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Understanding English as a Foreign Language (EFL) Teachers' Acceptance to Teach Online During Covid-19: A Chinese Case

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Abstract

To contain the spread of Covid-19, the Ministry of Education of China postponed the opening of schools for face-to-face lessons and launched an initiative of "postponement of school without suspension of learning". Therefore, nearly all educational institutions across China moved from traditional teaching practices to online teaching in the Spring semester of 2020. English language teachers in Chinese universities had to move their traditional physical instruction to online. The paper is designed to develop a conceptual framework of English as a Foreign Language (EFL) teachers' acceptance of online teaching during Covid-19 in Mainland China. Based on the integration of the Technology Acceptance Model (TAM) and Ely's Eight Conditions of Change (ECC) and previous research, six constructs — attitudes, subjective norm, perceived ease of use, perceived usefulness, self-efficacy, and eight facilitating conditions are selected in the proposed framework. A comprehensive understanding of the framework is expected to provide a better insight of the factors that affect EFL teachers' acceptance of online teaching during the pandemic for the stakeholders and future studies.

Keywords: Online Teaching, Technology Acceptance, EFL Teachers, Acceptance Behavior, Facilitating Conditions

Introduction

As an emergency response to the abrupt outbreak of the deadly and infectious disease Covid-19 in late December 2019 in China, the Ministry of Education directed all schools and universities to postpone opening schools for face-to-face lessons. To avoid the negative impact of Covid-19 on education sectors, the Ministry of Education launched an initiative of "postponement of school without suspension of learning" (Ministry of Education of China, 2020) on 28th January 2020, and the quality of online courses was also expected to be on par with the pre-Covid-19 traditional classes. Based on the guideline of the initiative, nearly all educational institutions across China moved from traditional teaching practices to online teaching since the beginning of the Spring semester of 2020 in February. During this crisis, online teaching was mandatory for all teachers rather than a choice for quality teaching (Li,

2021).

Inevitably, English language teachers in Chinese universities had to move their traditional physical instruction to online. All the instruction preparation for the face-to-face new semester had to be adjusted for the unexpected online teaching. English teachers' knowledge and skills of ICT literacy for quick transition to online teaching were challenged (Gao & Zhang, 2020). Previous studies have shown the effectiveness of online teaching on facilitating students' interests, providing an authentic language environment for listening and speaking, and developing students' self-control in learning (Zou, 2013). The literature also showed that English as a Foreign Language (EFL) teachers in Chinese universities were not receptive to online teaching (Teo, Huang, & Hoi, 2018). Therefore, when EFL teachers had to teach fully online unexpectedly, many of them were stressed about their ability to teach online, felt worried about the possible technical challenges, and were unsure about the effectiveness of such a mode of online language instruction (Gao & Zhang, 2020).

The possible explanations for the low adoption of technology integration among English language teachers might be the challenges or difficulties such as anxiety about technology, rare interaction of online learning, and complexity of online teaching platforms (Huang, Teo, & Zhou, 2019). As Moorhouse, Li, and Walsh (2021) stated multimode actions which could easily help teacher-student interaction in a face-to-face classroom were quite challenging to conduct in synchronous online lessons. If these difficulties and challenges are unaddressed, the language teachers would be reluctant to teach online, consequently affecting the quality of online teaching. Hence, it becomes imperative to examine what factors facilitate or hinder the EFL teachers' adoption of online teaching.

Some possible factors directly or indirectly affecting technology acceptance of English language teachers have been explored in previous literature, such as motivational beliefs, external facilitating conditions, and technology use preference and perceptions to technology use. Bai, Wang, and Chai (2019) found that self-efficacy, facilitating conditions, and growth mindset had an indirect role in the intention, while positive effect of interest and negative effect of anxiety on the continuance intention. These studies contributed to the existing knowledge of the online teaching field by examining the possible predictors of acceptance behavior. However, few studies were conducted to identify the possible factors for EFL teachers' technology acceptance in emergency remote teaching. Though Huang, Teo, and Guo (2021) investigated the factors that affected EFL teachers' non-volitional intention to teach online, it was based on a survey of teachers from primary, secondary, and universities but not solely on teachers from higher education. The studies about the adoption of online teaching of EFL teachers from higher education are rare in emergency remote teaching. Given that, the study is designed to examine the possible factors affecting EFL teachers' acceptance of online teaching during the Covid-19 period in the setting of Chinese higher institutions.

