The competence of teachers based on academic qualification and gender

M Marjon and K U Z Nugroho*

Universitas Bengkulu, Bengkulu, Indonesia

*nugrohoumam@gmail.com

Abstract. The study aims to determine the competency map of Bengkulu City Junior High School (SMP) teachers based on age, class and gender. This research is the research of Junior High School teachers in Bengkulu City. This study is a survey with a sample of 157 mathematics teachers at SMP Bengkulu City Year 2015. The result of this study is the level of Graduation for Bengkulu Junior High School teachers only 64.97% graduated, and 35.03% did not pass, it shows that the completeness of SMP Teacher competence in Bengkulu City has not been reached. The percentage of UKG graduation rate in 2015 for junior high school teachers in Bengkulu City when reviewed by sex is that the junior high school teacher in Bengkulu city has male gender as many as 63.83%, and female is 65.45%. The average score of SMP Teacher competence in Bengkulu City based on academic qualification (≤D3, D4 / S1 and S2) is 52.51; 58.84 and 69.21. This indicates that the average score of competence of teachers who have academic qualification of S2 has the highest score and the teacher who has the lowest D3 qualified has the lowest score, even under the passing grade that must be achieved.

1. Introduction

Various efforts to improve and develop the professionalism of teachers were doing by various parties, especially the government, but the achievement was not still satisfactory. In addition, there was a dissatisfied with the performance of teachers by society. The same thing was also reflected from the results of Teachers Competency Test (UKG) which was the result that teacher competence was low.

The fact on the ground indicated that various indicators of education quality had improved significantly [1]. Judging from the acquisition of national examinations from elementary school to high school was known had been low and did not experience significant improvement.

The efforts were sufficient for some projects had done to comply with a request of necessary by teachers for short term. There were no effective, efficient, productive, creative and innovative work implementation strategy in the Competency Founding Program and Teacher Professionalism. Especially at Bengkulu City, it was still education products and short training not continued. As a result, teachers were to pursue of salary than the essence of education and practice itself. This had been revealing by the low level of teacher UKG results from 2012 until now [1,2].

In addition, the results of Zhang’s research stated that teachers 'experience of teaching for years in science did not directly affect students' scientific achievements. However, science teachers have a higher degree in science or education significantly and positively influence students' scientific achievements [3]. Akpo and Jita found that teachers’ academic qualifications and subject specialisation had a significant and positive relationship with students’ academic achievement [4]. Teachers’ gender,
however, was not significantly related to students’ academic achievement. According to Alafiatayo, et. al. there significant relationships between the teacher variables [5], teacher quality [6] and students’ academic achievement. While, the teachers’ gender and qualification do not have any significant effects on students’ performance in Industrial Safety [7]. There is significant relationship between teachers’ competence and students’ academic performance [8]. But according to Jarrar Ahmad & Ahmad Khan, qualification does not affect the teaching competency of secondary school teacher [9].

According to Novauli, pedagogic competence is prioritized over the management of students by understanding the potential and diversity of learners, understanding the foundation and philosophy of education, being able to develop learning plans and strategies, using information from assessment and evaluation to design remedial and enrichment programs and not all teachers are able to carry out action research class [10]. Teachers are expected to have the ability to understand students, plan and implement learning, evaluate learning outcomes, and develop students to actualize their various potentials [11].

Personality competencies, among others, teachers appreciate the diversity of ethnicity and religion that each student adheres to and become an example that is honest, assertive, wise and able to maintain a good name [10]. Sutarmanto states that the provision of good services to achieve the expected results can be done if supported by human resources who have quality and expertise in their fields [12]. Quality and expertise refer to professionalism [13]. That is why the demands for professionalism in various fields today become something that can no longer be postponed, even becoming a demand to be implemented. Other competencies, social competence, teachers can communicate verbally and in writing, are able to interact effectively with students, fellow educators, educational staff, parents/guardians of students; and can hang out politely with the surrounding community [10]. Teachers as educators are the most decisive component in the quality of education, because in the hands of the teacher the curriculum is developed and applied [14].

Professional competence, according to Novauli and Rusdin the teacher has mastered the scientific substance related to the field of study, understands the teaching material in the school curriculum, understands the structure, concepts and scientific methods that shade or coherently with teaching material, develops professionalism in a sustainable manner by doing reflection and utilizing information technology and communication to develop themselves [10,15].

