

## Development of an Instrument for Assessment of the Implementation of Basic Teaching Skills for Mathematics Teachers

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### Abstract

*This study aims to produce an instrument for assessing the implementation of teaching skills of Mathematics Teachers in cluster 5 of Boawae sub-district. This research is classified into the type of research & development (R&D). Data collection techniques using questionnaire and interview methods. All data that has been obtained is analyzed descriptively qualitative. The subjects in this study were teachers in cluster 5 of Boawae sub-district totalling 6 people. The outputs of this research are (1) An assessment instrument is produced in the form of an instrument of eight basic teaching skills for teachers in schools, (2) Based on the expert test related to the assessment instrument that has been developed, it meets the valid and practical criteria.*

**Keywords:** Teaching skilss, teacher, mathematics.

## INTRODUCTION

Great Dictionary of the Indonesian Language it is explained that skill or proficiency is the ability to complete a task (Nasihudin and Hariyadin, 2021). In general, it can be said that skill is an ability that exists in a person that is obtained from various exercises and also from the learning process. Teaching skills are actually a form of manifestation of an educator's abilities as a professional (Frasetyana et al., 2015). Thus, it can be said that teacher teaching skills are a set of abilities of an educator in an effort to train or guide all activities and related experiences of a person and help him to develop and adapt to the surrounding environment.

Basic teaching skills are very basic which must be carried out by teachers and prospective teachers when teaching (Mansyur, n.d.). As a professional educator, in teaching activities you must pay full attention to two main abilities, namely, a) mastering the material or teaching materials that will be given to students in class, b) fully mastering the methodology or how to teach it. Teaching activities are not only about delivering material, they are also related to broader aspects such as mental development, character, emotions, as well as habits and values in everyday life.

Basic teaching skills are generic so they must be mastered by every educator. There are eight basic skills that every educator or prospective educator must master as a concrete form of the process of presenting material in class. These eight teaching skills are mandatory requirements for all educators in successful teaching and learning activities in schools or educational institutions (Kristiana & Muhibbin, 2019). Each teaching skill has its own components and basic principles. This is supported by research conducted by (Jatmiko, 2018) taking the title research on developing an Authentic Curriculum 2013 assessment instrument for affective aspects in class VII PAI subjects at SMPN 3 Kalasan with the resulting instrument suitable for use. Basic teaching skills for an educator are a benchmark for success in learning (Armayanti, 2021). So that in the end there can be interaction between teachers and students and vice versa which will have an impact on the success of both

students and teachers. In carrying out their duties as agents of change, teachers are not only teachers, but teachers can also educate, guide, direct, train, assess and evaluate all students in a targeted manner (Rahman, et al, 2013).

Based on interviews with teachers in cluster 5 of Boawae District, the implementation of teachers' teaching skills is still low because some schools have not fully implemented teaching skills, one of which is the skill of providing reinforcement and the skill of making stimulus variations.

Teacher teaching skills are one of the competencies that every professional teacher must have. Professional teachers are a determining factor in a quality education process (Febriyanti & Seruni, 2008). The requirements for becoming a professional teacher are being able to find one's own identity and having the ability to actualize oneself according to the abilities and rules to become a professional teacher (Nasution, 2015). To test the implementation in schools regarding teaching skills, it is necessary to create an instrument that can be used as a guide for teachers in schools. Based on the problems above, an assessment instrument was developed regarding the implementation of basic teaching skills for teachers in cluster 5 of Boawae sub-district. The aim of this research is to produce an assessment instrument that is able to increase the professionalism of teachers and determine the teaching abilities of teachers in cluster 5 of Boawae District.

## METHOD

This type of research is research and development (R&D) with the development model used modified from Dick & Carey's (1990) design which consists of nine steps, namely, (1) identifying general learning objectives, (2) analyzing learning, (3) identifying behavior and characteristics, (4) formulating performance objectives, (5) developing assessments, (6) developing learning strategies, (7) developing assessment instruments, (8) designing and implementing formative evaluations, (9) revising assessment instruments (Setyawan & El Hakim, 2023).

The assessment instrument developed was tested by 1 content expert. This aims to obtain assessments, suggestions and opinions regarding the validation of the content of the assessment instruments that have been developed. The subjects in this research are 6 teachers in cluster 5 of Boawae District who will provide a number of important information related to the data that will be needed in developing assessment instruments related to the implementation of basic teaching skills. The data collection technique used in this research used a questionnaire. All instruments developed are declared valid if they meet the criteria as in the following table.

