Information Teaching Ability of EFL Teachers in Application-oriented College

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Abstract. This research carries on the investigation to the college teachers' technology teaching ability clarified the actual situation. The research analyzes the restrictive factors that influence the development of the information teaching ability of the EFL teachers in colleges. The research using random sampling questionnaire surveys and interviews, from three dimensions: information technology teaching awareness, attitude, knowledge, skills, design and implementation. Aimed at investigating information technology teaching ability of foreign language teachers who come from 4 application-oriented college in Wuhan. The research based on descriptive, differential and correlation analysis of questionnaire data, from the teacher self-efficacy, construction and development of foreign language information-based teaching resource system, matching new teaching evaluation system, targeted, diversified and continuous training. The research expounds the concept, strategies to improve the information technology teaching ability of applied EFL college teachers.

Keywords: Foreign Teachers, Information Teaching Ability, Application-Oriented College

1. Introduction
In recent years, the focus of national educational information reform has shifted from the input of infrastructure to promote the effective use of multimedia technology, such as information technology in teaching. With the widespread application of the new generation of information technology represented by Mobile Internet, Internet of Things, Cloud Computing, Large data, etc., smart education has a sufficient development foundation. Various emerging information technologies, such as Mu classes, Micro-classes, Baidu teaching, flipped classrooms, and learning spaces, have been continuously integrated into college foreign language classrooms, which has caused great changes in teachers' teaching methods and a certain "flip". The ten years development program of education information (2011-2020 years) also refers to the urgency of promoting the deep integration of information technology and higher education. How to adapt to
the environment in the wave of information teaching and improve the ability of information teaching has become a hot issue in colleges and universities.

The New Media Consortium (NMC) and the Educause Learning Initiative (ELI) of the United States use the Horizon Report to analyze and predict new technologies. The “Horizon Horizon Report 2017” proposes emerging technologies that affect or promote the application of higher education, and points out that among the challenges that hinder the application of new technologies is how to improve college teachers’ Information technology teaching ability to adapt to the new teaching ecological environment. There are three main types of research on teachers’ information technology teaching ability: theoretical research, research on the application of new technologies and innovation, and research on teachers’ ICT capabilities. In 2005, American scholars Koehler and Mishra proposed the concept of TPACK on the basis of subject teaching (PCK), that is, the ability to integrate subject teaching knowledge with technology. This theory provides a good idea for studying the knowledge structure of informatization teaching for foreign language teachers. Based on this, Chinese scholar Wang Wenjun proposed a knowledge structure framework for teachers’ Information technology teaching capabilities, as shown in the figure:

![Knowledge structure framework of teacher’s information teaching ability](image)

He proposed that teachers’ knowledge is the fusion of teaching technology knowledge, pedagogy knowledge and disciplinary knowledge. According to the different levels of teacher’s information technology teaching, it can be divided into three levels of knowledge: the first level of knowledge is the basic knowledge of teachers’ information technology teaching ability, including subject professional knowledge, general teaching method knowledge, and subject teaching knowledge; The second level of knowledge is the main body of knowledge of teachers’ information technology teaching ability; the third level of knowledge is the comprehensive knowledge of information teaching. The focus of research at home and abroad has shifted from theory to practice, and most of them are the study of elementary education in elementary and secondary schools, neglecting undergraduate education, and paying particular attention to applied universities[1-3].

2. Research design

This research questionnaire is based on the TPACK theory of Punya Mishra and Matthew J. Koehler and the UTAUT theory which proposed by Venkatesh. Based on the teacher’s information technology teaching ability structure, from individuals’ perception of information resources is affected by personal characteristics, organizations, and social factors, which can affects their behavioral intentions and in turn affects they using information resources. UTAUT is used as the analysis framework, including independent variables (cognitive beliefs, self-efficacy, community influence and convenience) and dependent variables (behavioral intention, use of support), and analyze the relationship between the variables. Reorganization in
three dimensions: information technology teaching awareness and beliefs, knowledge and skills, and design and implementation [4].

2.1. Survey respondents
This research aimed at investigating information technology teaching ability of foreign language teachers which come from 4 application-oriented college, in Wuhan. The author has conducted 150 copies of questionnaires and collected 123 copies by combining the methods of mailbox distribution and paper questionnaire distribution for foreign language college teachers in 4 colleges, of which 102 were effectively supported. In this study, 4 teachers were selected as the subjects of case studies in the questionnaires of the questionnaires. A variety of data sources were collected, mainly through the use of interviews, observations, and documents, which allowed the researcher to dig deeper into each participant information. The participants were based on gender, age, teaching age, professional title, and teacher’s education background. There are some differences in the demographic variables, and the sampling principle of maximizing the differences is guaranteed as much as possible.

2.2. Research process of implementing Q sorting
The implementation of Q sorting can be explained as encompassing five key phases: (1) generation of the concourse, (2) construction of the Q set, (3) selection of the P-set (the group of participants), (4) Q sorting, and (5) analysis and interpretation of the results. The figure is a flowchart of research processes, shows how to implement Q sorting.

