

CHAPTER I

INTRODUCTION

This chapter discusses briefly the background of the study, the problems of the study, the objectives of the study, the significances of the study, and limitations of the study.

1.1 The Background of the Study

One component of education which has very important and strategic role in improving the quality of education is lecturers. Lecturers play very important role for maximizing efficient function of educational system and for enhancing the quality of learning. Lecturers also have important influence on their students' academic achievement. In Indonesia, the important role of lecturer is outlined in the Act of Republic Indonesia Number 14 of 2005 on Teachers and Lecturers. It is stated that lecturers are professional educators with the primary task of educating, teaching, guiding, directing, coaching, assessing, and evaluating students. It is worth saying that lecturers play a major role in the development of education. Lecturers also determine the success of students, particularly in relation to teaching and learning. In addition, lecturers have great influence in shaping the outcome of the education.

According to Indonesian Law on teacher and lecturer (No.14, 2005), competency is described as a range of knowledge and behavior which must be possessed by teacher or lecturer in order to do their duties. Lecturer competency includes their knowledge, skills and behavior which help or enhance the capabilities of educator to educate, teach, guide, direct, train, and evaluate the

student. One's competence should include communication skills, ability to learn, conduct social interactions, problem solving, working with ICT or other support tools, and so on (Zeravikova, 2015). It can be concluded that the lecturer is professional educators who have the responsibility for containing the knowledge, skills, and professional ability associated with efforts to educate the students in all aspects, whether spiritual, emotional, intellectual, physical, and other aspects.

In addition, Richard (1998) states that one of pedagogical content knowledge which should be prepared by lecturers is make appropriate use of technology. In addition, based on Education Virginia Department (2012), one of the competence standards of lecturer is lecturer is able to use instructional technology to enhance student learning. The use of technology has become an important part of the learning process in and out of the class. Technology enables leacturers to adapt classroom activities, thus enhancing the learning process.

The transition of the real teaching-learning process into the virtual classroom in the classroom context is the culmination of the government's attempts to keep COVID-19 from spreading to university populations and local communities. As a result, the teaching and learning processes in various Indonesian regions (rural and urban) have been transformed to online learning.

The online learning indicates that it is critical for lecturers to understand technology, pedagogy, and education at this time. Lecturers can remotely teach students using technologies that allow synchronous and asynchronous communication with the entire class, group, and individual student or youth; access to learning resources; and collaborative and creative activities. In line with

the minister of education's decision regulating changes in the learning system from home, every college is currently carrying out learning from offline to online.

Nowadays the growing corona virus pandemic compelled campus officials to halt all lectures and most in-person classes as of March 2020, most faculty and lecturers were caught off guard. Few had experience teaching online courses. Most had to scramble to learn how to deliver lectures via teleconferencing services and to pick up tricks from colleagues about how to be remotely engaging. This shift into virtual classrooms is the way to prevent COVID-19 from spreading to communities.

Therefore, at the time of the Covid19 pandemic teaching and learning process is quite difficult to do since this pandemic has rapidly influenced the nature of teaching and learning across all educational aspects around the world. There are lots of competencies that lecturers must have, plus in this current pandemic that forces every educator to master technology, one of those is TPACK (Technological Pedagogical Content Knowledge).

According to the TPACK concept, Harris, J., et al (2009), technology incorporation is viewed as a complicated multidimensional mechanism that necessitates an appreciation of the mutual complex interaction between three knowledge bases: pedagogy, content, and technology. The TPACK structure contains seven structures. They are as follows: (1) Content knowledge (CK), also known as subject matter knowledge, (2) Technology knowledge (TK), also identified as knowledge of different technology, (3) Pedagogical knowledge (PK), also defined as knowledge of classroom instruction or strategies (4) Technological

content knowledge (TCK), that refers to subject knowledge provided by the use of technology, (5) Technological pedagogical knowledge (TPK), which corresponds to knowledge about the use of technology to apply variety of teaching methods, and (6) Pedagogical content knowledge (PCK), which relates to knowledge of teaching methods for various forms of subject material, and (7) Technological pedagogical content knowledge (TPACK), defined as knowledge of how to use technology to apply teaching methods for various types of subject material.

Several researches on educators' pedagogical knowledge and TPACK have been conducted. In 2016, Yudi et al. published Indonesian EFL Teachers' Application of TPACK in In-Service Education Teaching Practices, and Aniq and Draji published Investigating EFL teachers' perspectives on their TPACK development: how EFL teachers perceive seven domains on the TPACK system in 2019. Currently, there are only a few studies that can map the relationship between the seven factors through structural equation modeling (SEM) (Chai et al., 2013; Koehler et al., 2013). One study reported that CK and PCK did not predict teacher TPACK positively, while other factors predicted TPACK positively (Koehler et al., 2013). Other research shows that the direct positive predictors of the TPACK of pre-service teachers are TCK, PCK and TPK, with TK, CK, and PK only having an indirect effect (Chai et al., 2013). Other studies reported that PK, CK, TK and PCK did not predict TPACK positively, while other factors had a positive effect (Dong et al., 2015). The difference in the results from these studies suggests that the mapping of the model structure of the factors

forming TPACK under various conditions may not be the same, which implies that educators need to understand the distinguishing effects of TPACK development in different groups. Several studies discussed the relationship between TPACK and the use of technology integration in the teaching and learning process.