The UKG at 2015 should be following by all teachers in the position of both civil servant teachers and non-civil servants with the number of questions to be tested is 192 subjects / classroom teachers / skill packages / BK. UKG 2015 should do both online and offline. Online UKG implemented in areas that can access the internet, while offline UKG implemented in difficult areas or not have internet access such as in remote or remote areas [16]. The description above, Acquisition of UKG results on each teacher was part of the teacher performance assessment, therefore in accordance with the principle of professional teachers would follow the UKG on subjects in accordance with the educator's certificate and educational level that he received. In addition, the UKG results also used as a consideration of policy in the provision of training programs and development of the teacher profession as well as giving awards and appreciation to teachers. In addition to mapping the competence of teachers, UKG was also a form of control so that parents and learners get quality education services, build a quality culture among teachers, and ensure teacher's eligibility in performing tasks in accordance with predetermined standards. The teacher competency measure had set forth in the decision of the national education minister in 2003.

Based on the Decree of the Minister of National Education no. 232 / U / 2003 article 8, paragraph 1, the task of teachers was grouping into three parts, namely: teaching tasks, non-teaching tasks, and professional development tasks. The three parts of the task are expected to develop professional competence included: personality competence, social competence, pedagogical competence, and science competence. Teaching assignments included: 1) planning learning; 2) implementing learning; and 3) evaluating learning Non-teaching tasks include: 1) administering the administration; 2) carry out the supercool and extracurricular activities; and 3) provide guidance. The duties of professional development included: 1) conducting scientific writing / scientific works in the field of education; 2)
Professional competence is required in carrying out the role of teachers as scientists, learners, psychologists, and managers [17]. The demands of professional competence at 21st century Indonesian teachers were: 1) having a mature and developing personality; 2) strong mastery of science; 3) skills to arouse students' interest in science and technology, and 4) have the skills of continuously developing the profession [18].

Competent teachers are an important part of quality education in schools. Competent and professional teachers will never stop making innovations in learning with the form of developing innovative learning models. Learning outcomes of learners for science subjects is to prepare students who have skills or life skills.

Teacher competence becomes one of the measures of teacher professionalism in carrying out its duties and responsibilities. Based on Kemendikbud (2015) UKG had been conducting since 2012, especially for those who would follow the teacher certification. Beginning at 2015 this UKG would regularly conducted to measure the professionalism of teachers. The purpose of UKG was to know the level of individual teacher competence and teacher mastery map on pedagogic competence and professional competence. Thus, the implementation of UKG focused on identifying teacher weaknesses in mastering pedagogic and professional competence. UKG at 2015 had done by census or followed by all teachers in position, both civil servant teacher and non-civil servant. Total test subjects as many as 200 species, including subject / class teacher / skill package / Acquiring the results of the UKG on each teacher was part of the teacher performance assessment.

Based on the UKG Guidelines, the implementation of the UKG aimed to: 1) Obtain information about the teacher's competency picture, particularly pedagogical and professional competencies in accordance with predetermined standards. 2) Obtain a teacher competency map that will be a consideration in determining the type of education and training that teachers should follow in the program of teacher professional development and development in the form of sustainable professional development activities (PKB). 3) Obtaining the results of UKG which was part of the teacher performance assessment and will be the material consideration of policy formulation in giving appreciation and appreciation to the teacher.

The influence of school principals' competencies has a strong influence on teacher competencies, and teacher competencies also have a strong influence on national education standards [19]. While the most dominant indicator of the latent variable of principal competency is entrepreneurial competence, for latent variables teacher competence is personality competence, while for latent variables national education standards are standard facilities and infrastructure. Based on the previous description, we would like to write about the competence of Bengkulu City Junior High School teachers based on gender and teacher's academic qualifications.

2. Methods
Based on the purpose of this research, so the research was quantitative descriptive research. The population of this study were all teachers of SMP Kota Bengkulu, with a sample of 157 people selected at random. Sample selection was based on the level of school accreditation. The research instrument was the test of teacher competency test in the form of pedagogic ability test and professional ability test. Data were analyzed by descriptive statistics to determine the size of the central tendency and percentage.

