Elementary School Teacher Competency in the Implementation of Environmental Education Integration

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Abstract: *This study is an evaluation of teacher competence in applying the method of integration of environmental education in elementary schools. This quantitative study examined 60 elementary school teachers who were divided into professional and unprofessional teachers. The test instrument answers questions that present the ability to use resources, the ability to process the learning process, the ability to integrate environmental material, knowledge of environmental concepts, and the ability to support extracurricular activities as environmental education. The researcher also used the T-test to obtain differences competence in both groups. The results of the analysis show that certified teachers have higher competencies than unprofessional teachers. Professional teachers have an excellent ability to find learning resources, plan to learn, integrate material and extracurricular activities. While the teacher's knowledge of environmental concepts is shown in useful categories. For teachers who are not certified, general guiding competence is still a relatively low category but is still an indicator of extracurricular planning. The results of this study are: between certified and non-certified teachers in elementary school.*

Keywords: *Professional, extracurricular, pedagogic*

I.   Introduction

Environmental education for elementary school students is essential in the formation of environmental awareness. Environmental education includes four essential elements, namely: 1) Increased awareness of the importance of conservation in all human activities; 2) Development of knowledge and in-depth understanding of environmental issues; 3) Introduction of values and ethics that support commitment and social support in conservation efforts and 4) Facilitate behavior change and actions that support sustainable development [1]. Environmental education has characteristics as learning that connects human activities and the environment. Also, this educational model emphasizes learner participation and a sense of responsibility towards the environment.

Environmental education in Indonesia takes place in two methods, namely integrative methods and consistent methods. Monolithic methods take place separately from other subjects, while integrative methods take place by combining environmental material with other subjects [2]. Several studies outlining the method of integrating environmental subjects with other subjects describe that the ideas of incorporating environmental education into formal school learning have been successfully applied with the content and method approach. The teacher develops environmental issues in the classroom and promotes environmental education in learning instruction. Combining the context of environmental education in basic science subjects aims to develop environmental literacy and concern [3].

The teacher is a very crucial component in addition to other educational components such as students, learning methods and school infrastructure[4]. However, the teacher plays an essential role in achieving quality processes and results. The implementation of education in Indonesia divides the two groups of teachers based on their professionalism. Professional teachers are teachers who have met the requirements demanded by the teaching profession. Professional teachers have mastered the subject matter as well as problems in teaching and learning interactions[5]. Professional teachers are also able to develop skills about subject content on an ongoing basis. In the Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers, it is explained that professional teachers must have four competencies, namely, pedagogical, personal, professional and social competencies.

Professional teachers are characterized by ownership of certificates from the Ministry of Education of the Republic of Indonesia. Teacher data (in 2017) which have certificates is only about 53% teachers is certified. The condition of the availability of professional teachers causes the educational learning objectives to be not optimal. On the other hand, the implementation of quality learning requires teachers to be able to produce a

good performance. The measure of teacher performance assessment refers to teacher knowledge about 1) the use of learning resources; 2) learning process; 3) material that is integrated; 4) environmental material, and 5) extracurricular activities [6].

The description of the problem of implementing environmental education in Indonesia is centered on teacher competence in producing a performance. Therefore, this study focuses on the ability of elementary school teachers to integrate environmental education on subjects. This study aims to compare the competencies of teachers who are certified and Non-Certified.

II.   Methods

This research method uses a quantitative approach with two objectives, namely (1) describing teacher competencies in integrating environmental education; 2) analyze the differences in the competence of professional (certified) teachers and unprofessional teachers (not certified). The study population was all elementary school teachers in Makassar City. The researcher selected 40 certified teachers and 40 non-certified teachers as the research sample. Research instruments are test instruments to measure teacher knowledge about the use of learning resources, learning processes, integrated material, environmental and extracurricular material. Data analysis using quantitative descriptive statistics and inferential statistics. Descriptive analysis is analyzed by referring to the following four categories:

Table 1. Teacher Competency Categories

Score	Category
1,00 – 1,75	Very Low
1,76 – 2,50	Low
2,51 – 3,25	High
3,26 – 4,00	Very High

Source: Processed Data 2019

III.   Result

3.1. Teacher Competence

The ability of certified and non-certified teachers is outlined on fig. 1. This study found that the competence of teachers who are certified higher than those who are not certified.
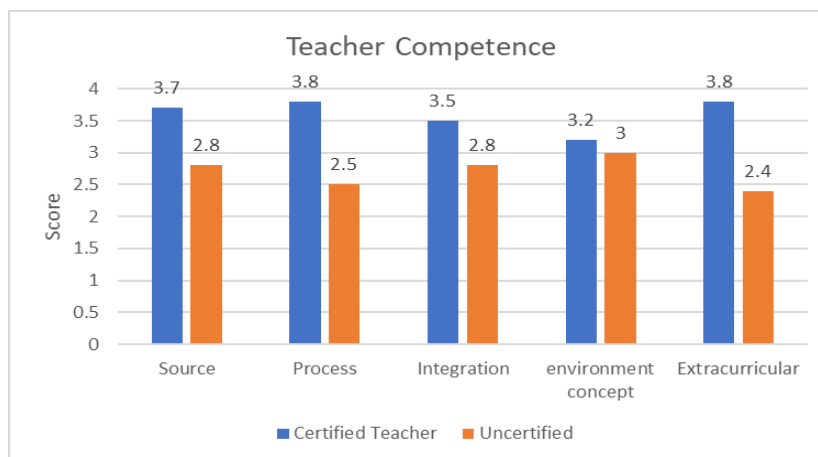

