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A review aspects *pedagogical knowledge* for perservice teacher

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Abstract. Teaching is a case that contains many components that must be mastered by teachers such as students, classrooms, media, resources and teaching materials that must be managed in such a way as to help students achieve goals. Pedagogical Content Knowledge known as one of the competencies required of a teacher, along with professional competence, social and personality, which cannot be ignored if a teacher wants to build students' complete understanding of the subject content material. Without a pedagogical content knowledge, teacher might simply transferring knowledge of the subject matter without giving a chance to students to build knowledge and encourage them to think correctly by themselves. The purpose of this study is to formulate aspects of pedagogical knowledge that can be used to measure the pre-service teacher pedagogical knowledge that can be used in preparation for teaching and learning process in class. This study discusses the results of researches related to the prospective teachers' pedagogical knowledge. This research is a study of literature in which the sources of data obtained from the results of researches and supported references then analyzed by descriptive qualitative. This study concluded that there are five aspects of pedagogical knowledge that can be used for the assessment of pre-service teachers.

Keywords: Pedagogical knowledge and Preservice Teacher

1. Introduction

Pedagogy means ways to help students learn and solve problems in science (Enfield, 2007: 76). Pedagogical Knowledge describes the "general purpose" of a unique teaching knowledge which is also part of the Pedagogical Content Knowledge component. Pedagogical Content Knowledge consists of two components, namely Pedagogical Knowledge and Content Knowledge. The mastery of Pedagogical Knowledge mainly mastery learning strategy become an important part especially mastery learning strategy stressing the involvement of students in exploring knowledge independently and considering the characteristics of students (Arnyana, 2007).

Based on statement above, there are several major components of various models of the pedagogical knowledge in general is discussed in the following table:

Table 1. The main components of various models of general pedagogical knowledge

Pedagogical components	Psychological components
<i>Knowledge of classroom management:</i> optimizing the quantity of instructional time, handling classroom events, teaching at a steady pace and maintaining a clear direction in lessons;	<i>Knowledge of learning processes:</i> supporting and fostering individual learning progress by having knowledge of various cognitive and motivational learning processes (e.g. learning strategies, impact of prior knowledge, effects and quality characteristics of praise, etc);
<i>Knowledge of teaching methods:</i> having a command of various teaching methods, knowing when and how to apply each method;	<i>Knowledge of individual student characteristics:</i> having knowledge of the sources of student cognitive, motivational, and emotional heterogeneity.
<i>Knowledge of classroom assessment:</i> knowing different forms and purposes of formative and summative assessments, having knowledge of how different frames of reference (eg, social, individual, criterion-based) can impact students' motivation;	
<i>Structure:</i> structuring of learning objectives and the lesson process, lesson planning and evaluation	
<i>Adaptivity:</i> dealing with heterogeneous learning groups in the classroom	

Based on Voss, Kunter and Baumert (2011) and König et al., (2011)

In teaching and learning process, *pedagogical knowledge* is considered as deep knowledge of processes and practices, including the overall educational goals. *Pedagogical knowledge* important embedded in student teachers in order to prepare and equip student teachers to be able to manage learning with a tub. It supported the statement Fadlan (2010) that in connection with pedagogical competence necessary efforts systematically to develop the skills of teachers in managing learning well, designing learning activities to carry out the evaluation and improvement of learning that can be done through various training *workshops* and assistance to set up the ability of candidates teachers in managing learning. Besides, without a teacher pedagogical content knowledge, it is difficult for students to understand and construct a new knowledge with previously obtained knowledge. This is because teachers do not do planning in terms represent an idea, and use its best efforts to make the analogy, illustrating, explaining and demonstrate or in other words to make a best way to represent and formulate a subject so make it into something that can be understood as a comprehensive.

Based on the statements mentioned above, the concern of this research can be formulated to specific aspects that include pedagogical knowledge of some reference study of theory in research journals and other supporting references.

2. Research Methods

The method used in the study is a literature review that was obtained from research journals and supporting references and got analyzed by descriptive qualitative.

3. Result and Discussion

According to Shulman (1987: 8) *Pedagogical Knowledge* is knowledge of teachers who describe general knowledge with special reference to the principles of comprehensive and classroom management strategies and organizations that appear to address the subject matter knowledge.

