

A Survey of College English Teachers' Ability to Manage English Teaching with Information Tools

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Abstract. In the process of introducing modern information technology in college English teaching, teachers need to make scientific re-position of their roles, update teaching ideas, enrich and improve their teaching ability. College English teachers' ability of managing teaching with information tools is the core competence that teachers need when integrating information technology with college English teaching. Based on the literatures, the paper concludes the ability composition of college teachers' management of teaching process by using information tools. The paper continues to find out the effective incentive mechanism by making questionnaire survey in three universities with different informatization degree, comparing the present situation of teachers' management of teaching process ability with information tools in each university.

Introduction

In terms of wide application of modern information technology (especially the Internet and multimedia technology), there is no doubt that infinite fresh impetus are injected into college English teaching and new teaching platform provides convenience to college students' English comprehensive ability training. Nowadays, more and more experts in the field of teaching formed a consensus gradually: college English teachers have to actively use modern multimedia and network technology. The influence of modern information technology on college English teaching is not only confined to the hardware update of the transformation, but more important is to completely change teaching methods and the apparatus of obtaining teaching information, which would directly produces tremendous change to the traditional college English teaching and greatly promotes the development of college English teaching.

In the traditional teaching concept, teachers undertake the responsibility of "Preaching, impart knowledge and solutions" and are the absolute authority of knowledge; however, in the new teaching mode, teachers design and develop learning process and resources, guide and promote students' learning process, organize and collaborate students' cooperative learning, monitor and evaluate students' learning process, are no longer the speaker of class. The role of teachers has been changed; the content of teachers' teaching ability has been also changed. In order to more effectively integrate informatization technology with college English teaching, teachers need to define its role, update teaching ideas, enrich and improve the ability of teaching with information technology scientifically, and help students effectively use multimedia, network information.

ELT Advisory Board under the Ministry of Education emphasizes in the college English teaching guide (2015) "to promote the fusion of modern information technology and foreign language courses, to make the teaching contents, teaching methods and means, learning style change to achieve effective teaching"[1]. Encourage teachers to construct and use micro lessons, massive open online courses (MOOCs), use high-quality online to reform education resources and expand the teaching content, implement the mixed teaching model as flipped class based on class and online courses to make the students tends to develop in active learning, self learning and individualized learning.

College English teachers' ability of managing teaching with information tools is the core competence that teachers need when integrating information technology with college English teaching. Based on the literatures, the paper concludes the ability composition of college teachers' management teaching process using information tools. The paper continues to find out the effective incentive mechanism by making questionnaire survey in three universities with different

informatization degree, comparing the present situation of teachers' management teaching process ability using information tools in each university.

Literature Review

When technological pedagogical content knowledge (TPCK) arrived on the scene as a new way to talk about the knowledge base teachers needed to use technology effectively in the classroom (Koehler & Mishra, 2005) [2], teacher educators were quick to embrace it. TPCK, currently referred to as TPACK (Thompson & Mishra, 2007), outlined seven different types of knowledge required for technology integration to occur: content knowledge (CK), pedagogical knowledge (PK), technological knowledge (TK), pedagogical content knowledge (PCK), technological content knowledge (TCK), technological pedagogical knowledge (TPK), and technological pedagogical content knowledge (TPACK) [3]. According to two recent reviews (Abbitt, 2011; Koehler, Shin, & Mishra, 2011), [4]more than 300 unique manuscripts, including journal publications and conference proceedings, have been published on this topic. Yet despite this large body of work, it appears as though little progress has been made towards providing either a simple, precise definition of the TPACK framework and its seven knowledge constructs or developing a robust way to measure it (Graham, 2011). [5]

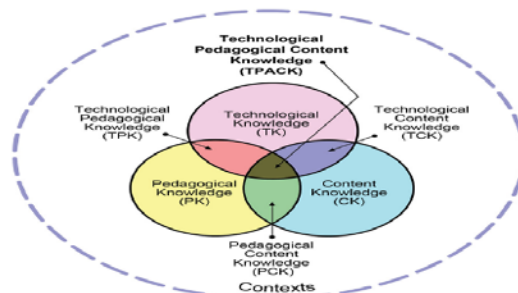


Fig.1 TPACK framework (Mishra and Koehler 2006)

Wen-jun Wang and Wang Weijun (2012) thought that “information-based teaching ability is divided into six sub-abilities: information-based teaching migration ability, information teaching fusion ability, information teaching communication ability, information-based collaboration teaching ability, promoting information-based learning ability of students”. [6]

Reconfiguration of information technology tools not only depends on the information technology, but also college English teachers' design and grasp on the process, activities and strategies on teaching. Hawlafin, R.D., & Savenye, W.C. (1993) [7] thought that fully use of information technology tools can not only stimulate students' learning, realize the share and regeneration of views and learning resources, but also organize scientific activities so that students can participate in exploring process and encourage them to listen and learn from others (Warwick, Wilson & Winterbottom). [8]