3. Results and discussions
Based on the data of the research, the percentage of junior high school teacher graduation of Bengkulu City on the teacher competency test (UKG) of SMP in Bengkulu city, the percentage of the teacher's graduation can be presented in the following circle diagram (figure 1).
Figure 1. Diagram of graduation level of Bengkulu City Junior High School teachers based on UKG results.

Figure 1 showed that there were only 64.97% of junior high school teachers in Bengkulu who graduated, and 35.03% did not pass. By using the completeness criteria of Bengkulu City / Tuntas (Tuntas Group ≥ 85%), the diagram above showed that the completeness of SMP Teacher competence in Bengkulu City had not reached.

Based on data of SME result for Junior High School Teachers in Bengkulu City can be analyzed and presented in descriptive statistic table 2 about competency map based on Academic Qualification as followed.

Figure 2. Average graph of Junior High School Teacher competence based on academic qualification.
Based on figure 2, the average score of SMP Teacher competence in Bengkulu City was reviewed based on academic qualification (≤D3, D4 / S1 and S2) is 52.51; 58.84 and 69.21. The average score of pedagogic competence score based on academic qualification (≤D3, D4 / S1 and S2) was 48.94; 57.84 and 64.82, and the average professional competency score reviewed based on academic qualifications (≤D3, D4 / S1 and S2) was 54.05, respectively; 59.26 and 71.10. This indicates that the average score of SMP Teacher competence in Bengkulu City reviewed based on academic qualification (≤D3, D4 / S1 and S2) had fulfilled the minimum graduation criterion (score ≥ 55) for SMP teacher of Bengkulu D4 / S1 and S2, teachers who were qualified for D3 below the average UKG score under the passing grade of graduation. When considered the average score of SMP Teacher competence in Bengkulu City, teachers with S2-qualified academic had the highest score and the D3-qualified teachers had the lowest score, even under the passing grade to be passed.

Data score results of UKG at 2015, can be calculated statistic competence score of Junior High School teachers in Bengkulu City was reviewed by gender. The results of SMG mathematics SMG score data analysis in Kota Bengkulu viewed based on gender can be presented in the table 1.

| Type of Statistics | Pedagogic | Professional | Whole |
|--------------------|-----------|--------------|-------|
|                    | Man       | Women        | Man   | Women | Man   | Women |
| Minimum            | 24.69     | 18.52        | 23.81 | 21.16 | 25.93 | 20.37 |
| Maximum            | 92.59     | 92.59        | 92.59 | 87.3  | 90.74 | 85.19 |
| Average            | 58.58     | 57.41        | 60.90 | 59.62 | 60.21 | 58.96 |
| Standard Deviation | 16.07     | 15.18        | 16.52 | 14.47 | 15.08 | 12.96 |
| Median             | 61.73     | 55.56        | 60.85 | 60.85 | 59.26 | 57.41 |
| Mode               | 67.9      | 67.9         | 55.56 | 60.85 | 75.93 | 57.41 |

Table 1 the SMP Teacher Competency Score Statistic in Bengkulu City was review by gender, summarizes of the statistical data of teacher's UKG score in Bengkulu City. Based on the table 1, it can be specified one by one based on the above statistical type in the figure 3 as followed:

Description: Series 1: Male  
Series 2: Women  
1. Pedagogic Competence  
2. Professional Competence  
3. Overall Competence (Pedagogical and Professional)

**Figure 3.** Graph of minimum teacher competency score of Bengkulu City based on gender.
Teachers in Bengkulu City in terms of male and female gender were 25.93 and 20.37 respectively. The minimum scores of pedagogical competency scores in terms of male and female gender were 24.69 and 18.52, respectively, and the minimum scores of professional competencies reviewed by male and female were 23.81 and 21.16, respectively. This indicates that the minimum competency score of Junior High School teachers in Bengkulu City was reviewed based on male and female gender respectively still equally well below the minimum criteria of graduation (score ≥55). However, when considered minimum score of SMP Teacher competence in Bengkulu City, male teacher had a higher minimum score when compared with female teacher that was difference of score equal to 5.56.

Furthermore, can be presented Competency Score Maximum Teachers SMP Kota Bengkulu reviewed by gender in the figure 4 below.