Purpose of the Study

The study proposes a conceptual framework to explore the factors affecting EFL teachers' intention to adopt online teaching during the Covid-19 pandemic. The Technology Acceptance Model (Davis, 1989) and Ely's facilitating conditions of change (Ely, 1999) served as the theoretical framework to direct the study. Based on the theoretical framework and previous studies, six constructs including attitudes, subjective norm, perceived ease of use, perceived

usefulness, self-efficacy, and Ely's eight facilitating conditions were integrated to explore how they worked together to influence EFL teachers' acceptance during the emergence of remote teaching.

This study, therefore, intends to develop a conceptual framework of online teaching acceptance so that factors affecting the acceptance of online teaching can be identified. It also provides better insights into Chinese EFL teachers' intentions to adopt online teaching during the unexpected Covid-19 pandemic.

Theoretical Framework

The current study intends to develop a conceptual framework to identify factors predicting the EFL teachers' behavioral intention of online teaching in China. Therefore, suitable and pertinent acceptance theories are needed to achieve this objective. The models adopted in this study were the Technology Acceptance Model (Davis, 1989) and Ely's Eight Changes of Condition (Ely, 1999).

Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) (Davis, 1989) is extensively used in the literature to explain an individual's acceptance behavior. King and He (2006) commented that TAM is a powerful and robust model to understand technology acceptance based on a meta-analysis of 88 studies. TAM traces the effect of the external determinants from cognitive and affective perspectives that influence the internal users' attitude and intention to explain technology acceptance and usage across a broad range of settings (Davis, Bagozzi & Warshaw, 1989). It is a theoretical model to explore human social behavior (Safeena et al., 2013) by focusing on technical system characteristics (Al-Hajri & Tatnall, 2008). Particularly, the main two constructs of the model, perceived usefulness (PU) and perceived ease of use (PEU) of a specific technology underpin system-specific perception to explain the individual's acceptance behavior to technology.

Since TAM was developed, it has been widely accepted, used, extended, and empirically verified to explore the adoption behavior of technology (Verma & Sinha 2018; Xie et al. 2017). Though TAM has been developing, the main components and relationships determined in the TAM have kept stable (Mei, Brown, & Teo, 2018). These salient and relatively stable constructs include attitude, subjective norms (SN), PEU, PU, self-efficacy (SE), and some facilitating conditions. In the model, PEU and PU jointly explain the attitude of intention to use technology directly; PEU has a direct effect on PU; while attitude and PU collectively have a significantly positive influence on behavioral intention (BI) to use; and ultimately the BI influences actual usage (Venkatesh & Davis, 2000). TAM is valid in the context of education to explain the language teachers' intention of technology acceptance, though the explanation for the technical acceptance varies based on the population, culture and context (Sun & Mei, 2020). Given that the present research focuses on the e-learning environment, TAM is relevant to the study as the theoretical underpinning.

Ely's Eight Conditions of Change (ECC)

Another theory adopted to understand the EFL teacher's acceptance of technology is Ely's Eight Conditions of Change (Ely, 1999). The eight conditions of change (ECC) include dissatisfaction with the status quo; knowledge and skills; resources; time; rewards and incentives for participants; participation; commitment involved; and leadership. The

framework of ECC has attempted to explore users' beliefs related to various facilitating conditions to implement innovations with a broader, unifying framework. Valente (2017) explored how new online degree programs were implemented within community colleges using ECC as the underpinning theoretical framework. The finding showed that if champions were persistent, faculty were motivated, and the college provided support, community colleges could successfully implement online degree programs.

