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Virtual Teacher Determinant on Special Needs Children Accomplishment in Learning Batik

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of this research, it shows that pedagogic competence, personality competence, professional competence, and social competence of the virtual teachers partially affect the special needs children accomplishment in learning batik positively. It means that the higher the competences of a virtual teacher are, the more the special needs children accomplish and vice versa. Personality competence and social competence significantly affect the special needs children accomplishment in learning batik whereas pedagogic competence and professional competence do not affect as significant. The most dominant competences are the personality competence and the social competence whose value is equally 0.890 measured with Spearman's rank correlation coefficient. The pedagogic competence ranked 0.250. and the one which has the least influence is the professional competence ranked 0.230.

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"Virtual Teacher" Determinant on Special Needs Children Accomplishment in Learning Batik

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Abstract—The aim of this research is to specify the most dominant competence of a virtual teacher among pedagogic competence, personality competence, professional competence, and social competence on the accomplishment of special needs children at Tumbuh primary school Yogyakarta. This is a quantitative research. The population of the research is the virtual teachers teaching batik at Tumbuh I and II primary schools. Batik is taught in third grade at Tumbuh I primary school and in a multiclass of third and fourth graders and in fourth grade at Tumbuh II primary school, in total there are five appointed virtual teachers. The data is collected by distributing questionnaires. The questionnaire is used to obtain variable data namely pedagogic competence, personality competence, professional competence, and social competence. The questionnaire is validated by professional judgment method. The reliability test uses nonparametric statistic formula because the population only consists of 5 virtual teachers. Based on the result of this research, it shows that pedagogic competence, personality competence, professional competence, and social competence of the virtual teachers partially affect the special needs children accomplishment in learning batik positively. It means that the higher the competences of a virtual teacher are, the more the special needs children accomplish and vice versa. Personality competence and social competence significantly affect the special needs children accomplishment in learning batik whereas pedagogic competence and professional competence do not affect as significant. The most dominant competences are the personality competence and the social competence whose value is equally 0.890 measured with Spearman's rank correlation coefficient. The pedagogic competence ranked 0.250, and the one which has the least influence is the professional competence ranked 0.230.

Keywords—determinant, virtual teacher, batik, special needs children

I. INTRODUCTION

According to Government Regulation Number 19 of 2005, education is distinguished into 2 (two) categories namely formal education and informal education. The definitions are as follows: a) formal education is a structured and tiered education which comprises of primary, secondary and tertiary education, whereas b) informal education can include various sources apart from formal education classification, still structured and tiered, such as courses and training institutes.

School as a miniature of the society itself certainly consists of diverse people, that leads to the birth of various

cultures. Cultural activity makes emotional and social experience more meaningful [1, 2]. It also relates to minorities who are marginalized due to cultural differences, social status, gender, skin color, disability or other factors that might outcast a person. Speaking particularly of the special needs, the government provides the same or undifferentiated service for them to attend classes, the school is called inclusive school. While students with disabilities are called ABK-*Anak Berkebutuhan Khusus* (Special Needs Children). Tarmansyah [3] states that inclusion refers to education as a service for all individuals. Principally, understanding inclusion means sharing the same vision on how children should be able to learn, work and play together. Everyone must believe that education is supposedly inclusive, fair and indiscriminate.

In addition, Eisenman, *et al.* in [4] states that inclusive education exists because the school system and educators have fought for obtaining a service for students with limitations in public schools and ensure that they provide service to everyone as needed. Similarly, confirmed by UNESCO Bangkok [5] stating that:

Inclusive education [6-9] is not just simply an idea about how some students can participate in public education, but more of an approach to invent a means to change the education system in order to remove barriers that prevent students to take part thoroughly in education. Inclusive education encourages teachers, school managers, children, families and communities to help children study.

The academic potential of a child cannot develop separately from their social, emotional and physical potential, because these aspects are related to one another in their growth. A teacher's role in teaching children with various backgrounds and abilities is essential. Some of the teachers teaching in an inclusive school are a class teacher, a teacher for specific subject (such as religious education, physical and health education, and cultural arts education), and a special teacher known as a virtual teacher. The role of a virtual teacher in an inclusive school is very important since their duty as a mentor or companion for the special needs children in completing the tasks given by the teachers [10, 11].