In addition, Warwick et al (2006)[9] also mentioned that teachers need according to students' cognitive style and characteristics to stimulate their learning interest taking advantage of proper use of information technology tools. Moreover, in order to better integrate technology in teaching, teachers can connect students' learning needs and learning activities according to the content and then connect them with the technology promoting associated activities implementation smoothly. In teaching, discovery learning or exploration learning is an important learning method, and online learning provides favorable conditions for it. Using online learning platform, teachers can effectively promote students to carry on independent inquiry and cooperative learning, promote the cooperation and communication between teachers and students[10]. Therefore, development of the network learning activities becomes an important work of information technology teaching. In the process of rich teaching of information technology tools, aim at the problems in students' learning, teachers should give timely guidance and carry out corresponding evaluation strategy to their performance.

This study argues that college English teachers should do as follows, (1) stimulate and maintain students' learning motivation; (2) promote the sharing and regeneration of teaching content; (3) carry out online learning activities; (3) manage teaching process; (4) cope emergency; (5) promote the information communication; (6) information-based evaluation. [11]

Research Method

To further comprehend the status of college English teachers' teaching ability of using information technology, college English teachers' ability using information tools questionnaire is designed. Questionnaire adopts Likert (Likert scale) level 5 scoring method, 1 is "basically in-conforming"; 2 is "a little conforming"; 3 is "Neither conforming nor in-conforming"; 4 is "basically conforming"; 5 is "completely conforming". In May of 2018, the author went to A, B and C for questionnaire survey with a sum of 450 students and 160 college English teachers for the survey.

Questionnaires commissioned parts of teachers in the three universities and required them telling students the purpose and significance of the survey and matters needing attention of the questionnaire, and then took back after filling. Teachers' questionnaires of the three universities were distributed during the meeting. During the questionnaires distribution, the author clarified the purpose and significance of this survey, matters needing attention and acknowledgement to teachers. The survey distributed 160 questionnaires to teachers and took back 155 and 450 questionnaires to students and took back 420. After careful observation analysis, eliminate invalid questionnaires of teachers and the students (all subject to choose the same answer or just finish part of filling) with 33 and 5 respectively. Therefore, there are 150 questionnaires of teachers and 387 questionnaires of students as the data source of the questionnaire survey analysis. After careful arrangement, they are inputted in SPSS19.0 system for reserve.

Results and Discussion

The Questionnaire Data Analysis and Discussion.

With continuous development of the information age, classroom teaching also has new requirements for teachers' role. On the one hand, the teacher must skillfully master all kinds of common information tools to assist in teaching; on the other hand, it requires teachers contacting these tools with students to mobilize their enthusiasm and participate in class activities for playing the role of main body of students.

Table 1 Item analysis on the ability of college English teachers managing teaching process using information tools

Item	Mean value	Standard deviation
1. I can use information technology tools to supervise students' online learning activities and learning progress, timely to give guidance to the problems existing in students.	3.99	1.221
2. I can provide digital college English teaching resources to students by means of network.	3.57	1.430
3. I can flexibly use the information technology tools for teaching service.	3.95	1.180
4. I communicate with students by means of network communication software (Email and QQ, et al) to urge the learning after class.	3.95	1.255
5. I can use information technology tools to make summary.	4.18	1.159
6. School established online teaching evaluation management mechanism, and give me my teaching feedback in a timely manner.	3.48	1.278

In mathematics, the mean value theorem states, roughly, that for a given planar arc between two endpoints, there is at least one point at which the tangent to the arc is parallel to the secant through its endpoints.

This theorem is used to prove statements about a function on an interval starting from local hypotheses about derivatives at points of the interval.

More precisely, if a function f is continuous on the closed interval $[a,b]$, and differentiable on the open interval, then there exists a point c in (a,b) such that:

$$f'(c) = \frac{f(b) - f(a)}{b - a}. \quad (1)$$

It is one of the most important results in real analysis

The ability using information technology tools managing teaching process refers to the ability that in order to achieve the teaching goal, using information tools to manage each link in college English teaching. For example, motivate and maintain students' ability of learning motivation and ability of coping emergency. As shown in Table 1, item 1 using information technology tools to supervise students' online learning activities and learning processes ($M=3.99$) shows that most of teachers can use information technology tools to supervise students' online learning activities and learning progress, timely to give guidance to the problems existing in the students. Item 2, providing digital college English teaching resources to students via the network ($M=3.57$) shows that most of teachers has sharing and regenerative ability on the teaching content. Item 3, information-based class teaching method ($M=3.95$) shows most of the teachers gradually get rid of traditional teaching idea, sets up the information-based teaching concept, and applied in practice. Item 4, in the process of teaching management ($M = 3.95$) shows that in the process of college English teaching, most teachers use internet technology such as network chat rooms and audio conference to monitor network learning, answering questions and feedback in time. Item 5, information-based evaluation ($M=4.18$) shows that most of the teachers use information technology tools to make summary work. Item 6, teachers' teaching information-based evaluation ($M=3.48$) shows school established the online teaching evaluation management mechanism and some teachers can receive feedback in time through the network.

