Quality of the Skill Skill Instrument Install Brick Based on the Indonesian National Qualification Framework (KKNI)

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Abstracts. In the development of the current world of construction, mastery of competencies is the most important thing that every artisan must have in carrying out his work. To measure the competence of the artisan, an instrument is needed. The instrument used can be used as a reference for evaluating competencies that are by the standards and conditions in the field which later can help create artisan who is qualified and able to keep abreast of the developments that occur in the world of construction today. This study aims to determine whether the existing brick installation work instruments are by the standards and needs in the field. This study uses qualitative methods with data collection techniques in the form of questionnaires aimed at experts to obtain expert recognition or justification of existing instruments. From the results of the study, according to the expert justification, it was found that there were several items of masonry work that were rarely used and not including core work or more precisely the work was only done if there were orders from owners and valuation methods that were considered less objective in assessing job competencies brick couple. The benefits of this research can be a reference in developing brick installation work instruments.

Keywords: competence, instruments, masonry

Introduction

The development of the current construction world, which is accompanied by various advances from all parts of the work requires new competencies for the construction workforce [1]. Competencies are considered to represent a combination of knowledge, attitudes, and skills [2]. In line with the previous opinion, according to [3], the understanding of the concept of competence is currently very broad. This implies concepts such as ability, behavior, activity, or even complex operations. These components must then be reflected in the performance of workers in the construction project area. So, competencies must be owned by every workforce because it will have an impact on the way they carry out and respond to the work.

Aspects of knowledge, attitudes, and skills are related to the performance of the construction workforce. Knowledge aspects illustrate how the personal characteristics and characteristics of the construction workforce. If it has been described from how the characteristics and characteristics also affect the skills possessed by the workforce. If the skills of the workforce are good, the work attitude is also good. Therefore, construction workers must understand and apply existing competency standards because the impact will affect the implementation of work. For now, the applicable labor competency standard reference is contained in the Indonesian National Work Competency Standards (SKKNI) in which there is a formulation of work capabilities that includes aspects of knowledge, skills and work attitudes that are relevant to the implementation and position requirements set by regulatory provisions current regulation.

However, there are still many construction workers who are still lacking in terms of mastery of competencies. Based on data from the Central Statistics Agency (BPS) the number of experts is 10%, skilled workers are 30%, and non-skilled workers are 60%. When described by the education of elementary school to college, the composition of the largest construction workforce in Indonesia is unskilled/rough labor, which is around 76%.
The unskilled labor education in junior high school and elementary school; some even do not complete elementary school while the education of skilled labor namely high school and vocational school amounts to 21% and the last is experts only 3% - 4% only [4]. The following is the level of construction workforce based on the level of qualifications:

![Figure 1 Level of employment qualifications based on their education](image)

The conclusion obtained is that skilled workers such as carpenters are required to have competencies that are equivalent to the competence of vocational graduates and also adapted to the needs of the current construction industry. For unskilled laborers, they must follow competency equivalents so that they do not lag behind the competencies possessed by skilled workers. To help the unskilled laborers get equalization, competency guidelines such as instruments are needed which can be a reference for competency measurement and include existing competency standards and have also been adjusted to the conditions in the field.

An instrument is a tool used to collect data that functions to measure the achievement of employee competencies [5]. Instruments are needed to measure the level of mastery of the competence of construction workers by going through the assessment process [6]. Assessment techniques cannot be separated from the instruments used, and the aspects assessed to collect information related to success by the competencies mastered. In this study, the focus of the work chosen was masonry work.

Masonry work is work that goes into the structural work section. Brickwork is a job on a construction project that has a large volume of work and a large number of workers [7]. In the past, the material used for wall mounting was made of clay which was burned while in the present day for wall installation the material used was AAC block or light brick [8].

This study aims to determine whether the current instruments have included the existing competency standards and adapted to the conditions in the field in measuring the competence of bricklayers. Therefore, there is a need for severe justification from experts on the instrument.

Competence

Competence is the inner part and forever exists in one's personality and can predict behavior and performance widely in all situations and job tasks [9]. One of the factors that can improve performance in construction projects is the competence of workers in construction projects [10]. The competencies that must be possessed by every workforce are listed in the SKKNI (Indonesian National Work Competency Standards) which is a formulation of work capabilities that are relevant to the implementation of duties and job requirements set by the provisions of applicable laws (www.kemenperin.go.id).

Vocational School (SMK)

Vocational School (SMK) is a secondary education that prepares students primarily to work in certain fields [11]. In line with the previous opinion, Vocational School (SMK) is one of the institutional models whose purpose is to prepare students to enter the workforce and prepare students to be able to compete and develop themselves [12]. In an era that relies heavily on technology as it is today, SMK graduates must have the main competency, namely: knowledge, professional skills, functional skills, mastering skills in their fields, business attitudes, willingness to develop their abilities [13].

