The Effect of Participation in Academic Achievement Activities on Vocational Teachers Competence

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ABSTRACT

The tasks of the teacher are to educate, teach, guide, and evaluate students. As professional educators, teachers need to have competence according to standard. This study was aimed to uncover a variable related to the competence of vocational high school teachers, specifically in academic achievement. The research sample of 77 vocational school teachers in East Java Province, Indonesia, was collected. This research was an ex post facto research and used survey methods. The data were obtained from the participant of the vocational teacher competency test and analyzed using analysis of variance. The results of the study concluded that: (1) the academic work competition had no effect on the competence of vocational teachers, (2) the acquisition of certificates of expertise, skills, and or TOEFL gave an authentic influence, and (3) the length of time involved as an instructor, resource persons, reviewers, and peer coaching had significant impact on the competence of vocational teachers.

Keywords: *academic, achievement, creation, certificate of competence, resource persons, vocational teacher competencies*

1. INTRODUCTION

The national average teacher competency test results are 53.02 with minimum passing standards of 55 [1]. These results indicate that in general teacher competency in Indonesia is relatively low and efforts are still needed to improve competence.

In law no. 14 of 2005 concerning teachers and lecturers and government regulation of the Republic of Indonesia number 19 of 2005 concerning national education standards explained that competencies are a set of knowledge, skills, and behaviors that must be possessed, internalized, and mastered by teachers in carrying out their professional duties. Teacher competencies include pedagogic competencies, personality competencies, social competencies, and professional competencies [2].

Competence shows rational actions to achieve a goal in accordance with the expected conditions. The competency is obtained through the process of education and or training. A person's competence is also formed by the knowledge factors that he gets through information. With the information obtained by a person will increase his knowledge which in turn formed his competence [3]

Individual competence can be formed because of the innate potential and the surrounding environment. Personal development and competence of a person is the result of a process of collaboration between heredity and environment. Every individual is a combination or convergence of internal factors and external factors.

Another factor thought to influence the competency of vocational high school (VHS) teachers is an academic achievement. Researchers are interested in conducting a study entitled "The Effect of Academic Achievement Activities on Vocational Teacher Competence".

The Indonesian directorate general of higher education defines academic achievement as an achievement achieved by teachers in carrying out their duties as educators and learning agents who receive recognition from the organizing institutions/committees at the sub-district, district/city, provincial, national and international levels [4]. Components of academic achievement include: (1) teacher participation in academic work competitions; (2) Obtaining a certificate of expertise/skills; (3) as an instructor or resource persons in a workshop or workshop; (4) mentoring peers, as core teachers, tutors, junior teacher guidance, and tutors for the field practice program for prospective teachers; (5) as book reviewers and/or teacher research

proposals, book editors, journal editors, writers on EBTANAS/UN/UASDA.

This study described the differences in vocational teacher competencies in terms of (1) participation in academic work competitions, among which are frequent, rare, and never, (2) the number of skills or skills certificates acquired, and/or English language certificates, and (3) the frequency of participation as an instructor, resource person, reviewer, and peer coaching.

Professional competence, in general, can be identified and abstracted from the scope of professional competence of teachers: (1) understand and apply educational foundation, (2) understand and apply learning theory according to the level of development of students, (3) able to handle and develop fields of study that become its responsibilities, (4) understand and apply a variety of learning methods, (5) able to develop and use a variety of relevant learning tools, media and resources, (6) able to organize and implement learning programs, (7) able to carry out evaluation of learning outcomes students, (8) able to grow the personality of students [5].

The identity of a professional teacher is a field of research that is developing, interesting, and concern of researchers. To understand the teacher as a profession, one cannot separate the teaching profession from the basic characteristics of other professions. The term 'profession' is a broad concept that involves many aspects [6]-[8].

According to Colbert, Brown, Sun Hee Choi & Steven and Desimone, teacher professional development is one of the most effective methods for improving teacher quality, teacher practice and student learning [9],[10]. Guskey states, professional development practices as "systematic efforts to bring about change in the classroom practices of teachers, in their attitudes and beliefs, and in the learning outcomes of students" [11]. A key factor in professional development is the desired outcome of building teacher capacity to improve student achievement.

