1, it is 3 respondents or as much as 10.00% get the score that is in the highest interval class (78 - 86) and as many as 5 respondents or 16.67% get the score which is at the lowest interval (42 - 50). The highest frequency of 11 respondents or 36.67% is in the fourth interval (69 - 77) and the lowest frequency is 3 respondents or 10.00% is in the fifth interval (78 - 86).

The graph above shows that the respondents whose scores are at the average level (64.90) are those in the fourth interval (69 - 77) totalling 11 respondents or 36.67%, the number of respondents who score below the average level 16 respondents or 53.33% and respondents who scored above the average of 3 respondents or by 10.00%.

Y variable data (writing ability) is obtained from the calculation of score of Y variable consisting of 6 aspects of assessment conducted by 3 (three) appraisers to 30 respondents. Based on the analysis of scoring results obtained range of fine motor empirical scores ranging from 50.00 to 88.00 from the range of theoretical scores 0 to 100. The data distribution frequency table of writing ability (Y) consisting of 5 interval classes with interval class length 8.

Table 2: Frequency distribution of writing ability score.

No	Class Interval	Frequency	Median	Frequency Relative (%)	Frequency cumulative (%)
1	50 – 57	3	53,5	10,33	10,33
2	58 – 65	4	61,5	13,33	23,66
3	66 – 73	13	69,5	43,33	66,67
4	74 – 81	7	77,5	23,33	90,00
5	82 – 89	3	85,5	10,00	100,00
		30		100,00	

From the table 2, it is 3 respondents or as much as 10.00% get the score which is in the highest interval class (82 - 89) and 3 respondents or 10.00% 57. The highest frequency of 13 respondents or 43.33% is in the third interval (66 - 73) and the lowest frequency is 3 respondents or 10.00% are in the first interval (50-57) and the fifth interval (82 - 89).

The table 3 shows that the respondents whose scores are at the mean level (70.30) are those in the third interval (66 - 73) of 13 respondents or 43.33%, the number of respondents who score below the average level of 7 Respondents or as much as 23.33% and respondents who scored above the average of 10 respondents or 33.33%.

Table 3: Descriptive statistics recapitulation.

Variable	n	Score		Mean	Me	Mo	S ²	S
		Max	Min					
X	30	85,00	42,33	64,90	67,21	71,50	130,44	11,42
Y	30	88,00	50,00	70,30	70,42	70,30	76,58	8,57

Data Analysis Requirements: The tests were performed to prove that the research data is normally distributed and homogeneous. Normality of data of each variable that is X and Y is done by Lilliefors test and homogeneity of data is done by Barlett test. For regression linearity test and correlation test done together in hypothesis testing.

Test Data Normality: The Lilliefors test is done with the following steps: Sorting the sample data from the smallest data to the largest data, Determining the z value of each data, Determining the probability for each z based on the z table called F (z), Calculates the cumulative frequency of each value of z called S (z), Determines the value $Lo = |F(z) - S(z)|$, finds the maximum Lo value, Find the Lt value of the Lilliefors table then compare the Lo with Lt. Basic decision making with the provision if $Lo < Lt$ then accept H_0 which means that the data is normally distributed. Based on the calculation of normality test done obtained Lo Variable X amounted to 0.0910, and Lo Variable Y of 0.0752. As for Lt at the level of significance $\alpha =$

0.05 with $n = 30$ is 0.1870. Since L_o of two data sets is smaller than L_t , it can be concluded that the X and Y data groups are from normally distributed populations (see in Table 4).

Table 4: Normality test results.

No.	Variable	L_o	L_t ($\alpha=0,05$)	Conclusion
1	X	0,1047	0,1870	Normal distribution
2	Y	0,0665	0,1870	Normal distribution

Homogeneity test on research data using Barlett formula on each data group with test criterion $\chi^2_{test} < \chi^2_{table}$. Based on the calculation of homogeneity test of Y over X the value of χ^2 test is 2.03. The χ^2 table at significance level $\alpha = 0.05$ and $dk = k - 1 = 2 - 1 = 1$ is 3.84. Since $\chi^2_{test} < \chi^2_{table}$ is $2.03 < 3.84$, it can be concluded that the variant of the data group Y over X is homogeneous.

Hypothesis Testing: The first hypothesis states that there is a positive relationship between the skills of batik (X) with the ability to write (Y). Based on the results of model calculation of the relationship between variables X and Y variables with the form of simple linear regression equation $\hat{Y} = a + bX$ Retrieved regression equation $\hat{Y} = 31.69 + 0.60X$ Simple linear regression equation data pair between batik skill variables (X) (Y) explains that the regression direction coefficient is 0.60 and the constant is 31.69, which means that any increase of batik skill score of one unit can lead to an increase in writing ability of 0.60 units at constant 31.69.

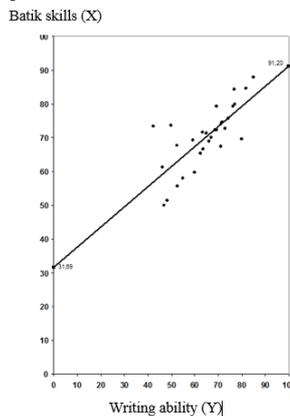


Figure 7. The sequence diagram of regression.

Linearity regression of batik skills with writing ability is presented in table Anava, Significance Test and Linearity Regression $\hat{Y} = 31.69 + 0.60X$. Regresi Signifikan = F test (33,91) > Ftable (4,20). Regresi Linear = F test (2,68) < F table (5,77). The test results concluded that the regression model

between batik skills with writing ability is significant and linear (see in figure 7).

The hypothesis of the relationship of batik skills with the ability to write hypothesis testing using product moment correlation analysis technique from Pearson. Based on calculation result obtained correlation coefficient $r_{y1} = 0,740$. The value of r_{table} criticized r product moment at the significance level of 0.05 and $n = 30$ is 0.361. Thus, r_{test} is larger than r_{table} ($0.740 > 0.361$). The conclusion is there is a positive relationship between batik skills with writing ability.

Significance of correlation coefficient (r_{y1}), calculated by using t-test. From the calculation results obtained t count of 5.82. From the list of percentile values of distribution t with degrees of freedom ($n-k$) = $30 - 2 = 28$ at significance level $\alpha = 0.05$ obtained $r_{table} = 1.70$. When r_{test} compared with r_{table} obtained t count is greater than table ($5.82 > 1.70$). Thus, it can be concluded that the relationship of batik skills with writing ability is significant.

Coefficient of determination done to know the amount of contribution of variable of batik skill in influencing writing ability. From the calculation of coefficient of determination for both variables obtained value of 54.77%. The percentage indicates that the writing ability is determined by the contribution of batik skill variable by 54.77%, while the rest of 45.23% is the contribution of other factors beyond the variable of batik skills.

5 CONCLUSIONS

Based on the results of testing and analysis that have been done, concluded there is a positive relationship between the skills of batik (X) writing ability (Y) with correlation coefficient $r_{y1} = 0.740$. That means, the better the batik skills will improve the writing skills of children. Conversely, if the skills of batik low then the ability to write children will also be low. Batik skills require flexibility of arm muscle movement, joints of the hands and fingers. Likewise, with the ability to write, flexibility factor of arm muscle movement, joints of the hands and fingers is essential so that children are able to write well and correctly. With the determination coefficient of 54.77% it can be said that about 54.77% of children's writing ability is determined by the skills of batik. Based on the value of the coefficient of determination, it is seen that batik skills are not the only factors that contribute to the ability to write children.

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