PROFILE OF MATHEMATICS TEACHER IN JUNIOR HIGH SCHOOL REVIEWED
FROM CONTINUOUS PROFESSIONAL DEVELOPMENT

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Abstract: The teaching profession is the Government's effort to improve the quality of teachers through improving teacher welfare. Teachers who have passed the teacher professional test will be given a professional allowance of one time the basic salary as a form of government efforts to improve teacher welfare. The purpose of this study was to determine the profile of mathematics teachers in junior high school in terms of Continuous Professional Development (PKB). This research is a *descriptive-qualitative research*, namely research conducted using quantitative and qualitative approaches. The research sample was junior high school mathematics teachers and school principals in Semarang City. From the results of this study shows that the profile of junior high school teachers in Semarang City, aspects: (1) aspects of self-development, 58% of teachers have good willingness and motivation to participate in this activity both organized by schools and other agencies, (2) in the aspect of scientific publications, 32% of teachers carry out scientific publications very well but most teachers still have difficulty conducting classroom action research and writing scientific articles, and (3) in the aspect of innovative work, 16% of teachers are not interested in making teaching aids, especially IT-based learning media.

Key Words: Profile, Junior High School Teacher, PKB

INTRODUCTION

A teacher is someone who has devoted himself to teaching knowledge, educating, directing students to understand the knowledge they teach them in early childhood education, formal pathways, primary education, and secondary education. The role of a teacher is very important in the process of creating a qualified next generation, both intellectually and morally [1]. The recognition of teachers as professionals is evidenced by the existence of educator certificates obtained through the educator certification program. This program is organized by universities that have an accredited educational

personnel procurement program set by the Government.

A professional teacher is a person who has special abilities and expertise in the field of teaching so that he is able to perform his duties and functions as a teacher with the ability of four competencies namely pedagogic competence, professional competence, social competence and personality competence [2]. Meanwhile, in opinion [3], states that a professional teacher is a teacher who masters the characteristics of teaching materials and the characteristics of students. Mastery of these characteristics is used to determine learning methods and strategies so as to increase students' interest in learning. The characteristics of professional teachers are being able to understand students in learning, mastering subject matter, being able to teach material well, being responsible for managing classes, thinking systematically how to carry out their duties.

The teaching profession (certification) is the Government's effort in improving the quality of teachers followed by improving teacher welfare so that it is expected to improve the quality of learning and the quality of education on an ongoing basis and can increase teacher work motivation [4]. Teacher certification aims to determine the feasibility of teachers in carrying out their duties as learning agents, improving the quality of educational processes and outcomes and improving teacher professionalism. For teachers who have passed the teacher professional test will be given a professional allowance of one time the basic salary as a form of government efforts to improve teacher welfare. Teachers who are already certified are required to take part in the Continuous Professional Development (PKB) program. Continuous Professional Development is the development of teacher competencies that are carried out according to needs, and continuously to improve their professionalism. Continuous professional development consists of self-development, scientific publications, and innovative work [5].

Based on [6], Continuous Professional Development is the development of teacher competencies carried out according to needs, gradually, continuously to improve their professionalism. Continuous professional development, including: (1) Self-development (functional training and collective activities of teachers that improve teacher competence and / or professionalism), (2) Scientific Publications (scientific publications on research results or innovative ideas in the field of formal education; and publication of textbooks, enrichment books, and teacher manuals), (3) Innovative Works (finding appropriate technology, inventing/creating works of art, create/modify learning tools/props/practicum and follow the development of standards, guidelines, questions and the like).

In essence, teachers must conduct scientific publications, carry out self-development and create innovative works. However, the reality on the ground with the improvement of teacher welfare, does not necessarily improve the quality of learning in schools. This is shown by the results of research conducted by [7] which states that the implementation and management of PKB in Surakarta Residency is still ineffective because it is seen from the achievement in scientific forum presentations by 13.2%, writing scientific publication articles by 7.5%, publishing textbooks by 22.6% and developing innovative works by 15.1%.

