CAC Model to Evaluate Teachers' Attitudes towards Technology Use in Their EFL Classrooms

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ABSTRACT

The rapid development of technology has altered so many aspects of people's private and social needs and activities including but not limited to communication, education, economy, commerce, and entertainment. In educational context, teachers and students' use of technology might be supported by several factors such as demand of academic and private use, increasing free internet access, as well as government and school policy on ICT-based instructions. In addition, use of technology among teachers is influenced by their attitudes. For years now, research focusing on teachers' attitudes towards technology use with Technology Acceptance Model (TAM) has been very much conducted to explore teachers' particular use of the digital devices and Web 2.0 technology. However, investigation of teachers' attitudes towards technology choices by using a Cognitive Affective Conative (CAC) Model by Schiffman & Kanuk (2004) in Jain (2014) is not yet very much done. Accordingly, the paper is an attempt to evaluate English teachers' attitudes towards technology use in their EFL classroom practices through CAC model of attitudes. Qualitative descriptive approach with a survey method was employed. The study involved English teachers of primary and secondary education in Central Java, Indonesia. The survey questionnaire was used to obtain the required research data. Finally, the pedagogical implication is presented.

Key words: *CAC Model, attitude, technology, EFL classrooms.*

INTRODUCTION

Use of technology has altered so many aspects of people's lives including education in general and classroom teaching in particular. To aid teachers and students in classroom activities, they can make use of technology in accordance with their needs. Teachers, for examples, can use technology for preparing pre-teaching activities such as designing lesson scenarios, preparing teaching materials, selecting and determining teaching methods, and searching for appropriate media. Besides, ICT helps teachers in delivering teaching materials, facilitating students during tasks and conducting evaluation.

In education context in Indonesia, integration of technology for teaching and learning purposes has been a part of the government's demands. The Regulation of the Minister of National Education – *Permendiknas* No. 16 year 2017 regarding Standard of Academic Qualification and Teacher Competence mentions that one of the teachers' pedagogical competencies is that teachers are able to make use of information and communication

technology (ICT) for learning purposes. Moreover, the Regulation of the Minister of Culture and Education – Permendikbud No 22 year 2016 regarding the Process Standard states that one of the learning outcomes is that students acquire three domains of competencies including attitude, knowledge, and skill supported with technology literacy.

For this reason, use of technology to support teaching and learning processes is paramount. However, there are factors which support and hinder teachers using it. Among the factors mostly discussed is attitudes. "The study of attitude itself is gaining importance because its influence over an individual's behavior" (Jain, 2014). In line with this, here is presented a number of previous studies on attitudes towards ICT use.

Albirini's (2004) study focused on investigating English teachers' attitudes towards ICT. It also uncovered the correlation between computer attitudes and five independent variables: computer attributes, cultural perceptions, computer competence, computer access, and personal characteristics - computer training background in particular. The research results show that teachers have positive attitudes toward ICT for classroom instructions. Furthermore, teachers' attitudes were affected by computer attributes, cultural perceptions and computer competence.

In addition, Teo, Lee, and Chai (2007) carried out a study aiming at obtaining pre-service teachers' attitude in using computers for instructional purposes. The researchers employed quantitative approach with a survey method and Technology Acceptance Model (TAM) for data analysis. The result shows that the most influencing factors for pre-service teachers using computers are perceived usefulness (PU), perceived ease of use (PE) and subjective norm (SN). Meanwhile, another variable like facilitating conditions (FC) partly affects teachers' attitudes through perceived ease of use variable.

Following the previous research by Teo, Lee, and Chai (2007), Teo (2008) also studied about pre-service teachers' attitude towards computer use for teaching and learning activities. The difference between these two studies lies on that Teo's study included a moderator variable. Moreover, Teo's (2008) analysis was done on the basis of four aspects of attitude - affective, perceived usefulness, perceived control, and behavioral intention. The finding shows that pre-service teachers' attitude towards computer use was mostly affected by the affective aspect and behavioral intention compared to those of perceived usefulness and perceived control aspects. However, at most the participants have positive attitude towards computer use.