The development of teacher professionalism is an important component in the comprehensive reform of the education unit. Teachers are at the center of education reform so they must make every effort to ensure their students meet the high standards that have been adopted by the district and state [12]. The teacher has the most direct contact with students and considerable control over what is learned and the learning atmosphere [13].

The American Federation of Teachers states that nations can adopt stringent standards, set visionary scenarios, produce the best research reports on how students learn, revise textbooks and assessments, use

successful learning strategies with a variety of students, and change all other elements related to systemic reform because without professional development and school reform in increasing achievement for all students nothing will happen [14].

Based on the description of professional teachers shows that professional teachers are teachers who have special abilities and expertise in the field of teacher training so that they can carry out their duties and functions as teachers with optimal and professional abilities. This is also in line with the principle 7 of Prosser's argument that vocational education will be effective if the teacher has successful experience in applying skills and knowledge to the operations and work processes that will be carried out [15].

The teacher's self-development strategy towards the school is hope for self-development and improvement of teacher competence. Danim explained some of the teacher's self-development strategies, including discussion of educational problems, seminars, workshops, writing books or teaching materials, making learning media and making technological works or works of art [16]. Darling's research proves that short conferences or workshops make "more than 9 out of 10 teachers in America have participated in professional learning which includes short-term conferences or workshops [17].

Traditional forms of professional development include motivational discussions at the beginning of the year, short workshops, bringing in outside experts, and skills training [17]-[19]. Teacher professional development must try to help teachers discuss their teaching practices and experiences. Because it is very possible for teachers to share knowledge about experiences with each other. These practical ideas must be effectively generalized into concepts that can be applied to other teachers [20].

Teacher-practitioner-oriented research emphasizes teacher-practitioner involvement in "action research" or "professional research". The data collected can be used to improve learning, student performance, and teacher performance. Wlodkowski emphasizes the importance of contextual learning and is embedded in the work of experienced teachers conducting action research [21]. According to McLaughlin & Zarrow in Lieberman & Miller teachers present cases with questions precisely and possible transformations for teachers and systems [22]. They stated that true university and district partnerships were important and acknowledged the advantages of teacher-practitioner partnership research could make a deep understanding of learning and learning for all.

Professional development programs can support curricular change and learn in enhancing student learning in the personal, social, and academic domains.

Teacher professional development has a significant impact on what is taught, how the material is taught, and social learning situations so that students acquire knowledge, skills and improve their ability to learn [23]. Teacher professional development can be an effective way to improve and ensure the quality of schools in general and classroom learning in particular. Professional development can contribute to improving teacher knowledge, attitudes, and pedagogical skills as well as student learning [24]. The results of Feras & Ibrahim's research, among others, also prove that sustainable professional development programs equipped with modern technology can promise quality educational outcomes and social welfare [25].

Some relevant previous research results indicate renewal in this study, which involves the variable academic achievement and competency of Vocational Teachers and previous research does not involve all of these variables.

The hypotheses of this study were: (1) there was differences in VHS teacher competencies in terms of participation in academic work competitions, (2) there was differences in VHS teacher competencies in terms of acquiring skills certificates or skills certificates, including TOEFL Certificates, and (3) there was differences in teacher competencies Vocational school in terms of participation as instructors, resource persons, reviewers, and coaching colleagues.

2. METHODS

The purpose of this study was to reveal the effect of academic achievement on vocational teacher competencies. To answer the problem, exposing facto research was performed.

The population of this research was vocational teachers who take the Teacher Competency Test (TCT). The determination of VHS teachers samples used the stratified random sampling technique, which was chosen from all teachers who teach VHS in East Java who had taken the teacher competency test and who were selected to be a research sample of 77 VHS teachers randomly. The determination of the number of samples used the following formula:

$$n = \frac{NZ^1s^2}{Nd^2 + Z^2s^2} \qquad (1)$$

Where n is number of sample, N is sample population Z is Z score according to significance level, s is variance and d is reliability 100% [26].

The research data were obtained through documentation techniques in the form of teacher portfolios (academic achievement data, participation in scientific forums, professional development work, and competency data of vocational teachers who have taken

TCT). Instruments for data collection for each research varied in the form of a portfolio in the form of a questionnaire completed with evidence: (1) participation in academic work competitions, (2) acquisition of certificates of expertise / skills, including the acquisition of TOEFL, and (3) participation as instructors, resource persons , reviewers, and peer coaching.