While research that has been conducted by [8] concludes that the scientific publications of Darul Hikam Junior High School teachers have been very high in compiling learning modules/diktats, it's just that the number of scientific publications based on research results and ISBN books is still categorized as sufficient. With data analysis and conditions in the field, this scientific publication training is aimed at Classroom Action Research (PTK). Thus, the continuous professional development of teachers through scientific publications still needs to be improved and needs attention both individually (teachers) and institutions, especially in scientific publications based on research results.

Research conducted by [9] on the analysis of professional teacher performance in Central Java shows that the Continuous Professional Development of junior high school mathematics teachers developed from the aspects of carrying out the main tasks, carrying out tasks outside the main duties and professional development obtained information of 20% including the very good category, 64% including the good category, and 16% including the sufficient category.

Based on the description as above, the problem that arises and will be studied in this study is how the Profile of Junior High School Mathematics Teachers is Viewed from Continuous Professional

Development. Thus, the purpose of this study can be formulated is to obtain an overview of the Profile of Junior High School Mathematics Teachers in terms of Continuous Professional Development.

RESEARCH METHODS

This research is a *descriptive-qualitative* research , namely research conducted using quantitative and qualitative approaches. The quantitative approach is carried out to collect quantitative data related to the variables to be measured, while the qualitative approach is carried out to describe the actual situation in the field (naturalistic) and the results of the analysis can be used as supporting data for the results of quantitative data analysis.

Based on research problems related to the profile of junior high school mathematics teachers in terms of Continuous Professional Development, the variables to be studied in this study are self-development, scientific publication competence and innovative work competence. The questionnaire method will be carried out by researchers through the principal by providing an assessment score based on the results of filling out the questionnaire on the competence of junior high school teachers in terms of Continuous Professional Development.

Population is a generalized area consisting of objects or subjects that have certain qualities and characteristics that are determined by researchers to be studied and then drawn conclusions [10]. The population in this study is public and private junior high schools in Semarang City. Sampling is done by means of *area random sampling*, in this sampling technique, it is done through two steps.

Quantitative data analysis techniques use descriptive statistics and qualitative data analysis techniques use descriptive-qualitative. The data analyzed quantitatively includes questionnaire data, observations and documentation. While qualitative data from various sources, triangulation techniques are carried out in order to obtain valid or credible information.

RESULTS AND DISCUSSION

Result

1. Self-Development

Quantitative data on Self-Development variables were obtained using a closed questionnaire

with a total of 17 statements. Each item has a minimum item score of 1 and a maximum of 4, so the score range of this variable is between 17 to 68. Thus this variable has a normative mean of 42.5 and a normative standard deviation value of 8.5. The results of research data analysis (empirical) of this variable are presented in Table 1. Based on Table 1, a score range of 21 to 68 was obtained, the measure of empirical data central tendency obtained an average value of 50.38, mode of 46.0, median of 47.0, and empirical standard deviation of 9.12.

Table 1.

Results of descriptive analysis of Self-Development variables and their Indicators

	workshop	Seminar	Scientific meetings	Other
Valid N	50	50	50	50
Missing	0	0	0	0
Mean	50.3800	32.5800	5.1600	12.6400
Median	47.0000	31.5000	6.0000	12.0000
Mode	46.00	30.00	6.00	11.00
Std. Deviation	9.12697	5.70030	1.55655	3.40923
Variance	83.302	32.493	2.423	11.623
Range	47.00	26.00	6.00	15.00
Minimum	21.00	14.00	2.00	5.00
Maximum	68.00	40.00	8.00	20.00
Sum	2519.00	1629.00	258.00	632.00

The tendency of the Self-Development variable data can be determined by comparing the empirical mean value with the normative average and the mode value. The results of the empirical average calculation of this variable were obtained 50.38 and the mode value was 46. This data shows that the empirical mean value is greater than the normative average value of 42.5. This data shows that the trend of quantitative data on self-development of junior high school mathematics teachers as a whole falls into the "good" category.
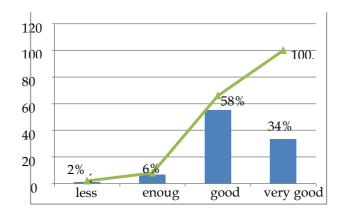
Figure 1. Pareto Graph of Tendency Data Self-Development Variables

The tendency of quantitative data on Self-Development can also be known through the categorical frequency distribution. The results of the categorical frequency distribution analysis of this variable can be seen in Appendix 4 point A2. Based on the categorical frequency distribution this can be presented in the form of a Pareto graph as shown in Figure 4.1. The figure shows the tendency of the self-development variables of junior high school math teachers by 34% to fall into the "very good" category, 58% to fall into the good category, and 6% to fall into the "sufficient" category and 2% to fall into the less category. Thus, the variable trend of Self-Development of junior high school mathematics teachers as a whole can be said to be mostly included in the "good" category.