Rohaan, Taconis, Jochems (2010) explored the correlation between teachers' knowledge and students' attitudes towards ICT. This conceptual study shows that teachers' subject matter knowledge has positive correlation with teachers' pedagogical content knowledge, teachers' attitude, and pupils' attitudes. Subject matter knowledge and technology knowledge have an important role in technology learning. Besides, subject matter knowledge is required to develop pedagogical knowledge. It can be inferred that both professional and pedagogical knowledge support teachers' teaching activities which finally will contribute to students' concepts and attitudes towards technology.

In 2012, Nair and Das investigated teachers' attitude towards ICT use for learning purposes. Similar to the study of Teo, Lee, dan Chai (2007), this research

employed quantitative approach with a survey method and used Technology Acceptance Model (TAM) as the data analysis framework. The difference between these two studies is that the study by Teo, Lee, and Chai (2007) involved pre-service teachers, while Nair and Das' (2012) study involved mathematics teachers. The result shows that the perceived ease of use aspect dominates teachers' attitude ICT use for teaching and learning. Besides, the perceived usefulness aspect was also influenced by perceived ease of use aspect. The participants are of the opinions that ICT is advantageous and has a positive impact on the technology integration into classroom instructions. Moreover, teachers' professional development on ICT will enhance teachers' competence in using technology.

Moreover, Balta and Duran (2015) explored teachers' and students' attitudes toward interactive whiteboard technology along with differences in attitudes on the basis of the demographic aspects. The study employed quantitative approach with a survey method involving teachers and students. The finding shows that interactive whiteboards are highly appraised by both teachers and students. Students mostly prefer the usage of interactive whiteboards in math courses, and their attitudes differ across their genders and school levels.

Different from the studies reviewed previously, Alothman & Michaelson's (2017) study involved undergraduate students in Saudi Arabia. It explored undergraduate students' technology usage patterns and their attitudes to it. The findings indicate that although they used technology for an average of 45 hours per week and had positive attitudes to it, they did not frequently use ICT, computers in particular, to support their learning. The students were not routinely required to use computers at university, and the universities did not provide ICT infrastructure. Moreover, it was found out that the most influential factors of attitudes towards computers use were city of study, parental encouragement, and English language proficiency. Meanwhile, gender did seem to be influential.

From the previous studies it can be inferred that use of ICT for instructional purposes is very much affected by attitudes. Besides, to uncover teachers' attitudes towards ICT use, the researchers used Technology Acceptance Model (TAM) as the data analysis framework. However, studies on exploring attitude towards technology using Cognitive Affective Conative (CAC) model has not been very much conducted. Hence, this study is done to fill the gap. The present study focuses on investigating English teachers' attitude towards technology use by employing the CAC model by Schiffman and Kanuk (2004) in Jain (2014). Therefore, the research question addressed is "How is teachers' attitude towards technology use in their EFL classrooms?"

Based on the Cognitive-Affective-Conative (CAC) Model by Schiffman and Kanuk (2004), attitudes are constructed around three components: (1) a cognitive component (beliefs), (2) an affective component (feelings), and (3) a conative component (behavior). The cognitive component is an evaluation of the entity that constitutes an individual's opinion (belief/disbelief) about the object. Cognitive refers to the thoughts and beliefs individual has about an attitude object and has to do with intelligence. The affective component is the emotional response (liking/disliking) towards an attitude object. The behavioral component is a verbal behavioral tendency by an

individual and it consists of actions or observable responses that are the result of an attitude object. The conative drives how one acts on those thoughts and feelings. Basically, people's attitudes are composed of three components which as cognitive, affective, and conative. It can be presented as in Figure 1.