**Table 1.** Criteria for valid instruments

Instrument validity score	Validity criteria
$SV > 4,2$	Very Valid
$3,4 \leq SV \leq 4,2$	Valid
$2,6 \leq SV < 3,4$	Enough
$1,8 \leq SV < 2,6$	Invalid
$SV > 1,8$	Very Invalid

(Wewe & Bhoke, 2022)

Meanwhile, to test the level of practicality of the instrument used, it was obtained through a teacher response questionnaire with the following practicality criteria.

**Table 2.** Practicality Criteria

Instrument practicality score	Instrument practicality criteria
$SV > 4,2$	Very Practical
$3,4 \leq SV \leq 4,2$	Practical
$2,6 \leq SV < 3,4$	Quite Practical
$1,8 \leq SV < 2,6$	Impractical
$SV < 1,8$	Very Impractical

(Wewe & Bhoke, 2022)

## RESULT AND DISCUSSION

Each teacher's teaching skills are necessary and important to apply during learning activities (KBM) in order to help students, understand and understand and be able to think critically in solving problems given by the teacher and have an impact on satisfactory learning outcomes or can achieve KKM (Minimum Completeness Criteria). To support success in a class, the teacher as the main actor needs to prepare learning tools. Apart from that, the teacher needs to pay attention to basic teaching skills so that all material can be presented/transferred well to students (Mansyur, n.d.). All instruments of the eight basic teaching skills must be possessed by teachers who have served in schools. There are eight basic teaching skills instruments used including (1) basic asking skills assessment instrument, (2) reinforcement skills assessment instrument (3) variation-making skills assessment instrument (4) explanation skills assessment instrument (5) opening and closing skills assessment instrument lesson (6) small group leadership skills assessment instrument (7) classroom management skills assessment instrument (8) small group and individual teaching skills assessment instrument.

All instruments developed have responded to the needs of mathematics teachers in Cluster 5, Boawae District. There are several factors that influence teachers in applying basic teaching skills, namely internal factors and external factors. Internal factors are factors that come from within a teacher that influence teaching skills. Internal factors that influence a teacher's teaching skills include educational background, personality, class management, teaching experience, awareness of time.

The next factor is external factors. External factors are factors that come from outside which also influence the teacher's teaching skills. There are two external factors that influence the teaching skills of teachers in cluster 5 of Boawae District. Factors that influence teachers' teaching skills include the school environment, student characteristics, and learning facilities. In general, the school environment is a trigger for a teacher's lack of teaching skills, namely the first and foremost is the classroom. This makes teachers less comfortable in providing material and less comfortable studying in class. Second, the rare number of students attending school means that teachers also rarely go to school (Mulyana et al., 2022).

Student characteristics are often the trigger for a teacher's low teaching skills, where schools in the 5 Boawae sub-district groups have students who have different characteristics. Next, learning facilities are also a trigger for low teaching skills, where the school only has a few books as a guide for teaching, and the school or environment does not have an internet access network, making it difficult for teachers to find learning references. As a basis for the assessment instrument being developed, experts are needed as a form of testing the instrument that has been prepared. an average of 55 was obtained, so it can be said that the instrument developed is in the valid category. All instruments developed have answered all the needs of teachers in schools. Teachers at school need to have basic teaching skills so they can carry out all school tasks effectively and professionally (Payu, 2016). Meanwhile, from the practical aspect, based on the results of trials on 6 teachers in cluster 5 of Boawae sub-district with an average of 4.0 in the practical category. This shows that the instrument developed is in accordance with the needs of teachers in schools. For teachers to continue to apply the

eight basic teaching skills well in the classroom so that they can provide good results for students in the class.

## CONCLUSIONS AND SUGGESTIONS

Based on the research results, it can be concluded that: (1) the instrument developed is valid for use, obtained from a content expert test with an average of 55 in the very valid category. Meanwhile, to test the level of practicality of 6 teachers in Boawae sub-district, an average of 4.0 was obtained in the practical category. This shows that teachers' teaching skills are very important to apply during learning activities in order to help students understand and be able to think critically in solving problems given by the teacher and have an impact on satisfactory learning outcomes. (2) The current classroom management system is very important to implement in teaching and learning activities so that learning runs more effectively and interestingly. (3) The classroom must be arranged in an attractive way so that students feel at home in receiving the material provided. Hopefully the results of this research can be input for teachers and prospective teachers so they can apply basic teaching skills well in the classroom.

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