Mapping of Pedagogic Competency of Geography Teacher in Scientific Learning Based-On Curriculum 2013

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Abstract. This paper aims to describe the pedagogical competence of geography teachers in the implementation of scientific learning based on the Curriculum 2013. The scientific approach implements a problem-based learning model, a project-based learning model, and a discovery inquiry learning model. This research focuses on the competence of teachers in actualizing learning models that educate with creative ways in the subjects of geography at senior high school level. Quantitative data analysis of 55 geography teachers in SMAN Bandung, West Java Province, Indonesia. Data analysis is concerned with the knowledge of learning model, the selection of learning models, and designing learning activities to educate based on the Curriculum 2013. The results show: (1) the knowledge of learning models in the Curriculum 2013 is in good category; (2) the knowledge of learning model selection is in medium category; and (3) the ability to design learning activities to educate are in the medium category.

1. Introduction
Education is one of the institutions that have central and strategic roles in the whole human development process. The main role and function of educational institutions is human empowerment, both as individuals and citizens. For individuals, education is a process of empowering self-potential so it can create educated human. As for citizens, education is the right for everyone to get it, so education eventually can create learning society. Educate individual and learning communities can be realized through quality educational practices. Thus, education quality is very important in creating educated individuals and learning communities, because both of them become the main aspects in the process of nation building.

The main guideline for implementing educational practices is UURI No. 20 Th. 2003, UURI No. 14 Th. 2005, and Government Regulation of the Republic of Indonesia No. 19 Th 2005. These three juridical foundations are a reference in determining the parameters of education and learning quality. Each component of learning activities must meet the standards to achieve effective-efficient learning. The role of teacher in learning activities becomes a determining factor in the success of learning activities in facilitating students to have learning experiences and achieve learning outcomes.

Practically, Education has the essence of educative interactions between learning components that consists of: learning plans, learning media, learning materials, learning environments, students, teachers, and assessment instruments [1]. Teacher becomes the main component in the use of each component that is oriented towards the achievement of learning goal. The purpose becomes a terminology for achieving national education goals. Thus, quality learning is a guarantee for improving the quality of education.

Teachers must meet the standards i.e. having academic qualifications, mastering standards competency, and having educator certificates. Teachers in carrying out their duties as agents of learning actualizing four competencies i.e. pedagogic, professional, personality, and social competence. Teachers are professionals assigned with planning and carrying out the learning process, assessing learning results, conducting training. Thus, teachers are required to experience the process of improving teaching knowledge (skills) and have ability to look forward [2].

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However, at the empirical level, the quality of learning still needs to be improved. Teachers' ability to actualize pedagogical and professional competencies in learning has not fully achieved yet. This condition suspected as a cause of low quality of learning and professionalism of teachers [3], [4]. According to that situation, this paper will describe the pedagogical competencies of geography teachers. The discussion focused on the ability to organize educational learning which included: knowledge of learning models in the implementation of the 2013 curriculum, strategies for selecting learning models, and the ability to design educational learning.

2. Methods
This research used survey method to verify pedagogical competencies in conducting educational learning aspect. Research variables are learning activity with following indicators: understanding learning models, selecting learning models, and designing the learning. Respondents were 55 geography teachers in 27 high schools in Bandung. Research instruments used questionnaires and documentation studies. Data analysis was statistically descriptive and categorized: very good, good, Intermediate, and poor.

3. Result and Discussion
3.1 Knowledge of Learning Model in Scientific Approach Curriculum 2013
Knowledge of learning model essence includes six aspects: definition, main concepts, principles, advantages, weaknesses, and syntax, in each learning model in the implementation of the 2013 curriculum. Based on results of the research, the scores for the six aspects of knowledge are in the good category (64.4%) and there are no poor categories. Conceptually, teacher knowing about learning model used in implementing the 2013 curriculum provides the effectiveness of learning. Knowledge of the learning essence model is presented in the following figure

![Figure 1. Knowledge of Learning Model](image)

Knowledge of learning model is one of the basic teaching skills, which is ability to make variations [1]. Ability to make varying learning models can facilitate students to gain learning experiences and learning outcomes. The syntax of each learning model shows learning activities or student learning activities as a process of obtaining learning outcomes. The teacher acts as a facilitator for the smooth learning process. Learning experiences obtained by students include four aspects, i.e. listener, observer, writing, and presenter or communicator [5].