Figure 1 Three Components of Attitudes-CAC

METHODOLOGY

This is a descriptive qualitative study with a survey method. Survey research is employed on the basis of the current study objective which is to explore the teachers' attitudes towards use of technology. This is to follow Cresswell (2012:376) explaining some reasons of using survey method:

> "You use survey research to describe trends, such as community interests in school bond issues or state or national trends about mandatory student uniform policies. You also use survey research to determine individual opinions about policy issues, such as whether students need a choice of schools to attend. Surveys help identify important beliefs and attitudes of individuals, such as college students' beliefs about what constitutes abusive behaviors in dating relationships. Surveys provide useful information to evaluate programs in schools, such as of a robotics program in science education."

Furthermore, the present study particularly uses cross-sectional survey in which it is considered very popular in education field since the researchers gathers the data in one time (Cresswell, 2012:376). This type of survey is used to investigate the participants' attitude, belief, perception, and actual behavior regarding technology use.

The study was conducted in 2018 involving primary and secondary schools in Central Java, Indonesia. The participants taking part in this study were 55 English teachers. Based on the demographic information, out of 55 participants, 32 (58.2%) of them are females and 23 (41.8%) are males. In terms of their educational background, 47 (85.5%) are with bachelor degree in English education, 4 (7.3%) are with bachelor degree of non-English education, 3 (5.5%) are with master degree of English education, and 1 (1.8%) is with master degree of non-English education.

To gather the research data, a questionnaire with 50 questions was distributed to the English teachers. The

questions were developed based the three components of attitude which are cognitive, affective, and conative. The cognitive aspect includes the attributes of perceived usefulness and perceived ease of technology use. The affective aspect covers attitude towards using technology such as teachers' preferences, likes, and dislikes. The conative aspect refers to actual system use of technology. Out of 50 questions, 10 of them were addressed to obtain their demographic information. 12 questions were in the form multiple choice items to gain information about both hard ware and software used by the participants. The rest 28 questions were focused on three aspects of attitude and they were designed in the four-scale items which were disagree, partly agree, agree, and strongly agree. For practical reasons, the questionnaire was designed by using the application of Google form and distributed to the participants through WhatsApp.

The gathered data were then analyzed following the procedure of 1) data reduction, 2) data categorization, 3) data display, 4) data description, and 5) data analysis. Data reduction was meant to select the potential data used in the study. In regard to the present study focusing on exploring teachers' attitude which is of three; cognitive, affective, and conative, the data were categorized in accordance with those aspects. After the data were categorized into each aspect of attitude, they were then displayed in graphs and tables for analysis. To provide a clear picture of the information presented through the tables and graphs, the description is given for every single data. Finally data analysis was done to explore the most influential attitude of teachers towards technology use.

FINDING AND DISCUSSION

As previously mentioned, the current study is an analysis of English teachers' attitudes towards technology use employing the framework of *Cognitive Affective Conative (CAC)* Model by Schiffman & Kanuk (2004).

Chart 1 below shows English teachers' attitudes towards technology use in ELT classrooms based on the cognitive aspect. It includes knowledge and skills of using technology for teaching and learning purposes. Besides, it refers to teachers' perspectives of the benefits and easiness of technology use to support classroom activities. Out of 55 participants, four teachers stated disagree, 15 partly agree, 22 agree, and 14 strongly agree.