Table 2 Item analysis on the ability of college English teachers in the three colleges managing teaching process using information tools

Item	A		B		C	
	Mean value	standard deviation	Mean value	standard deviation	mean value	Standard deviation
1. I can use information technology tools to supervise students' online learning activities and learning progress, timely to give guidance to the problems existing in the students.	4.12	.872	3.98	1.348	3.86	1.385
2. I can provide digital college English teaching resources to students via network.	4.30	1.249	2.42	1.416	3.98	.769
3. I can flexibly use the information technology tools for teaching service.	4.08	1.304	3.94	1.331	3.82	.853
4. I communicate with students by means of network communication software (Email and QQ, et al) to urge the learning after class.	4.22	1.363	3.90	1.344	3.98	1.059
5. I can use information technology tools to make summary.	4.18	1.273	4.18	1.054	3.84	1.057
6. School established online teaching evaluation management mechanism, and give me my teaching feedback in a timely manner.	3.62	1.176	3.06	1.391	3.76	1.170

According to the survey, "information technology tools to supervise students' online learning activities and learning process" of A has the highest mean value with 4.12;" communicate with students via network communication software (E-mail, QQ, etc.) and supervise after-school learning"

has the highest mean value with 4.22, which indicates that the supervision capacity of information technology teaching in A is relatively strong. In the process of college English teaching, they are able to use information technology to monitor network learning with the ability of answering questions and feedback in time.

Item 2 “I can provide digital college English teaching resources to students via network”, A has the highest mean value with 4.3. According to the survey, teachers of A have strong ability of teaching content regeneration and sharing.

According to the survey, Item 3 “I can flexibly use the information technology tools for teaching service.”. The mean value of A is 4.08, which shows that teachers can take advantage of information teaching technology flexibly through learning and teaching contents.

According to the survey, Item 5 and 6 information-based teaching evaluation, teachers of A, B and C are similar with advantages and disadvantages. A and B done relatively well in “information technology tools (such as electronic file cover et al) are used for process evaluation and summative evaluation to the learning of learners”. C established online teaching evaluation management mechanism and gave feedback of teaching to teachers in time.

Influence Factors Analysis.

As shown in Table 3, self-efficacy, college "human" and career development are the predictive variables of ability development using information tools for teaching. Where, college "human" and career development have greater influence. Whether students often use information-based means to learn English, whether the leaders encourage teachers in their daily to use information-based teaching in the teaching process; however, career development factors reflected that whether colleges take information-based teaching quality as an index for year-end appraisal assessment, title evaluation and annual teaching quality assessment; whether colleges organize the training for culturing teachers' informatics ability [12]. From the questionnaire item, it reflects whether teachers have confidence in using the following tools: email reading, PPT software and QQ, college English autonomous learning platform of teacher management system.

Table 3 Multiple regression results of Ecological factors and the ability development of using information tools

Model	The nonstandardized coefficients		The standard coefficient	t	Sig.
	B	standard error	trial version		
(constant)	-.375	.990		-.378	.706
1. Attitude and consciousness	-.003	.066	-.001	-.038	.970
2. Self-efficacy	.210	.065	.107	3.222	.002
3. Motivation	.075	.097	.030	.778	.438
4. College “ Content”	.113	.092	.062	1.226	.222
5. College “ Human”	.529	.105	.222	5.019	.000
6. Career development	1.042	.063	.554	16.555	.000
7. system	.107	.080	.034	1.338	.183
8. Time requirement	.058	.076	.021	.771	.442
9. training	-.128	.074	-.045	-1.723	.087

a. dependent variable: the ability of using information tools to manage teaching process

Suggestions and Conclusions

Improve Teachers' Self-Efficacy of Information Technology.

Teachers' self-efficacy is related to their teaching attitude, imagery, behavior and choices, and ultimately affects students' academic performance[13]. Teachers with high self-efficacy have more confidence to themselves, higher psychological health level, more confidence in the work and more strong willpower. For the encountered difficulties and setbacks in information technology and curriculum integration, they can find the reasons correctly and strive to improve their information literacy[14].

Formulate Policies and Stimulate to Use Information Tools.

1) Leaders must attach great importance to information-based work, intensify propaganda for information-based development, build suitable atmosphere for the development and make the importance of information-based teaching probe into teachers' heart; 2) Develop a reasonable development plan, perfect relevant rules and regulations of informatization development to make the training of related technologies be more standardized, institutionalized and systematized; 3) Increase capital investment, speed up the construction of network development platform[15]; 4) Perfect the teachers' training mechanism for time secure of teacher's development and encourage teachers to study at home and abroad and study for a degree; 5) Reform teacher evaluation system to establish the mechanisms stimulating their own professional quality to arouse the enthusiasm and initiative; 6) try to build the learning organization to provide more professional independent development space for teachers.

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