One of the schools in Yogyakarta providing inclusive education is Tumbuh Primary School. This school receives and provides educational services for special needs children. Tumbuh Primary School develops the curriculum called *Kurikulum Tingkat Satuan Pendidikan-KTSP* (Education

Unit Level Curriculum) by enriching the learning materials tailored specifically for the special needs children and fitting the context of the school, a family, cultures and the world.

Tumbuh primary school vision is mainly about how the students may grow and develop as a learner who has good characters, celebrates diversity and local wisdoms, loves their homeland and shows awareness as a citizen of the world. The school vision observable through the students and the virtual teachers. The concrete example is the existence of *batik* as one of the subjects taught in this school, it is also known as the noble work.

The existence of this subject is corresponding with the vision of Tumbuh primary school realizing the spirit of education which celebrates the local culture, Yogyakarta. *Batik* is one of many cultures which exist in Indonesia, inherited from one generation to the next. Therefore, *batik* becomes the main focus of this research. *Batik* lesson is taught to the fourth graders at Tumbuh I primary school and in the multiclass of third and fourth graders as well as in the fourth grade at Tumbuh II primary school. Each class consists of 22 students, including the special needs students and the others.

The focus of this research is to collect data at Tumbuh I and Tumbuh II primary schools. At Tumbuh I, there are 2 special needs students in the fourth grade. While at Tumbuh II, in the multiclass of third graders, there is 1 special needs student, and in the multi class of fourth graders there is also 1 student. In the fourth grade at Tumbuh II primary school, there are 2 special needs students. The virtual teachers' presence in the class is meant to assist the special need students overcoming difficulties, because comprehension, development, and participation of each student may vary from one another, therefore, they are needed to help the special needs children to gain their fullest academic, social, emotional and physical potentials.

The virtual teacher assistance during learning and teaching activities determines the accomplishment of the special need's students Tumbuh Primary School in Yogyakarta to its fullest potential. This reasoning leads to a case study which is important to be investigated further.

The rest of this paper is organized as follow: Section II describes method of this research. Section III presents the obtained results and following by discussion. Finally, Section IV concludes this work.

II. PROPOSED METHOD

The approach performed in this research is quantitative with non-experimental method that is a correlational research. The quantitative approach was chosen in order to view the comparison of a virtual teacher competences and to spot the most dominant competence among pedagogic competence, personality competence, professional competence, and social competence on the accomplishment of the special need's children at Tumbuh Primary School in learning *batik*. This correlational research aims to find out the relation of a virtual teacher competence with the accomplishment of special needs children.

The population in this research is virtual teacher assisting in *batik* class at Tumbuh I and II primary school. In

fourth grade at Tumbuh I and in the multiclass of third graders and fourth graders and in the fourth grade at Tumbuh II, in total there are virtual teachers who all become respondents. Thus, this is a population study (not using samples). In this study, the dependent variable is the special needs student's accomplishment in learning *batik* during the first semester of 2016/2017 school year collected from the report cards. The independent variable is the variable testing the effects on the dependent variable that is the virtual teacher comprising of their pedagogic competence, personality competence, professional competence, and social competence. The data of independent variable is obtained from the questionnaire scores. The techniques used in collecting the data in this study are questionnaire and documentation. Researcher was observing the learning and teaching activities during the *batik* class.