The theory provides external control of facilitating conditions to perform a particular behavior and the eight conditions focus on the important influence when performing behaviors. Furthermore, assessing the influence of eight conditions of change on behavior intention also contributes to the existing knowledge of predicting behavior intention.

Two empirically tested acceptance models were integrated to serve the study. These theoretical models address some of the challenges EFL teachers face in accepting a new instructional delivery in their teaching practice. Since environmental and opportunity factors play a critical role in shaping teachers' beliefs, this study intends to identify potential relationships between factors proposed in previous research studies in a new setting i.e., China, where there is a diversity of culture, educational systems, and policies (Kennedy, 2016). Besides, this research also intends to examine the presence of the conditions based on ECC that facilitate EFL teachers' acceptance or implementation of emergent remote teaching, which will be a useful insight to stakeholders.

Research Hypothesis

The study aims to determine the factors affecting EFL teachers' acceptance of adopting online teaching during Covid-19. Six independent variables were selected to examine the dependent variable—the EFL teachers' acceptance of teaching online. All the six independent variables were from the aforesaid relevant theories and previous research studies. In addition, based on previous research, age and teaching experience, two demographic variables, were selected as moderators to examine the extent of the relationship between the selected factors and the EFL teachers' intention to teach online.

Perceived Ease of Use

Perceived ease of use (PEU) is described as the degree to which a person believes that using a particular system would be free of effort (Davis, 1989, p.320). PEU is a theorized construct to have a direct effect or indirect effect mediated by PU on behavior intention (BI) in some acceptance models such as in Theory of Reasoned Action (TRA), Decomposed Theory of Planned Behavior (DTPB), TAM, TAM2, and Theory of Planned Behavior (TPB). Moreover, many empirical research studies have confirmed that PEU significantly affects intention to use technology (Abdullah & Ward, 2016; Jeung, 2014). These studies have continuously verified that if users find the technology easy to operate, they will have greater BI to accept the technology (Liaw & Huang, 2003). For instance, Aburub and Alnawas (2019) evaluated the cumulative influence of the core components of the TAM on the purpose of implementing mobile learning in higher education with 820 student participants from ten universities. The study results showed PEU's greatest effect on embracing mobile learning. This suggests that mobile learning is likely to be used as long as students believe that mobile learning is simple to use.

In online education contexts, PEU has been found to have a substantial effect on users' approval (Rui-Hsin & Lin, 2018). The research examined variables underlying the intention to use e-learning with a total of 277 participants. The findings revealed PEU's positive effect on accepting e-learning for police education and training as well as the significant influence on the PU. De Gagne and Walters (2010) also discovered that faculty were frustrated because they perceived more time is needed to use a system.

Therefore, in the study, PEU is included to predict EFL teachers' BI to teach online in the Covid-19 period. It is possible to expect that if teachers perceive positively that adopting online teaching is easy to use or no added extra workload is required when conducting online teaching, they may have more positive BI to adopt online teaching. Based on the theories and empirical studies supporting the direct effect between PEU and BI and also between PEU and PU, the following two hypotheses were proposed:

H1: PEU will positively affect the BI of EFL teachers to teach online.

H2: PEU will positively affect the PU of EFL teachers to teach online.

Perceived Usefulness

Perceived usefulness (PU) is described as how a person perceives some benefits by using a particular system (Davis, 1989). PU is a theorized direct antecedent of behavior intention (BI) in TAM and TAM2. Many researchers have supported the significant effect of PU on adaptation intention (David, 1989; Elkaseh, Wong & Fung 2016; Joo, Park, & Lim, 2018). All these studies suggest that PU is an important antecedent in the determination of innovation adaptation.