![Graph of competency score maximum teacher of Bengkulu City Junior High School based on gender.](image)

Description: Series 1: Male (n1 = 47)  
Series 2: Female (n2 = 110)  
1. Pedagogic Competence  
2. Professional Competence  
3. Overall Competence (Pedagogical and Professional)

**Figure 4.** Graph of competency score maximum teacher of Bengkulu City Junior High School based on gender.

Based on Figure 4, it is showed that the maximum competency score of Junior High School Teachers in Bengkulu City was review based on gender of men and women were 90.74 and 85.19. The details of the maximum scores of pedagogic competencies reviewed by gender of men and women were 92.59 and 92.59, respectively, and the maximum scores of professional competencies reviewed by gender of men and women were 92.59 and 87.30, respectively. This indicates that the maximum score of SMP Teacher competence in Bengkulu City was review based on gender of male and female had filled the minimum graduation criterion (score ≥55). When the graph was considering, the maximum score of SMP Teacher competence in Bengkulu City, the gender of male teacher had a higher maximum score when compared with female teacher that was the difference of 4.55.

Furthermore, can be presented Graph of Average Score Competence Teachers SMP Kota Bengkulu reviewed by gender in the figure 5 below.
Series 1: Male (n1 = 47)
Series 2: Female (n2 = 110)

1. Pedagogic Competence
2. Professional Competence
3. Overall Competence (Pedagogical and Professional)

**Figure 5.** Graph of average score of teacher competence of SMP Kota Bengkulu by sex.

Based on figure 5, it can be seen that the means scores of SMP Teacher's competency in Kota Bengkulu based on gender of male and female were 60.21 and 58.96, respectively. The means scores of pedagogic competence scores in terms of male and female were 58.58 and 57.41, respectively, and the means of professional competence scores reviewed by gender of men and women were 60.90 and 59.62, respectively. This indicated that the average score of Junior High School teacher competence in Bengkulu City was review based on gender of male and female had filled the minimum graduation criterion (score ≥55). However, when considered the average score of SMP Teacher competence in Kota Bengkulu, male teachers had higher means score than female teacher that was difference of score equal to 1.25.

Furthermore, can be presented Graph Median Competency Score Teachers SMP Kota Bengkulu reviewed by gender in the figure 6.

**Figure 6.** Median graph competency score teacher of SMP Kota Bengkulu by sex.
Based on figure 6, the median competence score of Junior High School teachers in Kota Bengkulu based on gender of male and female were 59.26 and 57.41, respectively. The median score of pedagogical competence score based on male and female gender were 61.73 and 55.56, respectively, and the median professional competence score based on male and female gender were 60.85 and 60.85. This indicated that the median competence score of Junior High School teachers in Bengkulu City meets the minimum graduation criteria (score ≥55).

The results of this study support previous studies, such as the lowest mathematics teacher competency is in Professional Competence, that is approximately 30% of teachers are not good [20]. This is influenced by other components. The principal has a strong influence on teacher competence [11]. Therefore, the principal must provide a good example to the teacher. The attention of the principal is needed to motivate the teacher in carrying out the task. Because there are still teachers who are less competent and less motivated to achieve good performance [15,21]. Therefore the headmaster must change the time for professional training for teachers [22].

4. Conclusion
Based on the results of data analysis as outlined in the previous chapter and the quantitative description exposed above, it can be concluded as followed. Graduation rate of SMP for Bengkulu Junior High School teachers only 64.97 % graduated, and there were 35.03 % who did not pass, it showed that the completeness of SMP Teacher competence in Bengkulu City had not reached. The percentage of UKG graduation rate in 2015 for junior high school teachers in Bengkulu City when reviewed by gender that the junior high school teacher in Bengkulu city had male gender was 63.83%, and female was 65.45%, this means female teacher was slightly more superior ie 1.62%. The average score of SMP Teacher competence in Bengkulu City based on academic qualification (≤D3, D4 / S1 and S2) was 52.51; 58.84 and 69.21 .This indicated that the average score of competence of teachers who was academic qualification of S2 had the highest score and the teacher who was the lowest D3 qualified had the lowest score, even under the passing grade to be passed.

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