Research on Factors Influencing the Development of College English Teachers' Information-based Teaching Ability

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Abstract: *Modern information technologies are developed continuously and popularly used in college English teaching. Successful integration of IT in English teaching requires teachers to rethink their own roles, update teaching concepts, and enhance their teaching competence. The working condition of College English teachers is a multi-dimensional ecological system, which not only regulates, but also stimulates them. Therefore, when discussing the development of IT capabilities for college English teachers, it should be considered within an ecosystem. All the influential factors shall be considered in the education of teachers, and comprehensive supports be provided for the development of informational teaching competence of college English teachers. This article conducts a questionnaire survey on three universities at different stages of informatization technology development. By comparing and analyzing the data, the relationship between the development of information technology teaching ability of English teachers in universities and their living environment was examined. The results show that the 11 factors are related to the status quo of College English teachers' teaching competence with IT. The results of multiple regression analysis show that the most predictive factors for College English teachers' information teaching competence are 3 variables (attitude and awareness, computer self- efficacy, motivation), 3 medium variables (information facility, personal factor, career development) and 3 macro variables (policy and regulation, times requirements, training). Some suggestions to develop the teaching ability of College English teachers with IT are offered.*

Keywords: *College English Teachers, Information-Based Teaching Ability, Factors Influencing the Development*

1. Introduction

Now, Entering the 21st century, so as to meet the new requirements of the new era, China's college English conducted a large-scale and substantial reform that taking the improvement of students' comprehensive quality and ability of English as an objective by clearly strengthening the Internet and multimedia teaching system for teaching English in universities.

ELT (English Language Teaching)Advisory Board under the Ministry of Education emphasized when it drew up *College English Teaching Guide (2015:1-20)* that "promote the integration of modern information technology and foreign language courses to change the content, teaching methods and approaches, and learning styles of university English teaching to achieve effective teaching".[1] The ninth part of *the "Teacher Development" Guide* emphasizes " important role of teacher in realization of national education plan". The quality and competence of teachers are key factors affecting the quality of teaching. University English teachers must be proactive in adapting to the new circumstances of higher education development, to the new requirements of the university English curriculum framework and to the development needs of university English teaching, and continuously improve their professional standard and teaching competence, in addition to mastering professional theory of the discipline. In addition to knowledge, it is necessary to have the awareness of curriculum construction, students as the key role of learning, and teaching reform. It is also significant to have the ability to select teaching content, adjust teaching methods and means, and use modern education technology.

Based on a questionnaire survey of three universities with different levels of informatization, this study investigates the informatization teaching ability and development environment of English teachers in various universities, and analyzes and compares the obtained data to further analyze the

relationship between the status quo and the environment. In this paper, some suggestions are made to facilitate the development of the teaching ability.

2. Literature Review

Teaching competence is an essential element of the professionalism of teachers and a strong support for the quality of education. IT teaching refers to a teaching activity in which educators and learners utilize new methods of IT and modern educational media to share educational information resources in an information environment. In each step and element of the teaching process, students' learning is the basis and the means to develop their learning skills, and through the organic integration of IT, students' interest in learning is cultivated and independent learning is achieved with good teaching results.

Informatization based teaching competence refers to the ability of teachers to utilize emerging technologies to solve problems in teaching in the setting of informatization, including six items: the use of information tools, the design of teaching with IT, the scientific knowledge of IT, research and reflection of informatization teaching and development of students' information learning (SHEN, 2018).[2]

A lot of research and practice confirmed that in accepting and implementation of technology integration, whether teachers have enough time, the influence and support dynamics producing, whether teachers concern, teacher's professional ability, fear of technology, psychological effect, cannot fully understand and the lack of hardware facilities can affect the development of teachers' information ability.