In online settings, previous studies have well documented the positive influence of PU on BI to use of online technology (Cigdem & Topcu, 2015; Zschocke, et al., 2013). In the study among students on the determinants of e-learning adoption (ELA), quantitative research consisting of a survey of 337 students found that PU had a direct impact on ELA (Boateng, et. al., 2016).

In the current research, PU is included to explore the EFL teachers' beliefs about the potential benefits of online teaching. If teachers do not see any changes or improvements to adopt new technology in their teaching, they are less likely to change their usual instructional methods. In other words, if teachers perceive new technology usefulness in their teaching, it is more likely for them to have a positive intention to use it. Hence, based on the theories and empirical studies that PU significantly and positively affected the BI of adoption, the following hypothesis was proposed:

H3: PU will positively affect the BI of EFL teachers to teach online.

Subjective Norm

Subjective norm (SN) is the social influences or social pressure from some important referents around individuals which might affect individual perceptions toward performing a specific behavior (Ajzen, 1991).

In predicting acceptance behavior, SN is a theorized direct factor of behavioral intention (BI) in TRA, TAM2, TPB, DTPB. Besides, many empirical studies have supported SN's direct and significant effect on users' intention (Ho, Ocasio-Velázquez & Booth, 2017; Revythi & Tselios,

2019). These research studies revealed that people might be affected by other people's opinions when involved in a certain behavior.

However, the influence of SN on behavior intention is very complicated and some research found SN was less important in predicting individuals' intention (Sheppard, Jon, & Warshaw, 1988) and had no influence on BI (Mei, Brown & Teo, 2018). It is inconsistent in research findings of SN to individuals' behavioral intention, such as Ndubisi's study (2006) about online learning adoption of students did not find any influence of SN on BI but subjective norms contributing to the indirect effect on the intention to use Google apps (Rejón-Guardia, Polo-Peña & Maraver-Tarifa, 2020), while SN indirectly affected students' acceptance of learning management system by the PU of the system (Binyamin, Rutter & Smith, 2018).

Therefore, in this study, SN explores the external social influence on EFL teachers' acceptance of online teaching. It is possible to expect in the present study, the more positive influence SN exerts, the more likely the EFL teachers perceive the usefulness of online teaching and will have an intention to adopt online teaching.

Besides, another important reason for integrating SN in the study is the special cultural feature in China. Collectivism and Confucianism are the two dominant cultures and affect deeply Chinese thinking and behavior (Phuong-Mai, Terlouw & Pilot, 2005). Under such cultures, the BI of Chinese EFL teachers to accept online teaching might be influenced by the perceptions of important social factors such as the administrators, the experts, the colleagues, policies, and others. Based on the theories and empirical studies that SN affects PU and BI of adoption, the following two hypotheses were proposed:

H4: SN will positively affect the BI of EFL teachers to teach online;

H5: SN will positively affect the PU of EFL teachers to teach online.

Attitude

Attitude towards behavior is defined as "an individual's positive or negative feelings about performing the target behavior" (Fishbein & Ajzen, 1975, p. 216).

In predicting acceptance behavior, the attitude has been theorized as a predicting factor of BI in the TRA, TAM, TAM2, TPB, and DTPB. Besides, attitude has been shown to correlate with BI in previous research strongly (Hanif, Jamal & Imran, 2018; Jafarkarimi, et al., 2016). These studies show that users are more likely to perform a behavior if they have a more favorable evaluation of a particular behavior. Similarly, if teachers have a negative attitude toward improving their teaching through technology, any technology cannot facilitate teaching. The more positive attitude an individual has towards technology, the more likely it is to accept it.

In the current research, attitude is included to examine how it affects EFL teachers' acceptance of online teaching in higher education institutions in China. Previous studies have proven that attitude towards educational technology influences teachers' acceptance of educational technology in the online education field. For example, in the study examining e-learning technology adoption with 210 participants, the findings indicated that attitude presented a significantly positive relationship with e-learning intention (Chu & Chen, 2016).