In addition to quantitative data on mathematics teachers of Semarang City Junior High School, qualitative data were equipped with interviews with several schools and obtained the following results: junior high school mathematics teachers generally have a good willingness and motivation to participate in activities: workshops or group activities / teacher work deliberations or *inhousetraining* (IHT), attend seminars, colloquiums, panel discussions, or forms of scientific meetings, and other collective activities, Whether it is organized by schools or other agencies.

2. Scientific Publications

Quantitative data on the variables of Scientific Publications of Junior High School Mathematics Teachers after certification were obtained using a closed questionnaire with a total of 67 statements. Each item has a minimum item score of 1 and a maximum of 4, so the score range of this variable is between 67 to 268. Thus this variable has a normative mean of 167.5 and a normative standard deviation value of 33.5. Based on the data in Table 2, the results of research data analysis (empirical) on this variable obtained a score range of 112.0 to 266.0 measures of empirical data central tendency obtained an average value of 203.36, a mode of 173.0 median of 196.0 and empirical standard deviation of 34.25.

The tendency of variable data in Scientific Publications can be determined by comparing the empirical average value with the normative average and mode value. The results of the empirical average calculation of this variable were obtained 203.36 and the mode value was 173.0. This data shows that the empirical mean value is greater than the normative

mean value of 167.5. This data shows that the tendency of quantitative data for post-certification Junior High School Mathematics Teacher Scientific Publications is included in the "high" category.

Table 2.
Results of descriptive analysis of variables Scientific Publications and their Indicators

	Report	Paper	Popular Posts	Scientific Articles	Book Publication
Valid N	50	50	50	50	50
Missing	0	0	0	0	0
Mean	203.3600	106.8600	28.9800	44.9200	22.6000
Std. Error of Mean	4.84442	2.57080	.74969	1.11129	.64015
Median	196.0000	105.0000	28.5000	44.5000	22.0000
Mode	173.00	105.00	25.00	42.00	23.00
Std. Deviation	34.25520	18.17827	5.30110	7.85803	4.52657
Variance	1173.419	330.449	28.102	61.749	20.490
Range	154.00	86.00	26.00	25.00	19.00
Min	112.00	52.00	14.00	31.00	13.00
Max	266.00	138.00	40.00	56.00	32.00
Sum	10168.00	5343.00	1449.00	2246.00	1130.00

The trend of quantitative data in post-certification junior high school mathematics teacher scientific publications can also be known through the categorical frequency distribution. Based on the categorical frequency distribution this can be presented in the form of a Pareto graph as shown in Figure 2. Figure 2 shows the tendency of the Junior High School Mathematics Teacher Scientific Publication variables of 32% to fall into the "very good" category, 60% to fall into the good category, and 6% to fall into the "sufficient" category, and 2% to be in the "less" category. Thus, the tendency of the variables of Junior High School Mathematics Teacher Scientific Publications as a whole can be said to be mostly included in the "good" category.
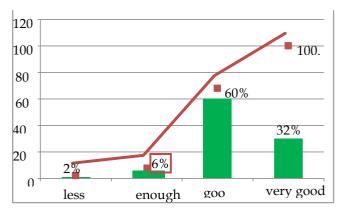
Figure 2. Pareto Graph of Trend of Variable Data of Scientific Publications

In addition to quantitative data from mathematics teachers of Semarang City Junior High School, qualitative data were completed from interviews with several schools and obtained the following results: most teachers are unable and unwilling to conduct classroom action research or write scientific articles. As a result, teachers are lacking in terms of creating: research reports, scientific review papers, popular scientific writings, scientific articles, and textbook publications.