Brickner (1995) divided the factors preventing teachers' innovation change appeared in researches into external factors and internal factors, respectively as "primary obstacle " and "secondary obstacle". The primary obstacle is hardware and management and the second obstacle is the internal factors of teachers. Teachers have many difficulties to overcome in the process of novice to expert. [3]

Yuan Huiling (2015) proposed that "to improve the competence and quality of college English teachers under the storm of MOOCs, we must give full play to the government's leading role, the synergy of society, the main role of higher education, and the role of teachers.". [4]Licheng Luo (2019) stated that the TPACK of integrated technology provides a reference for the comprehensive integration of IT and foreign language courses, and provides guidance for the professional development of university English teachers. TPACK has become essential knowledge for teachers in the information age.[5] Zhengxia Jia (2019) found that Major factors affecting College English teachers' blended learning context are identified which fall into and external factors of the teachers. The former refers to abilities and motivation and the latter the situation of environment and the students (Fig.1.)[6]
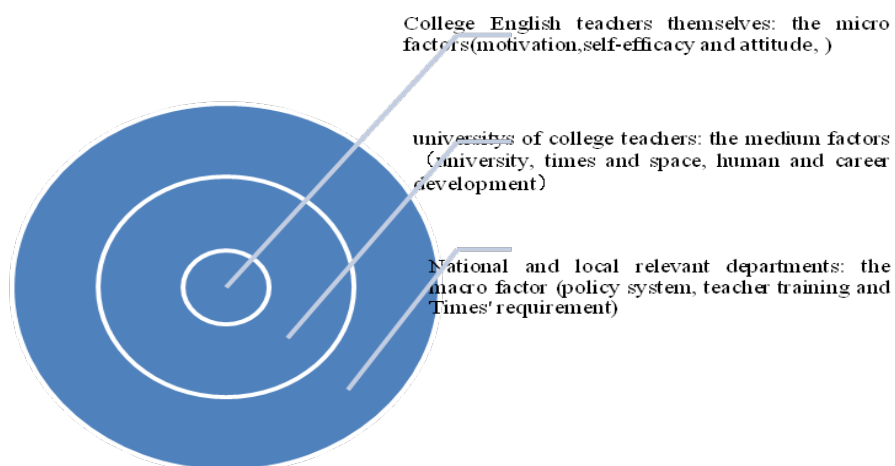

Figure 1. The sub-factors on the development of teachers' information-based teaching

Language teachers' cognitive development is determined by the development of their beliefs to a great extent (Borg, 2006; Burns, 2015). [7]In general, EFL teachers' beliefs, explicit or implicit, form the parts of heir pedagogy that are context-bound, experience-based, culture-specific, open-oriented belief systems. This suggests that EFL teachers' beliefs represent a mixture of personally constructed explicit and implicit theories of language and language learning, mediated by experiencing, negotiating

and responding to the environment. (Levin, 2015)

In summary, the above studies are of certain value, but their research focus on one aspect of teachers in term of teaching with IT, lacks overall consideration. From an ecological point of view, college English teachers are in a complex ecological environment. It is important to make a researched-on college English teachers' information-based teaching competence and development environment [8-9].

3. Research Method

In order to understand the status quo of university English teachers' informatization teaching competence, a questionnaire was designed on the capacity of college English teachers to use information tools. It is composed of three parts: the basic information of the individuals, questions to find out the status quo of college English teachers' informatization teaching competence and questions to identify the factors that affect the development of information technology teaching ability of college English teachers. The questionnaires all use the Likert scale 5 scale, 1 = "basic non-conformity", 2 = "not very consistent", 3 "between", 4 = "basic match", 5 = "full match" ".

The author networked the questionnaire through wjx.cn platform and conducted the survey through the QQ group and Email to promote the questionnaire to college English teachers. Processing the collected data through SPSS software, the structural validity and reliability of the questionnaire were examined, and the secondary indicators of the informationized teaching ability were reconfirmed indirectly. In this online survey, a total of 180 questionnaires were collected. The questionnaires were mainly delivered through the QQ group, Email and other platforms. On one hand, the researcher sent the questionnaire link address to college English teachers in a grouped way. On the other hand, the questionnaire link address was forwarded by other person. Therefore, the questionnaires were delivered in an open way with orientation to wide objects, resulting in difficulty in making statistics of the recovery rate. After testing, the author abandoned 3 invalid questionnaires with the completion time less than 510 seconds. The author selected 177 effective questionnaires, with an effective rate of 98.3%. By using the critical ratio method (critical ration) to analyze its items, that is, according to the first 27% and the last 27% of the total score of the questionnaire (A1∽A33), group according to the level. Then find the average of the two groups in each item and analyze the significance of the difference. After Levene's Test for Equality of Variances, it was found that all were less than .05, reaching a significant level, indicating that the 33 questions had discrimination. In order to further determine the effectiveness and reliability of the questionnaire, this study used the Cronbach a coefficient method to test the reliability. By examining the a-coefficient of the entire questionnaire, it was found that its 0 value was .939 [10-12].