The concept of pedagogical knowledge has been given short shrift in most discussions of Shulman's (1987) models of teacher knowledge. Shulman himself seems to limit the parameters of pedagogical knowledge in presenting his initial set of Categories of teacher knowledge, describing the category only

3.1 Learning Process

According to Hughes, Toohey and Hatherley (1992), knowledge of the learning process is the current knowledge of the interaction of teaching activities to build a learning experience that consists of preliminary stages, gain more knowledge, try out ideas, feedback and reflection. A wide variety of teaching techniques to choose from, ranging from lectures or tutorials to small group discussions, role playing, group or individual projects, brainstorming, oral presentations, problem solving activities, debates, etc. According to Winkel (1991: 200) the learning process is a psychic or mental activity that takes place in an active interaction in the environment, which resulted in changes in knowledge, understanding, skills and value attitudes. So it can be concluded that the learning process is the activity achieve learning goals through interaction with doing the stages of learning strategies, reinforcement as a learning experience.

3.2 Student Characteristics

According Piuas Partanto, Dahlan (1994), characteristics derived from the character with a sense of nature (character), traits or habits that are owned by individuals who are relatively fixed. According to Sudirman (1990), characteristics of the students is the overall pattern of behavior and capability in students as a result of the nature of the social environment that determine the pattern of activity in achieving its goals. consists of several aspects: physical, intellectual aspects, social aspects, aspects of the psychosocial and aspects of the cognitive perspective.

In the planning of learning (instructional design), Dick and Carey (1985) suggested that the identification of the characteristics of the students is very important because it has implications for instructional development process. Santrock (2007) suggests there are five main factors that affect personality, namely: (1) Openness to experience, (2) Precautions (Conscientiousness), (3) extraversion, (4) The sensitivity of conscience (Agreeableness) and (5) emotional Stability (Neuroticism). It can be concluded that the knowledge of the characteristics of learners is the process of development of cognitive skills and increased motivation as a result of teaching in order to achieve the learning objectives.

3.3 Classroom assessment

Popham (1995: 3) defines assessment in the context of education as a formal effort to determine the student's status with respect to various educational interests. According to (Stark & Thomas, 1994: 46) assessment as a process that provides information about students, curriculum or program, and everything to do with the institutional system.

Objective assessment in the classroom by teachers should be directed at several things to explore in order to keep students learning process in accordance with the plan, to check there any disadvantages experienced by students in the learning process, to conclude whether the student has achieved the competencies that are set or not.

Based on the above definition can be concluded that the knowledge of classroom assessment is the teacher's knowledge about making formative/ summative, evaluation and lesson planning in a systematic, comprehensive, continuous and objective. There are several criteria that can be used for classroom assessment, namely conformity with the competence to be developed, the desired conditions of teaching and learning, clarity of formulation, mainly includes the activity of teachers and students in the learning process, the possibility of adherence to the conditions and the time allocation there.

3.4 Knowledge of teaching methods

This method used to implement the method that has been prepared in concrete activities that have been prepared for the purpose of optimally achieved (Sanjaya, 2008). According Sudjana (2005:) kinds of learning methods include

- a. tutorials methods (learning management is done through a process of guidance)
- b. demonstration method (learning management by demonstrating or showing a process, situation, object, or ways of working),

- c. the method of debate (improving academic skills of students
- d. role playing methods (how mastery learning materials through the development of imagination and appreciation) and methods of problem solving.

So the teaching method is the use of various methods of learning knowledge that relevant to achieving the learning objectives that consists of applying various methods of teaching and knowing when and how to implement each of these methods.

3.5 Knowledge of classroom management

According to Ambarita (2006), classroom management can be described as the process of organizing and coordinating the learners to complete educational goals. Another opinion expressed by Sardiman (2011), classroom management is described as providing conditions conducive to the process of learning, therefore the activities of managing the class will involve arranging the adequate classrooms for teaching and learning to create a climate to match.

Djamarah (2000) also argues that classroom management is an effort to empower the potential of existing classes as optimally as possible to support educational interaction processes achieve the learning objectives. According Mulyasa, 2004; Hasibuan et al, 1994 Suwarna (2005), there are two skills in classroom management is the skill associated with the creation and maintenance of optimal learning conditions (preventive) and skills related to the return of optimal learning conditions.

In conclusion knowledge of classroom management is the teacher's knowledge in learning to manage the allocation of time teaching and learning activities to support the educational interaction processes achieve the learning objectives.

4. Conclusion

From the review literature regarding aspects of pedagogical knowledge can be concluded that there are five aspects of pedagogical knowledge teacher candidates that can be measured is 1) knowledge of learning processes, 2) individual student characteristics, 3) classroom assessment, 4) teaching methods and 5) classroom management.

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