The Exploration Of Efl Teachers' Positive Beliefs, Self-Efficacy Beliefs, And Pedagogical Beliefs Concerning Ict Integration

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Abstract

Finding out more about the connection among various teachers' beliefs about information and communication technology (ICT) integration will assist teachers in achieving successful integration of technology and enhance the quality of the teaching and learning process. This study examined the connection among various beliefs of English as foreign language (EFL) teachers in integrating ICT. Using a descriptive case study, three elementary-level EFL teachers' beliefs about ICT were investigated based on their positive beliefs, self-efficacy beliefs, and pedagogical beliefs. Data collection employed questionnaires and interviews. The teachers' beliefs were analyzed by using theory from Taimalu and Luik (2019). Meanwhile, Johnson's (1992) framework is adopted to examine pedagogical beliefs, particularly content-specific pedagogical beliefs. The framework was chosen to focus specifically on English subjects. The result showed that there was inconsistency among teachers' beliefs. Some teachers who had positive beliefs about ICT were lack of self-efficacy and pedagogical beliefs. In content-specific pedagogical beliefs, they had beliefs that ICT integration was appropriate for teaching English skill-based and function-based. Moreover, some teachers with low self-efficacy perceived complexity in use, new technologies, and internet connection as barriers to their self-efficacy beliefs in integrating ICT into the class.

Keywords: ICT Integration; Pedagogical Beliefs; Positive Beliefs; Self-Efficacy Beliefs; Teachers' Beliefs

Introduction

The integration of ICT by teachers has been discussed over the past several decades (Zhang et al., 2017). Teachers utilize ICT as an essential component of their teaching (Hutchison & Reinking, 2011). Although teachers may use technology frequently, it does not mean that teachers integrate technology successfully. There are still many barriers that should be faced to achieve successful technology integration (Farjon et al., 2018). The obstacles of teachers' technology integration come from internal and external factors. External barriers include a lack of resources in schools based on technology, time constraints, or insufficient technical support. Teachers' beliefs about technology integration are indicated as internal barriers (Eickelmann & Vennemann, 2017).

Teachers' beliefs substantially impact the efficient use of ICT in the classroom process by

identifying internal and external constraints (Ertmer & Leftwich, 2017). Moreover, Ertmer (2005)

states that teachers' beliefs are the most crucial factor in implementing technology into their teaching and learning process. Technology integration is believed that it will lead to increase student learning (Nilsson & Driel, 2010). In particular, various components of language learning, such as student motivation, vocabulary enhancement, writing abilities, and authentic language, can benefit from technological advancements (Strickland & O'Brien, 2013).

Some researchers have studied technology integration and teachers' beliefs. Ding et al. (2019) investigated the practical technology in the class and teachers' beliefs. The findings indicated that EFL pedagogical beliefs were in line with their technology integration practices. Hsu (2016) has conducted a study concerning teachers' beliefs about technology use. The study examined teachers' beliefs, practices, and barriers to technology integration. This study presented that teachers who hold student-centered beliefs about using technology had strong self-efficacy, positive ideas, and high-level learning activity.

Many studies investigated teachers' beliefs associated with technology integration and focused on aligning beliefs and practices. Only a few studies merely examined teachers' beliefs regarding ICT integration to dig more information on a specific subject area. To fill the gap, the present study examined the relationships among teachers' beliefs based on a particular subject area: EFL. The exploration can assist teachers in achieving successful technology integration and enhancing the quality of teaching and learning in specific EFL subjects.

EFL teachers are the least motivated to use technology compared to teachers of other disciplines (Ravitz et al., 2000). Teachers' technology integration has been criticized as inefficient and slow (Burston, 2014). It is crucial to reveal the technology integration barriers by investigating teachers' beliefs when dealing with the problems. Hence, the study aims to examine EFL teachers' beliefs about ICT integration. The details of the study are provided in the further parts. The parts consist of research methodology, findings, discussion, and conclusion.

Research Methodology

Participants

This research was conducted in two private elementary schools in West Java. The school integrates technology as the primary system. These schools were chosen because of the possible access and the consideration of data availability. Moreover, research participants were selected purposively based on the research objectives in this study. Three EFL teachers who participated have qualifications such as (a) speaking English as a foreign language, (b) using ICT in their teaching, and (c) teaching in elementary schools for 1-2 years.