This study uses stratified random sampling, known as stratification. In stratification, each layer is formed based on the common attributes or characteristics of its members. According to the characteristics, universities in Henan can be divided into "211" colleges, provincial-ministerial colleges, and provincial college. There are 127 ordinary colleges and universities in Henan Province, including 50 undergraduate schools (including independent colleges). In this study, three universities, Zhengzhou University, Henan University of Technology, and Zhengzhou University of Light Industry (hereinafter referred to as A, B, and C), were used as the objects of investigation. In May 2022, the author went to the A, B, and C schools to conduct a questionnaire survey. A total of 160 college English teachers participated in the survey. A total of 160 teacher questionnaires were distributed, and 155 copies were collected in this survey. After careful observation and analysis, the invalid teachers were removed (all the questions were selected for the same answer or only 5 of the completed questions were completed, and 150 valid teacher questionnaires were collected as the data source for the questionnaire analysis.

4. Data analysis

4.1 Correlation Analysis on the Status of College English Teachers' Information-Based Ability and Its Ecological Impact Factor

In response to the ten major factors that affect the development of information-based teaching abilities of English teachers in universities, they are divided into macro, medium and micro angles. Among them, the macro ecological impact factors include the system, training and times' request; the medium ecological impact factors include college "hardware", college "human", career development

and times and space; the micro ecological impact factor is composed of attitude and consciousness, motivation and self-efficacy.

4.1.1 Correlation between the Micro Impact Factors and the Status of College English Teachers' Information-Based Teaching Ability

The results of correlation analysis are shown in Table 1. Among them, attitude and consciousness, motivation and self-efficacy are significant positive correlation with the status of college English teachers' information-based competence [13-14].

Table 1. The correlation coefficient of micro impact factors and the status of college English teachers' information-based teaching ability

	Attitude and awareness	motivation	self-efficacy
the status of college English teachers' information-based ability	.683**	.854**	.783**

As shown in Table 1, the correlation coefficient of attitude and consciousness, motivation and self-efficacy and the status of teaching competence are high. The correlation coefficient is used to calculate the strength of the relationship between the relative motion of two variables. Value of 0.683, 0.854 and 0.783 show there are positive correlations between every two variables, and it is likely significant.

Motivation and self-efficiacy play an important role, which is testified by the interviewees. "At the beginning of the class, students could not immediately transfer from the excitement of the class to the investment in the class. At this time, I will guide the students to gradually increase their interest in the class. I will use some new technologies and combine some imaginations to enable students to be able to Gradually focus on learning in a relaxed and happy atmosphere. Information technology provides a new way to increase students' interest in learning. "(BT5)

Computer self-efficacy is defined as "a judgment of one's capability to use a computer" (Compeau & Higgins, 1995). Namely, it is the individual's self-confidence level in using the computer and a concrete manifestation of self-efficacy' applications in the field of computer. College English teachers' computer self-efficacy is a dynamic concept and it refers to the teachers' subjective judgment, perception, confidence and belief of their capacity to use information technology to effectively complete the English teaching tasks and achieve teaching objectives under the circumstances of integration between information technology and college English curriculum.

4.1.2 Correlation between the Medium Impact Factors and the Status of College English Teachers' Information-Based Teaching Ability

As the place reflecting the attributes of teacher optimally, the school is the main work place of teachers and the basis of teachers' whole teaching activities. Meanwhile, as an external factor, it is also the most direct condition affecting teachers' information-based teaching competence.

Table 2. The correlation coefficient of medium impact factors and the status of college English teachers' information-based teaching ability

	Career development	Times and space	School environment	Leaders and colleagues
The relevancy influencing college English teachers' information-based teaching ability	.792**	.655**	.887**	.858**

** When the confidence coefficient (double test) is 0.01, the correlation coefficient is significant.

As shown in Table 2, the correlation coefficient of career development, times and space, school environment and leaders and colleagues and the status of teaching competence are high.

The hardware includes basic settings such as multimedia classrooms, high-speed campus networks, scanners, and printers; and software include learning resources, courseware software, office software, and school regulation. The integration of information technology and college English curriculum is often regarded as an "eco-evolutionary" process in which technology is seen as "alien species". Technology breaks into the ecological system, which will change and influence the system evolution.