The results of the validation of the research instruments compiled in the valid and very valid categories. The validator stated 33.3% valid and the validator stated 66.67% very valid. The data analysis step was carried out to meet the research objectives.

Hypothesis testing was to partially test the influence of the independent variables and the dependent variable. To test the research hypothesis, the Analysis of Variance technique was used after the test requirements in the form of distribution normality test and homogeneity of variance were met.

3. RESULTS AND DISCUSSION

3.1 Vocational Teacher Competencies in terms of Participation in Academic Work Contest

The data of VHS teacher competencies in terms of participation in the academic work competition are listed in Table 1.

Table 1. Vocational Teacher Participation in Academic Work Contest

	N	Mean	Std. Deviation	Minimum	Maximum
.00	66	54.16	10.46113	30.00	78.57
1.00	5	59.80	5.11859	52.00	66.00
2.00	5	61.20	5.00000	46.00	70.00

It appeared that from 76 samples, there were 10 vocational teachers who had experience in competitions of academic work, with details of five experienced vocational teachers in five competitions of academic work, three vocational teachers participated in three competitions, and two vocational teachers each participated in one competition. After testing the analysis requirements and the results weremet, the results of the hypothesis test are listed in Table 2.

Table 2. Hypothesis Test of the Effect of Participation in Academic Work Contest on Vocational Teacher Competencies

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	642.45	4	160.61	1.57	.19
Within Groups	7268.09	71	102.37		
Total	**7910.55**	**75**			

It appears that F = 1.57 with Sig = 0.19. This gave a clue to accept the null hypothesis that there was differences in the competence of vocational school teachers in terms of their non-significant participation in the academic work competition. This information could be interpreted that the academic work competition did not affect the competence of vocational teachers.

3.2 Vocational Teacher Competencies Judging from the Acquisition of Skills/Skills Certificate, including TOEFL certificates

Vocational school competency data in terms of the acquisition of expertise/skills certificates, including TOEFL certificates, are listed in Table 3. It appeared that F = 3,614 with Sig = 0.010. This gave a clue to accept the working hypothesis; there was a very significant difference in the competence of vocational teachers in terms of their participation in the academic work competition. This information could be interpreted that VHS teacher competencies in terms of acquiring certificates of expertise or skills, including TOEFL certificates, had a very significant influence on VHS teacher competencies.

Table 3. Vocational Teacher Competency Data Judging from Acquisition of Skills / Skills Certificates, including TOEFL Certificates

	N	Mean	Std. Deviation	Minimum	Maximum
.00	60	53.39	9.27	30.00	72.00
1.00	11	55.89	11.84	30.00	72.00
2.00	4	71.14	7.17	65.00	78.57
5.00	2	60.00	9,43.	60.00	65.00
Total	**77**	**54.91**	**9.43**	**30.00**	**78.57**

From the 77 samples, there were 17 vocational teachers having skills/skills certificates, and or with details of 11 experienced VHS teachers on one expertise/skills certificate, and or, four vocational teachers having two certificates, one vocational teacher having five certificates, and one teacher having seven certificates. After testing the analysis requirements and

the results are met, the results of the hypothesis test are listed in Table 4.

Table 4. Vocational Teacher Participation in Academic Work Contest

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1330.710	3	443.57	4,82	.010
Within Groups	6628.153	72	92.058		
Total	**7958.863**	**76**			

3.3 Vocational teacher competencies in terms of participation as instructors, resource persons, reviewers, and mentoring colleagues

Data on vocational teacher competencies in terms of participation as instructors, resource persons, reviewers, and peer mentoring are listed in Table 5. It appears that in terms of length of time being involved as instructors, resource persons, reviewers, and peer coaching; from 77 samples, there were 60 vocational teachers having 0-50 hours experience, five vocational teachers having 51-100 hours experience, three vocational teachers having 101-150 hours experience, two vocational teachers having 151-200 hours experience, and seven vocational teachers having experience> 251 hours.

After testing the analysis requirements and the results are met, the results of the hypothesis test are in Table 6. F value = 4.04 with Sig 0.005, this gives a clue to accept the working hypothesis, that there are differences in the competence of vocational teachers in terms of the length of time as a participant as an instructor, resource person, reviewer, and peer coaching is very significant.