Validity is a supporting evidence and theory on the interpretation of test scores conformable with test objectives [12]. In this research, the questionnaire validity is tested with professional judgment method, the questionnaires were examined by the lecturers as the validator, they are Dr. Mumpuniarti and Dr. Nur Azizah (Lecturer in the Department of Special Education), in order to validate the quality of the questionnaire. Whereas the reliability test uses nonparametric statistics formula because the population only consists of 5 virtual teachers. The data analysis technique is descriptive analysis, to know the distribution frequency of a virtual teacher competence categorized as excellent, good, average, poor, and very poor. The formula used to determine the classification according to Azwar [13], here as follows:

Excellent: $M + 1.5 SD < X \leq \text{maximum ideal}$
 Good: $M + 0.5 SD < X \leq M + 1.5 SD$
 Average: $M - 0.5 SD < X \leq M + 0.5 SD$
 Poor: $M - 1.5 SD < X \leq M - 0.5 SD$
 Very Poor: $\text{minimum ideal} \leq X \leq M - 1.5 SD$

Where:

Minimum score= 1 (strongly disagree)
 Maximum score= 4 (strongly agree)
 Minimum ideal= number of statements \times minimum score
 Maximum ideal= number of statements \times maximum score
 Mean ideal (M)= (maximum ideal + minimum ideal) / 2
 Ideal standard deviation= (maximum ideal - minimum ideal) / 6

III. RESULT AND DISCUSSION

Section presents the obtained results and following by discussion

A. Pedagogic Competence (X1)

Pedagogic competence instrument consists of 10 indicators with 41 statements. The result of frequency analysis based on these categories-excellent, good, average, poor, and very poor-of the pedagogic competence is shown in the following Table I:

TABLE I. PEDAGOGIC COMPETENCE

Category	Interval	Freq	Percentage (%)
Excellent	$133.3 < X \leq 164$	0	0.0
Good	$112.8 < X \leq 133,3$	3	60.0

Average	$92.3 < X \leq 112.8$	2	40.0
Poor	$71.8 < X \leq 92.3$	0	0.0
Very Poor	$41 < X \leq 71.8$	0	0.0
Total amount		5	100.0
Average score = 116.9			

Table I above shows that there are 3 virtual teachers whose percentage (60.0%) categorized as good and 2 virtual teachers whose percentage (40.0%) categorized as average. In other words, none are categorized as excellent, poor, or very poor. The average of the pedagogic competence scores is 116.9 categorized as good.

B. Personality Competence (X2)

Personality competence consists of 5 indicators and 13 statements. Here as follows the calculation formula to determine the categories-excellent, good, average, poor and very poor-of the personality competence, shown in the following Table 2:

TABLE II. PERSONALITY COMPETENCE

Category	Interval	Freq	Percentage (%)
Excellent	$42.3 < X \leq 52$	0	0.0
Good	$35.8 < X \leq 42.3$	5	100.0
Average	$29.3 < X \leq 35.8$	0	0.0
Poor	$22.8 < X \leq 29.3$	0	0.0
Very poor	$13 < X \leq 22.8$	0	0.0
Total amount		5	100.0
Average score = 39.80			

Table II above shows all virtual teachers 5 people in total, their personality competence is categorized as good, the percentage is 100%. Thus, there is not any virtual teachers who are categorized as excellent, average, poor and very poor. The average score of the personality competence is 39.80 categorized as good.

C. Professional Competence (X3)

Professional competence consists of 5 indicators and 16 statements. This following formula determines the categories-excellent, good, average, poor and very poor-of the professional competence, shown in the following table:

TABLE III. PROFESSIONAL COMPETENCE

Category	Interval	Freq	Percentage (%)
Excellent	$52.0 < X \leq 64$	0	0.0
Good	$44.0 < X \leq 52.0$	5	100.0
Average	$36.0 < X \leq 44.0$	0	0.0
Poor	$28.0 < X \leq 36.0$	0	0.0
Very Poor	$16 < X \leq 28.0$	0	0.0
Total amount		5	100.0
Average score = 46.90			

Table III above shows that all virtual teachers, five of them are categorized as good, the percentage is 100%. No virtual teachers are categorized as excellent, average, poor or very poor. The average score of the professional competence is 46.90 categorized as good.