![Figure 2. Implementation steps for Q sorting in this study](image)

2.3. Analysis of the questionnaire’s reliability and validity
This questionnaire mainly uses the Alpha measurement method to analyze the internal consistency reliability assessment method of the questionnaire. Based on the questionnaire that has been matured, 50 teachers were asked to make a pre-test after several revisions. The result Cronbach a coefficient is 0.871, which indicates that the questionnaire meets the reliability requirements. The reliability analysis results are shown in following table.
Table 1. Reliability statistics

| Cronbach’s alpha | K   |
|------------------|-----|
| 0.871            | 64  |

2.4. Conducting the case study
After analysis of the questionnaire items and reliability and validity tests, most variables have good credibility. The items are acceptable. The formal questionnaire consists of three parts.
The first part is “personal basic information”, including the subject’s gender, age, job title, college teaching experience, educational background, whether graduated from a normal major, type of university, etc.
The second part is “investigation on the status of teacher’s information technology use”, including the channels for acquiring foreign language information resources. The use of different stages of the course, the teaching context of the use of teacher’s information technology, the type of use, and the perceived information resources for the provision of teaching and language skills. This section is a multiple-choice question to measure the subject and status.
The third part is “Investigation on Influencing Factors of teachers’ information technology use”. This part is a structured design scale question. Based on the UTAUT theory, it summarizes 11 variables that affect the self-efficacy and use of information resources of foreign language teachers.

2.5. Questionnaire and interview analysis report

2.5.1. Analysis of teachers’ information technology teaching awareness and beliefs. Low enthusiasm for information technology teaching at two ages: 30-40 years old and 50 years old. The survey shows that teachers with the lowest frequency of information technology teaching are teachers over 50 years old, followed by teachers of 30-40 years old who are not willing to teach by information technology. Although they are interested in information technology teaching, the using of information technology teaching is not frequently. The reason is that these teachers are in the rising career period, with a large amount of class hours and no more free time to carry out information technology teaching research [5, 6].

2.5.2. The self-efficacy of information technology teaching is different in multiple characteristic variables. The teachers self-efficacy in their “information-teaching”literacy is examined. Different teachers have very different assessments of their ability in this area, sometimes they cannot reflect the true level Ability; Secondly, many teachers’ understanding of teaching self-efficacy is teaching activities under the condition of technical integration, and the quality of teaching is directly related to the provisions of the school system. Therefore, this teaching ability is considered to be the basic quality of foreign language teachers.

2.5.3. The effectiveness of information technology teaching has been recognized. Compared with traditional teaching methods, the biggest advantage of information-based teaching is not to improve the teaching quality, but it can provide image teaching that traditional blackboards, chalks and other teaching tools can not display, stimulate students' interest, and beat the classroom atmosphere. At the same time, information-based teaching has an irreplaceable role in resource sharing and distance teaching. Teachers and students can discuss and solve problems anytime, anywhere. There are still different opinions on whether information-based teaching can achieve teaching reform and innovation.
3. Research implications and recommendations

Based on the present research on teachers’ information technology ability and use status, as well as influencing factor models, the researcher believes that to promote the acceptance and use of information resources for foreign language teachers in colleges, it is necessary to improve teachers’ intentions and improve convenience conditions to promote usage behavior. In addition, teachers’ self-efficacy, information technology teaching knowledge and the use and training of information technology teaching should be improved to raise teachers’ intentions to use resources and indirectly promote the use of information resources. Based on this, the study makes the following recommendations:

3.1. Technology teaching awareness and beliefs

According to the study, information technology teaching awareness and beliefs can directly affect teachers’ intention to use technology teaching. Therefore, relevant departments should regularly organize lectures, seminars, and demonstration classes of information resources to popularize and promote the relevant knowledge and teaching applications of certain information resources. Experts and teachers in the field of educational technology and foreign language teaching can be invited to give lectures, especially to explain and demonstrate the technical requirements of specific information teaching, application models, and successful cases combined with foreign language courses, so that foreign language teachers are truly aware of information resources. The importance and practicality of foreign language teaching.

3.2. Information technology training

Take foreign language information technology training as an important content of the professional development of foreign language teachers. Training should according to the characteristics of different colleges, it is planned and carried out systematically. The key to training should be teachers’ information—teaching literacy and the integration of technical courses, that is, the improvement of TPACK ability, so that teachers can re-examine their role in the technology-enhanced language classroom, improve the awareness of information teaching and promote innovative teaching; At the same time that literacy improves, teachers from different groups should conduct targeted training courses: active converters already have relatively mature information literacy and a strong sense of self-efficacy. Training for this group should pay more attention to high-level applications and discuss excellent cases at home and abroad to maintain the willingness and confidence of the group to continue to use; the group of conversion explorers has the largest proportion, they have a certain amount of information literacy, but they are not as active in teaching and information resources so training for this group should focus on improving technical capabilities and sharing successful teaching cases to promote them to become “positive converters”.

3.3. Information technology teaching contests

In recent years, foreign language teaching competitions in universities have been successfully held, which provide a lot of experience for the professional development and teaching practice of foreign language teachers. Similarly, researchers believe that organizing specialized information technology foreign language teaching competitions and setting corresponding rewards can stimulate teachers to carry out creative teaching activities. From community influence, it can achieve the purpose of using information resources.

3.4. Assessment

Strengthen the assessment of teachers’ information technology teaching. Taking information technology as one of the indicators of teachers’ annual performance assessment, and increase its weight ratio in the evaluation. Only when relevant regulations are implemented can teachers find ways to improve the effectiveness of foreign language teaching and information resource integration.
3.5. Cultural atmosphere
Establish a cultural atmosphere for foreign language information technology teaching. The organizational culture of a college is crucial, culture can infect and affect people. The campus culture encourages individuals a subtle effect. Therefore, we should actively create a good information technology teaching atmosphere. Language teachers use information resources for teaching, and everyone explores the use of information technology in the teaching process, regularly hold seminars to explore and share experiences and difficulties.

4. Conclusion
With the widespread application of the new generation of information technology. The research expounds the concept, strategies to improve the information technology teaching ability of applied EFL college teachers. College English teachers should follow the trend, reform their teaching methods and achieve their professional development.

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