At the pedagogical competence level, knowledge of the learning model is in the ability group to master learning theory and the principles of educational learning [6]. Knowledge of approaches, strategies, methods, and learning techniques is the basis for teachers to design learning in creative way, carry out educational learning, and assess learning processes and outcomes and follow-up. Learning is a
process that consists of planning, implementing, and evaluating learning to determine the effectiveness and determine follow-up for improving learning [7]. Thus, learning is a process of continuous improvement for the achievement of quality learning, i.e. effective learning.

3.2. Strategy of Selecting Learning Models

The ability to choose and use a learning model is one of the teacher’s competencies to facilitate students to get competencies according to their learning needs. Some of the considerations to choose learning model are: basic competencies, main subject matter that contained in syllabus, learning indicators/goals, student characteristics, and time allocation. The results showed that teacher ability to choose and use learning models was in the Intermediate category (67.3%) and there were no poor categories. This fact shows that, teachers have adequate knowledge and abilities in determining learning models that facilitating students to achieve competence. The ability to choose and determine the learning model is presented in the following figure.

![Figure 2. Strategy of Selecting Learning Models](image)

Conceptually, there are three aspects in selecting and determining learning models: basic competencies, main subject matter in syllabus, and national time allocation (Curriculum 2013). Whereas the other two aspects, i.e. learning indicators/goals and student characteristics, must be developed by subject teachers. Thus, the process of selecting and determining the learning model needs to consider national aspects and factual conditions. This is very important in contextual learning so students would have social skills. This ability includes pedagogical competence and professional competence [6].

The ability to identify basic competencies, subject matter, and time allocation is part of pedagogical content knowledge that is closely related to the skills of explaining and managing classes [8]. Explanation skills are a reflection of mastering learning material, while classroom management skills are a determining factor for achieving efficient learning. Efficient learning can facilitate students to gain learning experiences according to the syntax of the learning model. Effective learning to help students get learning outcomes, both aspects of attitude, knowledge and skills [9]. The ability to choose a learning model is one of the factors that contribute to meaningful learning, i.e. students get academic competence and social skills.

3.3. Designing Educational Learning

The ability to design educational learning is one of the teacher's competencies to develop the potential of students to be educated, independent and competent. Some steps in designing educational learning activities are: analysis of basic competencies, analysis of the subject matter, formulating learning goals, developing teaching materials, designing learning media, designing learning activities, and developing assessment instruments. The results of the study showed that the ability of teachers to design educational
Learning was in the Intermediate category (52.7%) and there were no poor categories. This shows that, teachers have sufficient ability to prepare educational learning tools. The ability of the teacher to design learning is presented in the following figure.

![Figure 3. Designing Educational Learning](image)

Ability to design educational learning is one of the competence to carry out educational learning. Learning is a process consisting of activities to design and implement learning [10] and evaluation for continuous improvement of learning [1]. The ability to design learning is the knowledge and skills of teachers in developing and preparing learning tools for the implementation of educational learning. Learning is educational interaction characterized by a process of changing behaviour in students. Thus, the existence of teachers in the learning process has an important and strategic role.

Educational learning provides an opportunity to create educated individuals who have participatory advantages [11]. Today, educated individuals are characterized by participatory competencies and 21st century competencies in order to have the ability to compete in the world community. Individuals who have participatory superiority show academically competent and social skills as a synergistic power in nation and State developing. 21st century competency is characterized by the ability to work together, intelligently communicate, and think critically innovative in responding global dynamics and participating in change. Both of these abilities can be developed through educational learning with the principles of habituation, civilization, and empowerment [12].

4. Conclusion
Mapping of pedagogic competency focuses on the ability to actualize educational learning. Particularly to review learning models on scientific learning in 2013 Curriculum. Geography teachers knowledge about learning models is in a good category, which includes: understanding, concepts, principles, advantages, weaknesses, and syntax. The ability to choose a learning model is in the medium category, including: identification of basic competencies and subject matter/syllabus, learning indicators/goals, student characteristics, and time allocation. The ability to design learning that educates is in the medium category, including: analyzing basic competencies and subject matter, formulating learning goals, designing learning media, developing teaching materials, designing learning activities, and developing assessment instruments and follow-up.

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