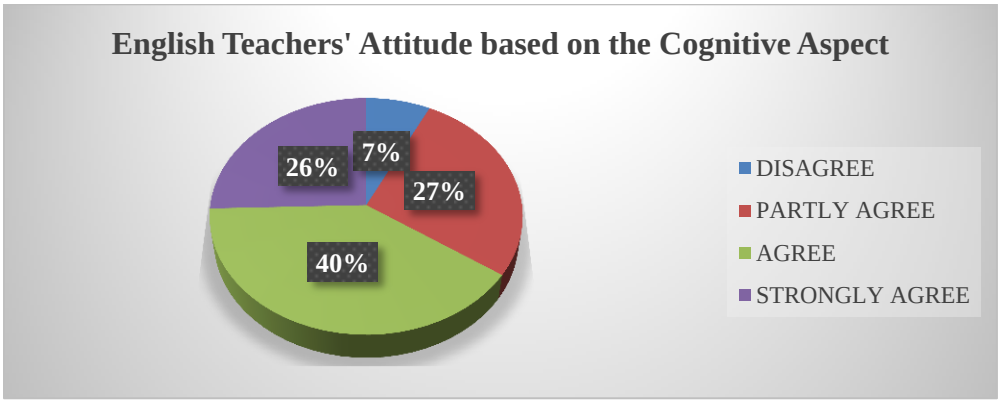

Chart 1 Teachers' attitude towards technology use based on the cognitive aspect

From the finding presented in Chart 1, it can be inferred that teachers' technology use seems to be very much affected by the cognitive aspect. Attributes like teachers' knowledge and skills in operating technology devices such as laptop, LCD, and smart phones affect teachers in using them for teaching and learning purposes. Ability in using and familiarity with learning management system like Google Classroom, Edmodo, Quipper School, Blackboard, Schoology also play an important role in teachers' instructions. Teachers' perspectives of the benefits and easiness of technology use can also be a driving force for teachers to maximize the use of applications such as Kahoot, Quizlet, Prezi, Socrative, English Central, and social networking sites to name some of them YouTube, WhatsApp, Facebook, Instagram, and Twitter.

Chart 2 presents the English teachers' attitude towards technology use based on the affective aspect. It deals with teachers' emotion, preferences, likes, and dislikes of technology use. It also refers to teachers' responses and willingness to develop their pedagogical competence-technology use in particular. Besides, it relates to teachers' responses to difficulties and drawback as well as their intention to develop their knowledge and skill in using technology. Out of 55 participants, three of them stated disagree, 9 partly agree, 31 agree, and 22 strongly agree.

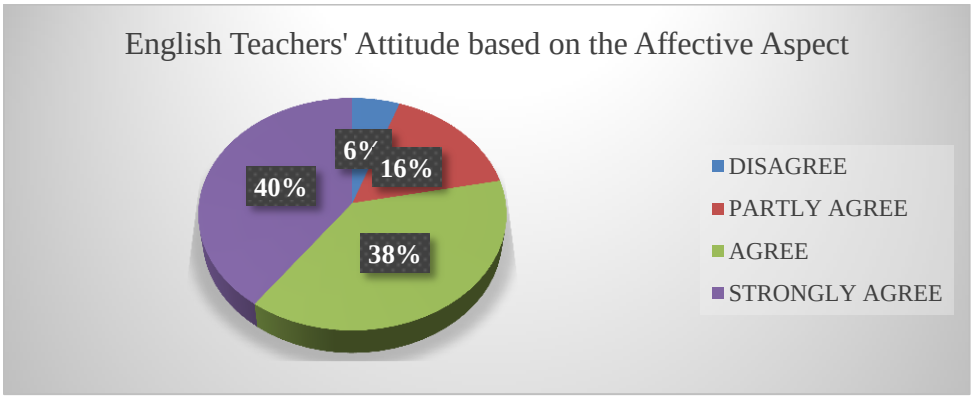

Chart 2 Teachers' attitude towards technology use based on the affective aspect

The finding shown in chart 1.2 indicates that teachers' attitude towards technology use is also very much supported by the affective aspect. It is proved by the evidences that they are likely to attend teachers' professional development. 28 (50.9%) participants mentioned that they attended teacher professional development on technology use and the rest 27 (49.1%) said that they have never attended this kind of program and they are really willing to if there is an opportunity to do so. Professional development on technology which the teachers have attended are, for examples, Google Classroom for teaching and learning, seminars on technology, Focused Group Discussion of technology, MIEE Onboarding, Office 365 for teaching and learning, workshop on ICT for teaching and learning, designing Blog,

Whiteboard Animation, Power Point, and Video Scribe.