The use of technology in higher education is no longer an option but a core requirement of today's teaching and learning process during Covid-19 pandemic. The competence of lecturers is also expected to be more innovative and professional in order to adapt to and anticipate the rapid changes in technology and changes made by the Covid-19 pandemic. The discrepancy between what they have to do in the teaching and learning process during Covid-19 pandemic and the real cases of them in the field is the main point which became the reason for conducting research at the Colleges in Jambi to know the level of TPACK and lecturers' competence and also the differences of TPACK level and lecturers' competence in terms of age, gender, level of education, and teaching experience in online teaching during the Covid-19 pandemic in online teaching and learning during Covid-19 pandemic.

1.2 The Problems of the Study

The following research questions are raised to guide the study:

1. What is the lecturers' level of Technological Pedagogical Content Knowledge (TPACK)?
2. What is the lecturers' competence during covid-19 in term of planning and preparing, learning process, and learning evaluation?
3. Is there any relationship between lecturers' Content Knowledge (CK) and the lecturers' Technological Content Knowledge (TCK) on online teaching and learning?
4. Is there any relationship between lecturers' Technological Knowledge (TK) and the lecturers' Technological Content Knowledge (TCK) on online teaching and learning?
5. Is there any relationship between lecturers' Technological Knowledge (TK) and the lecturers' Technological Pedagogical Knowledge (TPK) on online teaching and learning?
6. Is there any relationship between lecturers' Pedagogical Knowledge (PK) and the lecturers' Technological Pedagogical Knowledge (TPK) on online teaching and learning?
7. Is there any relationship between lecturers' Technological Content Knowledge (TCK) and the lecturers' Technological Pedagogical Content Knowledge (TPACK) on online teaching and learning?

8. Is there any relationship between lecturers' Technological Pedagogical Knowledge (TPK) and the lecturers' Technological Pedagogical Content Knowledge (TPACK) on online teaching and learning?
9. Is there any relationship between lecturers' Technological Pedagogical Content Knowledge (TPACK) and the lecturers' competence on online teaching and learning?
10. Is there any significant difference of Technological Pedagogical Content Knowledge (TPACK) level and lecturers' competence in terms of age?
11. Is there any significant difference of Technological Pedagogical Content Knowledge (TPACK) level and lecturers' competence in terms of gender?
12. Is there any significant difference of Technological Pedagogical Content Knowledge (TPACK) level and lecturers' competence in terms of teaching experience?
13. Is there any significant difference of Technological Pedagogical Content Knowledge (TPACK) level and lecturers' competence in terms of education level?

1.3 The Objectives of the Study

Based on the problems mentioned above, the objectives that needed to be investigated in this study are to examine:

1. The extents of lecturers apply technological pedagogical content knowledge (TPACK) through online teaching and learning.
2. The extent of lecturers provide online lessons, introduce new learning content, and conduct online assessment through online environment.
3. The extent of the lecturers' level of Content Knowledge (CK) impact on the lecturers' Technological Content Knowledge (TCK) on online teaching and learning
4. The extent of the lecturers' level of Technological Knowledge (TK) impact on the lecturers' Technological Content Knowledge (TCK) on online teaching and learning
5. The extent of the lecturers' level of Technological Knowledge (TK) impact on the lecturers' Technological Pedagogical Knowledge (TPK) on online teaching and learning
6. The extent of the lecturers' level of Pedagogical Knowledge (PK) impact on the lecturers' Technological Pedagogical Knowledge (TPK) on online teaching and learning
7. The extent of the lecturers' level of Technological Content Knowledge (TCK) impact on the lecturers' Technological Pedagogical Content Knowledge (TPACK) on online teaching and learning

8. The extent of the lecturers' level of Technological Pedagogical Knowledge (TPK) impact on the lecturers' Technological Pedagogical Content Knowledge (TPACK) on online teaching and learning
9. The extent of the lecturers' level of Technological Pedagogical Content Knowledge (TPACK) impact on the lecturers competence on online teaching and learning.
10. The differences of TPACK level and lecturers' competence on online teaching during covid-19 in terms of age
11. The differences of TPACK level and lecturers' competence on online teaching during covid-19 in terms of gender
12. The differences of TPACK level and lecturers' competence on online teaching during covid-19 in terms of teaching experience
13. The differences of TPACK level and lecturers' competence on online teaching during covid-19 in terms of education level