Therefore, in the study, attitude is included to explore EFL teachers' attitude towards online teaching and at the same time, it predicts their influence on BI to teach online. It is possible to expect that teachers would be more likely to accept online teaching if teachers have a positive attitude towards online teaching. Based on previous studies, it can be assumed that attitude towards online teaching can be selected as a factor to predict the EFL teachers' acceptance of online teaching in the study. Based on the theories and empirical studies that attitude has an effect on BI of adoption, the following hypothesis was proposed:

H6: Attitude will positively affect the BI of EFL teachers to teach online.

Self-Efficacy (SE)

Derived from Bandura's social cognitive theory, self-efficacy is regarded as the belief in one's capabilities to organize and execute the courses of action required to produce given attainments (Banas & York, 2014). In other words, self-efficacy is related to how a person believes in one's ability rather than one's actual skill, as a means of internal self-assessment, self-efficacy functions to understand human behavior in a particular task.

SE has a direct influence on the user's behavioral intention to use technology (Banas & York, 2014; Zhang et al., 2017) and PEU (Mei, Brown, & Teo, 2018). The previous research showed the important effect of SE on the BI and PEU. Likewise, SE predicted PEU strongly in the study on identifying factors that influence preservice EFL teachers' intention to accept Web 2.0 technologies in a Chinese setting (Mei, Brown & Teo, 2018).

In the online environment, several studies have found self-efficacy to have a direct influence on e-learning acceptance. For example, in the study to explore the factors of teachers' using online course management applications, self-efficacy was the most important factor for teachers to adopt an application for online teaching (Zhen, Garthwait & Pratt, 2008).

Regarding the context of the current study, teachers' self-efficacy in online teaching is defined as EFL teachers' confidence in their own ability to accept online teaching in professional practice. Generally, it is expected that EFL teachers who have strong confidence in their ability of online teaching will feel easy and tend to accept online teaching in their teaching practice as opposed to those with a lower level of self-efficacy.

Based on the theories and empirical studies that SE has an effect on BI of adoption and PEU, the following hypotheses were proposed:

H7: SE will positively affect the BI of EFL teachers to teach online;

H8: SE will positively affect on PEU of EFL teachers to teach online.

Eight Conditions of Change (ECC)

Facilitating conditions are the conditions or environment that can assist the users to adopt the technology (Venkatesh et al., 2008). Ely's (1999) work focused on the factors or conditions that can assist in technology adoption. Through his work, he identified eight conditions that have been validated in different working environments across various cultures: dissatisfaction with the status quo; knowledge and skills; resources; time; rewards and incentives; participation; commitment; and leadership.

Eight conditions are interrelated with each other in various combinations, allowing the presence of one condition to be a factor of another condition while, at the same time, the absence of one condition creating a barrier to another condition. When all eight conditions are present, successful implementation is more likely to occur.

In the online setting, many studies employed eight conditions of change to explore the acceptance and implementation of technology (Gaubatz & Ensminger, 2017; Valente, 2017). The study of Strawser, et al. (2018) showed that it is important to take time, meet faculty where they are, provide incentives and rewards when appropriate, and offer resources and leadership when implementing an innovation.

Studies have found that facilitating conditions play an important role in terms of external influence on the decision-making process to affect human behaviors in the e-learning context (Ngai, Poon, & Chan, 2007) and information system studies (Tarhini et al., 2016). Therefore, it is very important to investigate whether facilitating conditions influence technology adoption, after all, the absence of facilitating conditions may represent barriers to acceptance of specific technology.

Regarding the context of the current study, Ely's eight conditions of change in online teaching are defined operationally as the presence of conditions that facilitate EFL teachers' acceptance of online teaching. Generally, EFL teachers with these conditions are expected to feel easy and are more willing to accept online teaching in their teaching practice. Therefore, based on this belief, the following two hypotheses were proposed:

H9: ECC will positively affect the BI of EFL teachers to teach online;

H10: ECC will positively affect PEU of EFL teachers to teach online.