Fig.1 Teacher competency in integrating environmental education
Source: Processed Data 2019

Based on fig. 1, it shows that certified teachers have higher competencies than uncertified teachers. Certified teachers have very high competence in developing learning resources. Moderate, uncertified teachers only have high category competencies. Certified teachers are also very capable of planning the learning process with very high categories while uncertified teachers are categorized as low. In integrating environment-based learning certified teachers have a very high category with a score of 3.5 while uncertified teachers have a high category with a score of 2.8. In understanding the environmental concept of certified teachers have a score of 3.2 which is categorized as high, while uncertified teachers have a score of 3 in understanding environmental concepts that fall into the high category. Certified teachers can develop a very high extracurricular program with a score of 3.8, whereas in uncertified teachers only able to develop extracurricular programs with a score of 2.4 which falls into the low category.

Table 2. Results of Descriptive Statistics Analysis

Statistics		Certified Teacher	Not Certified Teacher
N	Valid	40	40
	Missing	0	0
Mean		3.6000	2.7000
Std. Error of Mean		.02148	.02774
Median		3.6000	2.6000
Mode		3.60	2.60
Std. Deviation		.13587	.17541
Variance		.018	.031
Range		.40	.80
Minimum		3.40	2.40
Maximum		3.80	3.20
Sum		144.00	108.00

Source: Processed Data 2019

In the table 2, the results of the descriptive analysis show that the maximum value of the certified teacher is 3.80, while the uncertified teacher is 3.20. The minimum score for certified teachers is 3.40, while for uncertified teachers it is 2.40. The mean value for certified teachers is 3.6, while for uncertified teachers it is 2.70. The certified teacher competency data shows a standard deviation of 0.14, while non-certified teachers show a standard deviation of 0.18. The standard deviation value of teachers who are not certified is higher than certified teachers, and this shows that the higher standard deviation of teachers indicates the diversity of data.

Table 3. Results of T-Test Analysis

Independent Samples Test		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
									Lower	Upper	
VALUE	Equal variances assumed	6.250	.015	25.654	78	.000	.90000	.03508	.83016	.96984	
	Equal variances not assumed			25.654	73.412	.000	.90000	.03508	.83009	.96991	

Source: Processed Data 2019

The results of the T-Test analysis show that there is a significant difference between the competency of certified teachers and non-certified teachers. This can be seen in table 3. above, where the results of the SPSS analysis show a significance value smaller than 0.005.

IV. Discussion

These results are consistent with the descriptive analysis which shows that certified teachers have higher competence than teachers who are not certified. The competency gap between the two groups is evident in the ability of teachers to run the learning process and develop extracurricular programs.

The difficulty of teachers in carrying out the learning process that integrates environmental education in subjects is generally caused by the teacher's inability to combine two learning materials. This is because the teacher does not yet have sufficient competency to integrate the values of environmental education into the subjects that are provided and the limited time available can hinder the achievement of good goals

This is by several previous studies which revealed that the problem of managing teaching and learning interactions requires the ability of teachers to master teaching materials, use effective learning media, find diverse learning resources and manage interactions that occur in the learning process.

Teachers as professionals in the field of education, besides understanding things that are philosophical and conceptual they must also know or carry out technical matters. Technical matters, especially activities to

manage and implement this teaching and learning interaction listed in the ten teacher competencies above. If the teacher can master and understand standard competencies and directly affect their performance.

The development of extracurricular programs related to environmental education in elementary schools will succeed with the ability of teachers to plan the program. Extracurricular programs are additional activities carried out outside of school hours conducted either at school or outside the school with the aim of gaining additional knowledge, skills, and insights and helping to shape the character of students according to their respective interests and talents.

The difficulty of the teacher in running the extracurricular program is because teachers who are not certified have not experienced in developing extracurricular programs. While certified teachers have been able to run extracurricular programs. Extracurricular activities in elementary schools are developed involving various school infrastructure, outside school learning resources, and external partners who support funds and activity facilities. Also, this program must also be planned for the right time and the involvement of students according to their needs.

V.   Conclusion

The results of the analysis show that certified teachers have higher competencies than unprofessional teachers. Professional teachers have an excellent ability to find learning resources, plan to learn, integrate material and extracurricular activities. While the teacher's knowledge of environmental concepts is shown in useful categories. For teachers who are not certified, general guiding competence is still a relatively low category but is still an indicator of extracurricular planning. The results of this study are: between certified and non-certified teachers in elementary school.

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