Table 5. Vocational Teacher Competency Data Reviewed from the Length of Participation as Instructor, Resource Person, Reviewer, and Counseling Peers

	N	Mean	Std. Deviation	Minimum	Maximum
0-50 Jam	60	52.64	10.06	30.00	78.57
51-100 Jam	5	63.48	7.77	55.00	76.00
101-150 Jam	3	59.00	1.00	58.00	60.00
151-200 Jam	2	66.00	8.49	60.00	72.00
> 251 Jam	7	63.25	5.93	52.00	71.00
Total	77	54.91	10.23	30.00	78.57

This information could be interpreted that VHS teacher competencies in terms of the length of time involved as instructors, resource persons, reviewers, and peer tutoring have a very significant influence on the competency of vocational teachers.

Table 6. Hypothesis Testing Competency of Vocational Teachers in Terms of Length of Participation as Instructor, Resource Person, Reviewer, and Peer Counseling

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1458.97	4	364.74	4.04	.005
Within Groups	6499.89	72	90.28		
Total	**7958.86**	**76**			

Academic work competition does not affect the competence of vocational teachers. This conclusion needs to be read carefully, the possibility of the sample is less numerous and less representative so it needs further research with larger sample size and studies also need to be associated with the level of competition in academic work, sub-district, district/city, province, and national. Likewise, the possibility of organizers are professional and some are less professional.

Another reason for the academic work competition does not affect the competence of vocational school teachers is the relatively small number of teachers participating in the academic work competition. The results of this study were in line with research by Putri & Imaniyati which proves the development of the teaching profession is still in the quite effective category [27]. Teacher professional development using indicators following the development of science and technology information that supports the profession through various scientific activities, developing various learning models, writing scientific papers, making teaching aids or media, following qualification education, following curriculum development activities are in the category of still quite effective.

Vocational teacher competencies in terms of obtaining certificates of expertise or skills, including the TOEFL, have a very real influence on the competency of vocational teachers. This result showed that in improving teacher competency teachers need to be encouraged and facilitated to obtain certificates of expertise or skills, and or TOEFL and in involvement as instructors, resource persons, reviewers, and peer coaching.

The length of time involved as an instructor, resource person, reviewer, and peer coaching had a very significant influence on the competence of vocational teachers. Kartowagiran's research results also revealed that the efforts or activities of most of the teachers who

had passed the certification and had received professional allowances were already good although they were not yet happy in terms of studying books [28]. This is also in line with the results of Sutikno's research which revealed that the frequency of vocational teachers writing textbooks was in the poor category [29]. The results of this study were relevant to the results of Atta & Mensah research, teachers were involved in professional learning programs, teachers were involved in workshops, in-service training, conferences, and seminars [30]. But the results of the study found that these models were structurally traditional, less organized, and limited to a number of teachers in the district, making them less effective in influencing the quality of teacher learning practices and student learning outcomes.

4. CONCLUSION

Academic work competition did not affect the competence of vocational teachers. Vocational teacher competencies in terms of obtaining certificates of expertise/skills, including TOEFL, had a very significant influence on the competence of vocational teachers. Vocational teacher competencies in terms of the length of time involved as instructors, resource persons, reviewers, and colleagues had a very significant influence on the competence of vocational teachers.

SUGGESTIONS AND IMPLICATIONS

This conclusion needs to be read carefully, it is likely that the sample is insufficient and less representative so that further research is needed with larger sample size. The implementation of academic work competitions needs to be intensified, both at the sub-district, district/city, provincial, and national levels. The organizers must, of course, be selected so that they are more professional so that vocational teachers are more motivated to follow. Teacher professional development uses indicators following the development of science and technology information that supports the profession through scientific activities, developing various learning models, writing scientific papers, making teaching aids or media, following qualification education, following curriculum development activities in the category of still being quite effective, so it is necessary encouraged, intensified, facilitated, and accompanied by experts.

Vocational teacher competencies are significantly affected by the acquisition of certificates of expertise or skills, including the TOEFL. These results indicate that in improving teacher competency it needs to be encouraged and facilitated to obtain certificates of expertise or skills, including TOEFL and in involvement as instructors, resource persons, reviewers, and peer coaching.

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