Research Methods

The method used in this study is a qualitative method with data collection techniques using questionnaires addressed to experts to obtain justification for brick installers. The form of the questionnaire is in the form of a checklist with three choices of answers, which are "appropriate," "inappropriate," and "according to improvement." For experts consists of three...
people, namely two material experts and one instrument expert.

**Results and Discussion**

From the results of the research obtained, instrument experts concluded that the overall instrument was in the appropriate category, but there was input from him for performance tests should use a rating scale because it can provide a more objective assessment and have clear assessment criteria. While the opinion of one of the material experts regarding several items of work that are rarely applied in the field such as the installation of curved bricks and installation of decorative bricks. The work will be done if the owner wants to add the installation of curved bricks and decorative bricks to the construction project work. While the opinion of the second material expert has the same opinion as to the opinion of the first material expert. But there is a little extra from him, for the competency of vocational students, it is better if the installation points for arches and decorative bricks are still included, which later can help develop the creative abilities of vocational students.

Explanation related to the opinions of instrument experts, to measure the skills of skilled workers and can strengthen the results later is to use performance tests. Performance tests are commonly used to assess the skills of skilled workers [14]. Performance tests have advantages, namely: 1. Able to measure learning outcomes that cannot be measured by other measuring instruments and 2. Give a more objective assessment [15]. In addition to using a performance test, the expert also added to use the rubric as a guideline for assessment. Rubrics are a mixture of assessments that describe the criteria of teachers in assessing [16]. The benefit of using rubrics in assessments is to provide information about the weight of the assessment, to explain the task description, and to make the assessment more objective and consistent [17]. The following are examples of rating rubrics:

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>The score of 5 is the maximum score of the assessment rubric that shows an excellent understanding of the assessment criteria or task description</td>
</tr>
<tr>
<td>4</td>
<td>Score 4 is the maximum score of the assessment rubric that shows a good understanding of the assessment criteria or task description</td>
</tr>
<tr>
<td>3</td>
<td>The score of 3 is a maximum score from an assessment rubric that shows sufficient understanding regarding assessment criteria or task descriptions</td>
</tr>
<tr>
<td>2</td>
<td>Score 2 is the maximum score of the assessment rubric that shows a poor understanding of the assessment criteria or task description</td>
</tr>
<tr>
<td>1</td>
<td>Score 1 is the maximum score of the assessment rubric that shows understanding that is not at all good regarding the assessment criteria or task description</td>
</tr>
</tbody>
</table>

In the table above, the rubric uses a specific scoring system using a scale as an achievement obtained with conformity stated in the scoring guidelines or commonly called a rating scale. Rating Scale is the value of collecting data translated into sentences [18]. Its use in the instrument can help for the assessment process, and the assessor can find out the achievement of competencies from the scores obtained.

The first material expert has qualifications as a Site Operational Manager (SOM) who has been in the construction world for almost ten years. Based on his assessment, there were several items of work which he considered were not included in the core work of brick installation. The work is in the installation of decorative bricks and curved bricks. There are more additions related to the installation of glass blocks, but the work is still included in the core work because the installation of glass panels can be done if the facade is installed. He also shared information regarding the bricks used today, which are lightweight bricks that have various sizes, some of which are 7.5, 10, 12.5, and 20. For light brick spacing between 3mm - 4mm. Another addition is the installation of elbow walls is not used anymore because in the work part of the installation of brick elbow wall work has been replaced with the role of fixed columns and practical columns. Another matter conveyed by the first material expert is related to the composition of materials in making mortar, for the composition of the main ingredients the mortar maker uses
only the composition of materials such as cement, sand, and also water and usually mortar for building work is not made directly in the location but made specifically mortar is different from the case of making mortar in a housing project that is made directly at the job site. Comparison of the composition of materials used to make mortar, especially for the composition of cement and sand is one cement: 4 sand.

The second material expert also agreed with what was stated by the first material expert; the second material expert was a vocational school teacher who taught the basics of building construction. He also knows the basic competencies found in building vocational students. The application of competencies found in Building Vocational Schools is not merely about working and making but also followed by the skills of the students. As his opinion, he said that the work on the construction of curved bricks and decorative bricks if connected with the competencies in the Building Vocational School could be added because the work not only tested their abilities but also the students' skills in making arches and decorative bricks.

Conclusion

This study concludes that the masonry work instrument used as a reference in testing the artisan competency cannot be said to be relevant because there are still some jobs that have not adjusted to the reality in the field and the skills used are still not equivalent to the competencies in Building Vocational Schools. Even for the assessment, there are still some shortcomings, including the assessment criteria that are still unclear and cause in the evaluation to be not objective and consistent. Therefore, it is necessary to develop masonry work instruments that can adapt to these deficiencies.

References


