ICT competences of primary school teachers

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Abstract. One of the traits of professional teachers is to possess good pedagogic competence. Primary school teachers in Indonesia are required to possess good pedagogic competence and to integrate technology into learning processes. Primary school teachers should be able to utilize Information and Communication Technology (ICT) in teaching process. The present study yields a pedagogic competence and classroom management profile of primary school teachers. This study employs survey method to obtain data from primary school teachers. Data is processed using percentage calculation and descriptive analysis. The result of analysis shows that the number of primary school teachers who possess good pedagogic competence is only less than half (32%). They only do conventional classroom management and have not optimally utilized ICT for learning activities in primary schools. Thus, this paper will discuss the importance of ICT competence and how to develop it for primary school teachers.

1. Introduction
The socio-cultural philosophy in Indonesia’s education has put teachers’ function and role in such a way that teachers are considered one of the professions that drive the education process in the nation. If a teacher is unable to master teaching materials and teaching strategies, quality improvement in education will never be optimally achieved [1]. Teachers in Indonesia must possess four competencies: pedagogic, personality, social, and professional competencies. These four competencies are not separate items; they are interrelated and affect each other. One of the basic competencies in teaching profession is pedagogic competence. Teachers’ pedagogic competence determines teaching and learning effectiveness. Effective teaching and learning activities have direct influence on the quality of students’ learning result. learning effectiveness is affected by teachers’ and students’ characteristics, learning materials, and other factors pertaining to learning activities [2].

Classroom management, one of the primary roles of teachers, should be conducted effectively [3]. Teachers should be proficient in effective classroom management because it has direct effects on creating effective learning. Grouping teachers based on their classroom management competency will yield diverse groups. Some teachers are experts (professionals), and are highly motivated, in classroom management. Other teachers have great classroom management competency but are lazy to maximize their management potentials [4,5]. Another group of teachers consists of non-professional teachers in terms of classroom management. This diversity in classroom management competency is caused by various factors, including physical environment, socio-emotional situation, and organizational condition [6].

Good classroom management nowadays involves the utilization of ICT (Information and Communication Technology). The advancement of technology today requires the involvement of digital
media in learning [7]. This study begins with study that found that teachers’ competence to use ICT in learning in Indonesia was only 13%. The present study aims to uncover teachers’ ICT competence needs and their relevance with teachers’ classroom management in primary school.

2. Method

This study is conducted in four months, employing descriptive survey method. The research subject is 30 primary school teachers, using instruments of teachers’ performance analysis questionnaire, interview, and observation. Descriptive survey in this study is implemented by gathering, compiling, analyzing, and interpreting data until a conclusion can be drawn based on the data from the respondents.

3. Results and discussion

3.1. Teachers’ ICT competence

Based on questionnaire responses and analysis, primary school teachers’ pedagogic competence in utilizing ICT for learning purposes is shown in the following table 1.

| Alternative Responses | Number of Teacher F | Percentage | Category |
|-----------------------|---------------------|------------|----------|
| 4                     | 4                   | 13%        | Very Good|
| 3                     | 17                  | 57%        | Good     |
| 2                     | 9                   | 30%        | Quite Good|
| 1                     | 0                   | 0%         | Bad      |
| **Total**             | **30**              | **100%**   |          |

Teachers’ ability or competence to use ICT in teaching/learning activities is one of the crucial competencies nowadays, especially since ICT has undergone rapid advancement and been able to be utilized to facilitate learning [8]. Among the indicators that teachers understand and actualize their competence is their ability to utilize information and communication technology in learning activities. Data in the table 1 shows that 57% of teachers has good ICT competency. This is a potential factor for Indonesia to improve classroom management, modern classroom management must involve technology in its planning, material selection, methods selection, and evaluation activity [6,7]. Indonesian Government’s regulation on teachers’ ICT competence for teaching stipulates that teachers should be able to utilize information and communication technology apparatus in learning to produce a more effective learning. ICT can increase learning effectiveness if it is utilized in such a way that suits the students’ needs and characteristics.

3.2. ICT for effective classroom management

Classroom management is a skill or competence that teachers should possess to be able to decide, understand, diagnose, and act towards classroom improvement [9]. There are several aspects to be considered in classroom management, including: characteristics of the class, drive force of the class, classroom situation, selection, and creative acts. Classroom management is performed by every teacher to create a conducive atmosphere for learning [10,11].

ICT-based classroom management today has become a form of teachers’ professional task [6]. The aims of ICT utilization in classroom management are:
- To create an effective classroom situation and condition, both as a learning environment and as a study group, which allows the students to develop their abilities as much as possible.
- To remove various challenges that may hinder learning interaction.
- ICT as the learning source, facility, media, supports and facilitates students to learn in an environment that suits their social, emotional, and intellectual capacity.
• To guide and develop the students in accordance with their socio-cultural background and the technological advancement.

ICT is used in classroom management for several reasons [6,7,9].

• Curriculum management: Curriculum management nowadays should be fully conducted using ICT. Curriculum is a framework that teachers use as the guideline for what to achieve in learning process. ICT-based curriculum management aims to create a digital and computerized lesson plan and educational plan. ICT-based curriculum management is expected to be more focused and more structured, compared to conventional management, particularly in terms of administration.

• Student management: Students are members of society who attempt to develop their potentials through teaching and learning processes available in many levels and types of education [12]. ICT-based student management is a process in which ICT devices are used to control the students. These devices can also be used to build a communication network with students and/or their parents.

• Teaching management: Academic activities include teaching activities in classroom. ICT is expected to facilitate these activities in producing meaningful learning. Teachers should select ICT-based learning media and sources using technology devices to facilitate teaching and learning process.

• Classroom administration management: Administrative activities are categorized as ‘non-teaching’ activities. However, they are as important as ‘teaching’ activities because the objectives of classroom management cannot be achieved without good administration. A concrete form of administration management may involve lesson plan development, materials procurement, media procurement, and evaluation instruments development that suit learning needs.

4. Conclusion
In conclusion, teachers’ ICT competence is potential for creating an ICT-based classroom management. Teachers will be able to optimize several forms of ICT-based classroom management if they possess good ICT competence. Continuous practice and habituation of ICT utilization in learning will bring about a change and maximize the benefits of ICT for learning.

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