Chart 3 presents the teachers' attitudes towards technology use based on the conative aspect. It deals with the actual system use. It represents what teachers actually do along with their experiences and advantages they gain when using technology. Out of 55 participants, three mentioned disagree, 18 partly agree, 24 agree, and 10 strongly agree.

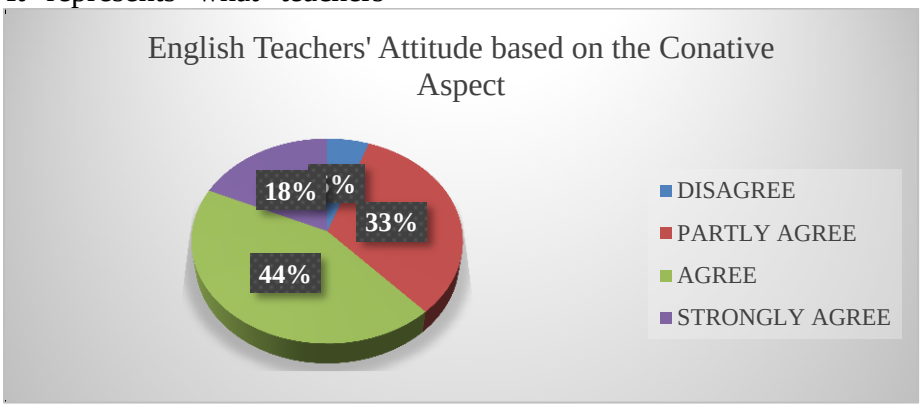

Chart 3 Teachers' attitude towards technology use based on the conative aspect

In terms of the conative aspect, it can be inferred that more than a half of the participants have used ICT in their EFL classrooms. It means that the conative aspect also affect English teachers in making use of ICT. They admit that they are technologically literate enough. Three participants mentioned that they have excellent ability in using ICT, 18 good, 29 good enough. This condition affect them in making use of technology for instructional purposes. It is also supported by the fact that they can access technology including the internet in quite much time. 36 (66.5%) English teachers admit that they use technology for 1-4 hours, 15 (27.3%) for 5-8 hours, and 4 (7.3%) for 9-12 hours. Another evidence is that they are likely to use the online learning system (Google Classroom, Edmodo, Quipper School), social networking sites (YouTube, WhatsApp, Facebook, Instagram, Twitter), and learning applications (Kahoot, Quizlet, Prezi, and Socrative). However, the conative aspect can be considered as the influencing factor in using ICT only if they are supported with the availability of ICT infrastructure.

CONCLUSION

Three aspects building the attitudes - cognitive, affective, conative can be inferred to strongly affect English teachers in making use of ICT for instructional purposes. As a matter of fact, the three components of attitude cannot be separated. The higher the technology knowledge and skills of teachers, the more the inner drive for teachers to actually use it. At the same time, the more teachers use ICT the higher their knowledge and skills of ICT will be.

However, teachers with high technology literacy and intention of using ICT will be able to actualize their potential only if the schools provide them with the ICT infrastructure and access to it.

In addition, as the pedagogical implications, university and school curricula should include the ICT as one of

the compulsory courses and focus on the actual use of ICT for instructional purposes. Teacher professional development on ICT use should become one of the priorities for English teachers. It seems to be urgent to make teachers and students aware of the ICT benefits for teaching and learning.

The present study focused only on uncovering English teachers' attitudes towards ICT use based on the three components building the attitudes – cognitive, affective, and conative. Even though data of the demographic factors are available, in regard to the time constraint, the factors such as gender, age, teaching experiences, and educational background are not explored yet. The study has not yet investigated the relationship between English teachers' attitudes towards technology use and their demographic factors.

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