This study used a qualitative approach in a particular descriptive case study as a method. A descriptive case study describes a phenomenon in its natural setting (Yin, 2018). This method is appropriate for this research because it reveals teachers' beliefs concerning ICT integration in a real-world context.

There are two types of data collection techniques, according to Yin (2018) that employed in this study. The first is survey interviews, the technique of interview employed was a structured questionnaire. The structured questionnaire was arranged based on theory from Taimalu and Luik (2019) about teachers' beliefs and pedagogical beliefs framework from Ding et al. (2019) and Johnson's (1992). The second is short interviews, an open-ended interview was used as a technique. The interviews were conducted in four major processes: conducting the open-ended interview, recording the interview, translating the interview, and transcribing the interview. The interviews used Bahasa Indonesia to gain in-depth answers.

The study will implement a pattern matching from Yin (2018) as a technique for data analysis. The pattern matching compares the research findings with a predicted one based on a theoretical realm that has been made before the data collection process Yin (2018).

Findings and Discussion

Findings

This section presents our findings of (a) the 3 EFL teachers' beliefs and (b) the barriers to teachers' self-efficacy beliefs. The examples shown in the results section are extracts that most represent the themes reported in this study.

Teachers' Beliefs about ICT Integration

The summary of teachers' beliefs about ICT integration in the class from the interviews and surveys is presented in Table 1. In this study, we found that eight kinds of teachers' beliefs of 3 teachers. The beliefs are provided in some codes, and their definition follows it. Each of the beliefs is supported with representative participants' responses.

Table 1: EFL Teachers' Beliefs

Code	Definition	Example response	Source
TPB	Teachers' Positive Belief: Beliefs about the positive impact of technology on student learning (Hsu, 2016)	Technology provides benefits and has many positive impacts on the teaching and learning process because both students and teachers feel lighter and more effortless in learning.	Interview
THSB	Teachers' High Self-Efficacy Belief: High levels of confidence to use technology for teaching and learning (Hsu, 2016)	I am confident when using technology because I also like technology and learning to be innovative creatively.	Interview
TLSB	Teachers' Low Self-Efficacy Belief: Low levels of confidence to use technology for teaching and learning (Hsu, 2016)	I still have doubts about technologies that I have never used, such as Edmodo and Schoology, because I don't know how to operate them.	Interview

TC	Teacher-Centered Belief: Beliefs about incorporating technology into a lecturer or other teacher-centered activities (Hsu, 2016)	With the use of technology, teachers feel that teaching is more accessible.	Interview
SC	Student-Centered Belief: Beliefs about incorporating technologies to support high-level student learning or other student-centered practices (Hsu, 2016)	I put more emphasis on students and focus on learning on the process, not on the results.	Interview
SBB	Skill-Based Belief: The repetition and memorization of native language patterns are the focus of skill-based belief (Johnson, 1992)	EFL students learn the language as long as they listen to the native speaker, speak, practice, and remember the language.	Survey
RBB	Ruled-Based Belief: The students' intellectual understanding of grammatical rules are the focus of ruled-based belief (Johnson, 1992)	During English language learning, teachers must give clear, frequent, and exact presentations of grammatical structures.	Survey
FBB	Function-Based Belief: The use of students' target language in communicative contexts is the focus of function-based belief (Johnson, 1992)	EFL students are learning as long as they understand what they are saying.	Survey

The beliefs in table 1 can be categorized into four aspects. The aspects consist of teachers' positive beliefs about ICT, self-efficacy beliefs, pedagogical beliefs, and content-specific pedagogical beliefs in ICT use. In detail, teachers' positive belief is categorized into the first aspect: teachers' positive beliefs about ICT use. The second aspect is teachers' high self-efficacy beliefs. It has two kinds of beliefs: teachers' high self-efficacy belief and teachers' low self-efficacy belief. Teacher-centered beliefs and student-centered beliefs are part of pedagogical beliefs. Furthermore, the last aspect is teachers' content-specific pedagogical beliefs in the use of ICT. It contains Skill-Based Belief, Ruled-Based Belief, and Function-Based Belief as the orientation in teaching English using ICT.

After categorizing all beliefs, we summarize participants' beliefs that are presented in table 2. The three participants have their orientation for each belief category. They have two kinds of directions for the last aspect, which is content-specific pedagogical beliefs in ICT use.