Conceptual Framework

The conceptual framework of the study is proposed based on the hypothesis developed in the previous section. There are six independent variables in the conceptual framework: perceived ease of use, perceived usefulness, attitude, subjective norms, self-efficacy, and Ely's eight facilitating conditions. The behavioral intention of online teaching is taken as the dependent variable. Besides, the whole framework indicates the relationship between the selected variables and how they affect the EFL teachers' intention of teaching online during the COVID-19 pandemic period in mainland China. The relationship among the variables to be studied led to developing the following conceptual framework as shown in Figure 1.

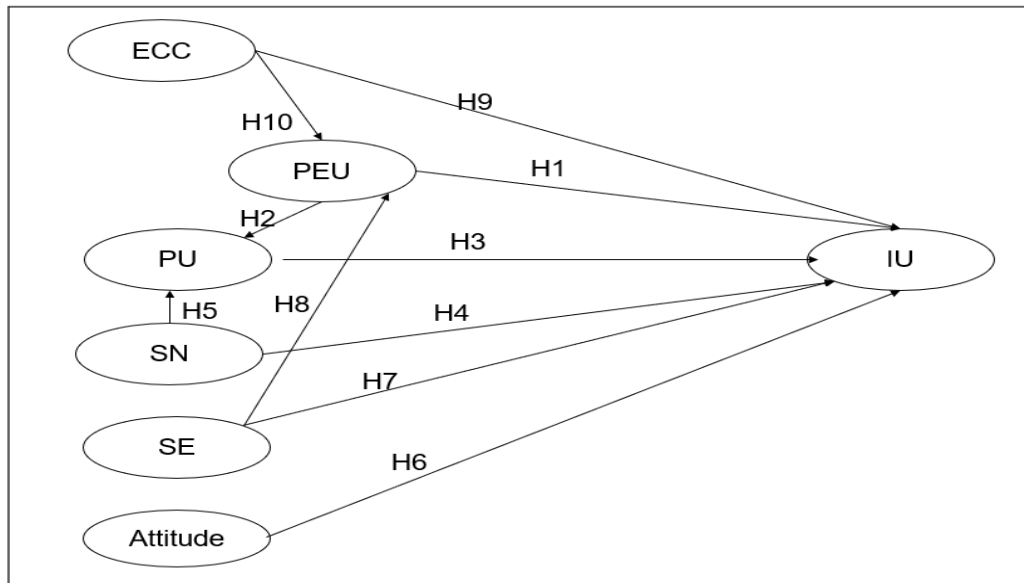


Fig. 1. Proposed conceptual framework

Conclusion and Recommendations

Conducting online teaching has its challenges for EFL teachers during the Covid-19 pandemic period in China. Therefore, the study developed a conceptual framework of technology acceptance that identified six factors affecting the EFL teachers' intention to adopt online teaching in Mainland China. More specifically, integrating the extended TAM with Ely's ECC theories and previous literature, six constructs were identified: attitude, self-efficacy, subjective norms, eight conditions of change; perceived ease of use, and perceived usefulness.

By proposing a comprehensive understanding of factors that affect the EFL teachers' acceptance of online teaching, the study is expected to provide practical recommendations for EFL teachers, teacher professional development, educational administrations, policymakers, and technology enterprises such as providing technical support and training and investment in facilities. For example, suppose perceived usefulness has a significant influence on EFL teachers' intentions to teach online. It would, therefore, be useful to survey teachers and develop the functions that teachers need most when conducting online teaching. Educational administrations and policymakers can host specific lectures and instructions on online education for teachers to have more opportunities to experience the usefulness. Suppose self-efficacy is determined to be an important antecedent to teachers' intention to accept online education. In that case, educational administrations need technical support to ensure teachers' proficiency and confidence in engaging in educational technology or learning platforms, especially during unexpected or challenging events. It is important that future empirical research studies need to be carried out before the proposed conceptual framework can be validated.

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