3. Innovative Work

Data on the innovative work of junior high school mathematics teachers were obtained based on 6 statements from 45 statements. Thus, this indicator has a score range between 6 to 24, a normative average value of 15.0 and a normative standard deviation value of 3.0. The results of empirical data analysis of this indicator obtained a score range between 7 to 19, an average value of 12.68, a median of 12.0, a mode of 9.0 and a standard deviation of 3.77.

The trend of data on indicators of professional, personality and social development can be determined by comparing the empirical mean value with the normative mean value and the mode value. The results of the empirical average calculation of this indicator were obtained at 12.68 with a mode value of 9.0. This data shows that the empirical mean value of 12.68 is smaller than the normative average of 15.0 with a mode value of 9.0. Based on these data, it can be stated that the tendency of the data on the scientific work of junior high school mathematics teachers, as a whole, is included in the category of "sufficient".
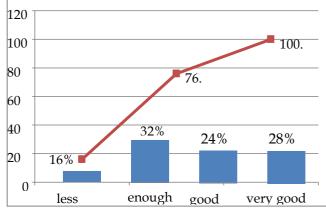

Figure 3. Pareto Graph Variable Data Tendency Innovative Works

Figure 3 above shows The trend of scientific work data of junior high school mathematics teachers, 28% is included in the "very good" category, 24% is included in the "good" category, 32% is included in the "sufficient" category, and 16% is included in the "less" category. Thus, the overall trend of scientific work data of post-certification junior high school mathematics teachers can be stated to be mostly included in the "sufficient" category.

In addition to quantitative data from mathematics teachers of Semarang City Junior High School, qualitative data from interviews with several schools were completed and the following results were obtained: some teachers were not interested in creating appropriate technology, less interested in making teaching aids / learning, especially IT-based learning media, and only a few teachers were involved in the UAS question development team and national exams.

Discussion

The results of descriptive analysis on the variables of self-development of junior high school mathematics teachers, obtained information that about 34% of aspects attend workshops or group activities/teacher work deliberations or *inhousetraining* (IHT), attending seminars, colloquiums, panel discussions, or other forms of scientific meetings, and other collective activities Included in the Very Good category, 58% are in the Good category, 6% are in the Sufficient category and 2% are in the Less category. This shows that most junior high school mathematics teachers in Semarang have experienced a change in their attitude at work as a result of obtaining a professional educator certificate. Most certified teacher educators have undergone changes in self-development.

Education in junior high school as part of the national education system is a professional institution. The school aims to shape students into adult human beings who has a mature and tough personality, who can be accounted for, responsible for society and for himself. Learners must be prepared through educational programs in schools. It is inevitable that the responsibility of the education of learners lies in the hands of the teachers. Therefore, teachers must be recognized as the same profession as other professions. Fostering pride in working among teachers encourages teacher militancy to be total in their work, eager to carry out their duties and functions efficiently and effectively. This is only possible if the position, function, and role of teachers are recognized as an honorable profession.

Based on data analysis extracted from various aspects, most (52%) educators have been encouraged to improve their competence and career, and the rest (48%) still need continuous coaching and empowerment to change to be more professional. This is in accordance with the results of interviews with several schools and it was found that junior high school mathematics teachers generally have a good willingness and motivation to participate in activities: workshops or group activities/teacher work deliberations or *inhousetraining* (IHT), attending seminars, colloquia, panel discussions, or other forms of scientific meetings, and other collective activities, Whether it is organized by schools or other agencies.

The results of a descriptive analysis of the variables of scientific publications of junior high school mathematics teachers, showed the tendency of the variables of Scientific Publications of Junior High School Mathematics Teachers by 32% included in the category of "very good", 60% included in the category of good, and 6% included in the category of "sufficient", and 2% included in the category of "less". Thus, the tendency of the variables of Junior High School Mathematics Teacher Scientific Publications as a whole can be said to be mostly included in the category of "sufficient".

This shows that there is still a gap between expectations and reality. It is undeniable that activities that include scientific publications are one of the activities that are rarely carried out by teachers. This fact shows that serious efforts are still needed to nurture and empower junior high school mathematics teachers.