Table 2: Teachers' Beliefs Tendencies

Name	Beliefs about the positive impact of ICT	Self-efficacy Beliefs	Pedagogical Beliefs	Content-Specific Pedagogical Beliefs in ICT

				use
Teacher 1	TPB	THSB	TCB	FBB/SKB
Teacher 2	TPB	TLSB	SCB	FBB/SKB
Teacher 3	TPB	TLSB	SCB	RBB/SKB

All EFL teachers had positive beliefs about ICT use in the classroom. They realized that technology is a crucial thing for the learning process. Two teachers had low self-efficacy beliefs, and only one teacher had high self-efficacy beliefs. Two teachers described they were not confident enough to use technology in the class because of some factors. In pedagogical beliefs, only one teacher had an orientation to the teacher in the learning process, and the rest were oriented to students. Teacher 3 was the only one who identified her primary orientation in teaching English based on rule-based beliefs. The rest of the teachers had orientation based on function-based beliefs. Moreover, all of the teachers identified themselves had skill-based beliefs as the second orientation.

The Barriers of Teachers' Self-Efficacy Beliefs

Some teachers were identified that they had low self-efficacy beliefs in using ICT for teaching English. The barriers to teachers' self-efficacy beliefs are presented in table 3.

Table 3: Teachers' Self-Efficacy Barriers

Aspect	Barriers	Respondent
Self-efficacy beliefs	Complexity of use	2
	New technologies	2
	Internet connection	1

The factors that made teachers have low self-efficacy beliefs were the complexity of ICT use, new technologies, and internet connection. They perceived that contemporary technologies have high complexity to use. Besides, the unstable internet connection made one teacher lack confidence

Discussion

This study aimed to explore the relationship between teachers' beliefs about ICT integration and the subject area of EFL. The result showed that there was inconsistency among various teachers' beliefs. Some teachers who had positive beliefs about ICT were lack of self-efficacy or pedagogical beliefs. The findings suggested that the essential factors of technology integration are teacher self-efficacy, beliefs about the impact of using technology, and pedagogical beliefs (Taimalu & Luik, 2019). Contrary to previous findings from Hsu (2016), the study examined teachers' beliefs, practices, and barriers to technology integration. This study presented that teachers who hold student-centered beliefs about using technology had strong self-efficacy, positive ideas, and high-level learning activity.

Our findings also showed that pedagogical beliefs could be categorized into two aspects: teachers' pedagogical beliefs in general and pedagogical beliefs in specific subject areas or content-specific pedagogical beliefs. For teaching English, teachers dominantly had a belief that ICT integration was appropriate for teaching English skill-based and function-based. The findings suggested consideration to examine teachers' content area culture; it supports teachers' curricular level technology integration (Howard et al., 2015). In line with Ding et al. (2019), this study noted the role of teachers' content-specific pedagogical beliefs in their technology integration practices. According to teachers' content-specific pedagogical beliefs, the data revealed that there were differences in how they used technology tools to support their English language instructions.

The study also showed that teachers had some barriers to their self-efficacy in technology use. Two teachers perceived that they were lack of confidence to use ICT for teaching because of the complexity of ICT use, new technologies, and internet connection. Teachers recognized the impact of integrating technology into the class; obstacles such as poor working equipment, insufficient technical support, inadequate training, and limited-time impacted their ability (O'Neal et al., 2017). According to a previous study, a lack of technical assistance and resources directly affects technology integration. It indirectly influences teachers' beliefs about the significance of technology and their skill with its use (Inan & Lowther, 2010).

Conclusion and Suggestion

This study examined the relationships among teachers' beliefs based on a specific subject area that is EFL. The findings of this study showed that there was inconsistency among various teachers' beliefs. Some teachers who had positive beliefs about ICT were lack of self-efficacy and pedagogical beliefs. In content-specific pedagogical beliefs, they had beliefs that ICT integration was appropriate for teaching English skill-based and function-based. Moreover, some teachers with low self-efficacy perceived complexity in use, new technologies, and internet connection as barriers to their self-efficacy beliefs in integrating ICT into the class.

This study has several limitations. First, this study merely focused on limited participants, and they were all at the elementary level. Second, the investigation of content-specific pedagogical beliefs was around ICT integration only without considering other aspects of content area cultures. Additionally, the coding of teachers' beliefs was dichotomous and separated participants only into two groups. Moreover, this study suggested that future research should examine the impact of each belief on ICT integration practices.

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