1.4 Hypothesis

1. Ha : The lecturers' level of Content Knowledge (CK) impact on the lecturers' Technological Content Knowledge (TCK) in online teaching and learning
Ho : The lecturers' level of Content Knowledge (CK) does not impact on the lecturers' Technological Content Knowledge (TCK) in online teaching and learning
2. Ha : The lecturers' level of Technological Knowledge (TK) impact on the lecturers' Technological Content Knowledge (TCK) in online teaching and learning
Ho : The lecturers' level of Technological Knowledge (TK) does not impact on the lecturers' Technological Content Knowledge (TCK) in online teaching and learning
3. Ha : The lecturers' level of Technological Knowledge (TK) impact on the lecturers' Technological Pedagogical Knowledge (TPK) in online teaching and learning
Ho : The lecturers' level of Technological Knowledge (TK) does not impact on the lecturers' Technological Pedagogical Knowledge (TPK) in online teaching and learning
4. Ha : The lecturers' level of Pedagogical Knowledge (PK) impact on the lecturers' Technological Pedagogical Knowledge (TPK) in online teaching and learning

Ho : The lecturers' level of Pedagogical Knowledge (PK) does not impact on the lecturers' Technological Pedagogical Knowledge (TPK) in online teaching and learning

5. Ha : The lecturers' level of Technological Content Knowledge (TCK) impact on the lecturers' Technological Pedagogical Content Knowledge (TPACK) in online teaching and learning

Ho : The lecturers' level of Technological Content Knowledge (TCK) does not impact on the lecturers' Technological Pedagogical Content Knowledge (TPACK) in online teaching and learning

6. Ha : The lecturers' level of (TPK) impact on the lecturers' Technological Pedagogical Content Knowledge (TPACK) in online teaching and learning

Ho : The lecturers' level of (TPK) impact on the lecturers' Technological Pedagogical Content Knowledge (TPACK) in online teaching and learning

7. Ha : The lectures' level of TPACK impact on the lecturer's competence in online teaching and learning

Ho : The lecturers' level of TPACK does not impact on the lecturers' competence in online teaching and learning

8. Ha : There is significant difference of TPACK level and lecturers' competence on online learning in terms of age

Ho : There is no significant difference of TPACK level and lecturers' competence in terms of age

9. Ha : There is significant difference of TPACK level and lecturers' competence in terms of gender

Ho : There is no significant difference of TPACK level and lecturers' competence in terms of gender

10. Ha : There is significant difference of TPACK level and lecturers' competence in terms of teaching experience

Ho : There is no significant difference of TPACK level and lecturers' competence in terms of teaching experience

11. Ha : There is significant difference of TPACK level and lecturers' competence in terms of education level

Ho : There is no significant difference of TPACK level and lecturers' competence in term of education level

1.5 The Significances of the Study

This research is mainly intended to examine the extent of lectures provide online lessons by applying TPACK, introduce new learning content, conduct teaching and learning process, conduct online assessments throught online environment in teaching and learning process during covid-19 pandemic. It will be beneficial not only for the lecturers but also the teachers and the government. The result of the research is expected to be able to give some advantages classified as follows. For the researcher, this research is expected to give a good understanding about online education and its effects on the teaching and learning process during covid-19 pandemic. The results of the research are expected to be significant considerations in enhancing the quality of teaching and learning process during covid-19 pandemic.

In addition, this study also sharpens the inquiry of the researcher in doing research. For the lecturers, this research will provide them some basic information about online education program. The covid-19 pandemic will likely continue presenting new way that come up in the course of routine virtual education. The shift from online classes back to in-person learning may create disruptions of its own. Hopefully, these phases of trouble shooting can provide universities, lectures and students the opportunity to practice adaptability, patience and resilience. And hopefully, this study will serve as preparation for future challenges that come with the next epidemic, pandemic and other disaster.

1.6 Limitations of the Study

Assumed from the research background above, researcher focuses on lecturers' Technological Pedagogical Content Knowledge (TPACK) and lecturers' competencies on online teaching and learning during the covid-19 pandemic in private higher education in Jambi City. Technological Pedagogical Content Knowledge (TPACK) framework is based on Shulman (1986) construct of pedagogical content knowledge (PCK) and is defined to seven constructs of TPACK following Schmidt et al. (2009): technology knowledge (TK), content knowledge (CK), pedagogical knowledge (PK), pedagogical content knowledge (PCK), technological content knowledge (TCK), technological pedagogical knowledge (TPK), and technical pedagogical content knowledge (TPACK).

The competence of lectures in this study is measured based on the following aspects: (1) Ability to formulate the objective of learning, (2) Ability to

organize the material of learning, (3) Planning of effective learning process, (4) Selecting of source and media of learning, (5) Starting of effective learning, (6) Mastery of the learning material, (7) Implementing of approach and strategy of learning, (8) Applying of source and media of learning, (9) Stimulating and maintaining of student involvement, (10) Applying appropriate and proper language in communication of learning, (11) Closing of effective learning, (12) Designing of instrument for evaluation, (13) Applying strategy and method of evaluation, and (14) Applying the feedback.