Qualitative data from interviews with several school principals obtained the following results: most teachers are unable and unwilling to conduct classroom action research or write scientific articles. As a result, teachers are lacking in terms of creating: research reports, scientific review papers, popular scientific writings, scientific articles, and textbook publications. Thus, it is necessary to make a breakthrough so that teachers' interest in researching increases and the results of their research are made scientific articles, so that they become accustomed to publishing research works.

The results of a descriptive analysis of the variables of innovative work of post-certification junior high school mathematics teachers provide information that shows The trend of scientific work data of junior high school mathematics teachers, 28% is included in the "very good" category, 24% is included in the "good" category, 32% is included in the "sufficient" category, and 16% is included in the "less" category. Thus, the overall trend of scientific work data of post-certification junior high school mathematics teachers can be stated to be mostly included in the "sufficient" category. This means that teacher activities in innovating need to be improved, because the results of this activity are very useful in the learning process in the classroom and show the existence of the teacher himself.

This result is reinforced by the results of interviews obtained quantitative data, that mathematics teachers of Semarang City Junior High School, some teachers are not interested in creating appropriate technology, lack interest in making teaching aids / learning, especially IT-based learning media, and only a few teachers are involved in the UAS question development team and national exams. Thus, it appears that junior high school mathematics teachers need to be invited together through MGMP activities to practice making innovative learning media with the aim of learning mathematics more meaningful and liked by students.

COVER

Conclusion

Based on the description of the results of research and discussion, it can be concluded that the profile of junior high school teachers in Semarang City: (1) aspects of self-development, 58% of teachers have good willingness and

motivation to participate in this activity both organized by schools and other agencies, (2) in the aspect of scientific publications, 32% of teachers carry out scientific publications very well but most teachers still have difficulty conducting classroom action research and writing articles scientific, and (3) in the aspect of innovative work by 16% of teachers are not interested in making teaching aids, especially IT-based learning media.

Suggestion

It is necessary to coach and assist junior high school mathematics teachers to maximize the use of competency and career development. So that a teacher's career pattern is needed with clear and measurable compensation so that teachers are encouraged to perform more optimally. In addition, education and training are also needed for teachers to improve their professionalism in continuous professional development, especially in the aspects of scientific publications and innovative works.

BIBLIOGRAPHY

[1] Safitri, D., & Sos, S. (2019). *Eat professional guru*. Pt. Indragiri dot com.

[2] Helmi, J. (2015). Competence of teacher professionalism. *AL-ISHLAH: Journal of Education*, *7*(2), 318-336.

[3] Guru, A. P. (2019). Profesionalisme Guru. *Profesi Kependidikan*, 83.

[4] Rai, I. B. (2016). The relevance of Teacher Certification in increasing Work Motivation to welcome Continuous Professional Development. *Widya Accarya*, *5*(1).

[5] Puger, I. G. N., Yaniasti, N. L., Tjahyanti, L. P. A. S., Setiawan, G. D., Dewi, K. Y. F., Mudarya, N., &; Siswanti, D. (2020). CONTINUOUS PROFESSIONAL DEVELOPMENT THROUGH WRITING NON-FICTION BOOKS IN THE MONOGRAPH CATEGORY AT SMK NEGERI 2 SERIRIT. *Jnana Works*, *1*(01), 8.

[6] Regulation of the State Minister of State Apparatus Empowerment and Bureaucratic Reform number 16 of 2009 concerning Teachers' Functional Positions and Credit Scores.

[7] Anif, S. (2016). The effectiveness of the Post-Certification Biology Teacher Professional Competency Improvement Model Based on Continuous Professional Development (PKB) in Surakarta Residency.

[8] Rahyasih, Y., Hartini, N., &; Syarifah, L. S. (2020). Continuous professional development: An analysis of the training needs of scientific papers for teachers. *Journal of Educational Research*, *20*(1), 136-144.

[9] Rasiman, et al. 2017. Performance Analysis of Professional Teachers in Central Java. Semarang: UPGRIS.

[10] Sugiyono, D. (2013). Educational research methods quantitative, qualitative and R&D approaches.