D. Social Competence (X4)

Social competence consists of IV indicators and 9 statements. This following formula determines the

categories-excellent, good, average, poor and very poor-of the social competence, shown in the following Table IV:

TABLE IV. SOCIAL COMPETENCE

Category	Interval	Freq	Percentage (%)
Excellent	$29.3 < X \leq 36$	2	40.0
Good	$24.8 < X \leq 29.3$	3	60.0
Average	$20.3 < X \leq 24.8$	0	0.0
Poor	$15.8 < X \leq 20.3$	0	0.0
Very Poor	$9 < X \leq 15.8$	0	0.0
Total amount		5	100.0
Average score = 29.00			

Table IV above shows that there are 3 virtual teachers whose social competence is categorized as good, the percentage is (60.0%) and 2 virtual teachers whose social competence is categorized as excellent, the percentage is 40%. No virtual teachers are categorized as average, poor or very poor. The average score is 28.86 categorized as good.

E. Description of Variable Data Y (Special Needs Children Accomplishment in Learning Batik)

The accomplishment of special needs children in learning batik is measured from the numeric grade on their report card from the first semester of 2016/2017 school year. The summary of the students' numeric grades collected from their report cards is shown in the following Table V:

TABLE V. SPECIAL NEEDS CHILDREN ACCOMPLISHMENT IN LEARNING BATIK

No	Initial	School	Category: special needs students	Numerical grade
1	ABR	T I	Asperger Syndrome (AS)	8.5
2	NSYF	T I	specific learning difficulties	7.5
3	MHN	T II	specific learning difficulties	8
4	APP	T II	Autism	8
5	TSA	T II	ADHD	8
6	NA	T II	Feeble minded	7.5



After determining the categories of each variable data of the virtual teacher competences and the accomplishment of the special needs children then the data is analyzed using the nonparametric statistics method. Spearman's rank correlation analysis is used to test the effects of virtual teacher competences on the accomplishment of the special need children. The result from Spearman's rank correlation analysis is shown in the following Table VI:

TABLE VI. THE RESULT FROM SPEARMAN'S RANK CORRELATION ANALYSIS

Variable	r _s value	Sig	Note
Pedagogic competence	0.293	0.573	Not significant
Personality competence	0.840	0.036	Significant
Professional competence	0.086	0.871	Not significant
Social competence	0.820	0.046	Significant

Based on Table VI, the result from Spearman's rank correlation analysis, shows that the virtual teachers' pedagogic competence and professional competence do not affect significantly the accomplishment of the special needs children in learning batik. While their personality and social competences significantly affect the special needs children accomplishment in learning batik (see Table VII).

TABLE VII BATIK WORKS OF SPECIAL NEED CHILDREN

No	Initials	School	Batik Works Special Needs Children
1	ABR	T I	
2	NSYF	T I	
3	MHN	T II	
4	APP	T II	
5	TSA	T II	
6	NA	T II	

IV. CONCLUSION

Based on the results of the research, it can be concluded that pedagogic competence, personality competence, professional competence, and social competence of a virtual teacher partially affect positively the accomplishment of special needs children in learning batik. By saying that it positively affects means that the higher the competence of a virtual teacher then the more the special needs students accomplish and *vice versa*. A virtual teacher competence on the accomplishment of special needs students at Tumbuh I

and Tumbuh II primary schools may be viewed through quantitative data as follows:

the personality competence, the Spearman's Rank correlation coefficient (r_s) = 0.840;

the social competence, the Spearman's Rank correlation coefficient (r_s) = 0.820;

the pedagogic competence, the Spearman's Rank correlation coefficient (r_s) = 0.293;

and the professional competence, the Spearman's Rank correlation coefficient (r_s) = 0.086. Based on data above, the virtual teacher personality and social competences significantly have a positive impact on the accomplishments of special needs students. Whereas the pedagogic competence and the professional competence of a virtual teacher insignificantly have a positive impact on the accomplishment of the special need's children in learning batik. If we rank a virtual teacher competence from the most significant influence orderly then it will be the personality and social competences, then the pedagogic competence, and the least influence is professional competence.

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PAGE 1

PAGE 2

PAGE 3

PAGE 4

PAGE 5

PAGE 6

PAGE 7

PAGE 8