4.1.3 The Correlation of the Macro Impact Factors and the Status of College English Teachers' Information-Based Teaching Ability

Marxism believes that the world is a universally connected whole. This also applies to the cultivation of teachers' informatization teaching competence. Similar to the policy guarantees provided by the state and the external conditions of training, the requirements of the times are macro factors that affect their informatization teaching competence.

Table 3. The correlation coefficient of macro impact factors and the status of college English teachers' information-based teaching ability

	system	Times' request	training
The status of college English teachers' information-based teaching ability	.569**	.412**	.347**

**When the confidence coefficient (double test) is 0.01, the correlation coefficient is significant.

As shown in Table 3, the correlation coefficient of system, Times' request and training and the status of teaching ability is not high. The integration of information technology and curriculum marks a new stage in the application of IT in education, a profound revolution in the field of education and teaching and the fundamental way to deepen the subject teaching reform.

4.2 Regression Analysis of the Status of College English Teachers' Information-Based Teaching Ability and Its Ecological Impact Factors

Taking the ten ecological environment factors with correlation in the above micro, medium and macro point of view as independent variables, and college English teachers' existence state as dependent variable, the independent variables are used to predict the change of the dependent variable, and the dependent variable is explained. And then, the multivariate regression method is used for data regression analysis to reveal their predictive effect on the existence state of college English teachers. The predicted results are shown in Table 4. There are nine variables in the ten enters the regression equation, including three micro variables (attitude and awareness, self-efficacy and motivation), three medium variables (school "hardware", school "human" and career development) and three macro variables (times' request, system and training).

Table 4. The multiple regression results of ecological factors and the development situation of teachers' information-based teaching ability

model	The unstandardized coefficients		The standard coefficient	t	Sig.
	B	standard error	trial version		
(constant)	-5.052	2.586		-1.953	.053
1.attitude and consciousness	.827	.171	.109	4.833	.000
2. self-efficacy	1.164	.170	.172	6.845	.000
3. motivation	.934	.253	.107	3.695	.000
4. school "hardware"	1.458	.240	.229	6.063	.000
5. school "human"	.685	.275	.083	2.487	.014
6. career development	1.593	.164	.244	9.686	.000
7. times and space	.276	.155	.037	1.775	.078
8. system	1.543	.208	.143	7.406	.000
9. times' request	1.248	.198	.128	6.318	.000
10. training	.657	.194	.066	3.379	.001

a. The dependent variable: the status of college English teachers' information-based teaching ability

4.2.1 The Ability of Using Information Tools

The dependent variable: The ability of using information tools

Table 5. The multiple regression results of ecological factors and the development situation of teachers' ability of using information tools

model	The unstandardized coefficients		The standard coefficient	t	Sig.
	B	standard error	trial version		
(constant)	1.186	.682		1.739	.084
1. attitude and consciousness	.588	.045	.738	13.016	.000
2. self-efficacy	.029	.045	.042	.657	.512
3. motivation	.066	.067	.073	.992	.323
4. school "hardware"	.042	.063	.064	.668	.505
5. school "human"	-.047	.073	-.054	-.643	.521
6. career development	.113	.043	.165	2.599	.010
7. system	-.046	.055	-.041	-.840	.402
8. times' request	.048	.052	.048	.926	.356
9. training	-.068	.051	-.066	-1.326	.187

For the ability of using information tolls shown in Table 5, the predictable ecological factor variables are attitude and consciousness and career development respectively, and the regression analyses and the ability to use information tools are consistent for these two ecological impact factors. From the psychology point of view, consciousness decides attitude, attitude determines detail and detail decides action. To make college English teachers really learn and use information-based teaching tools, we have to let them realize that modern IT has become an indispensable means of teaching in college English teaching and it creates a broader platform for college English teaching; Information technology promotes lifelong learning and personal professional development. Except the right attitude, they also should have the consciousness of action implementation. College English teachers should keep concern on the development of new idea and technology, using new technology to promote teaching.

Table 6. The multiple regression results of ecological factors and the development situation of teachers' information-based subject knowledge ability

model	The unstandardized coefficients		The standard coefficient	t	Sig.
	B	standard error	trial version		
(constant)	-1.130	.820		-1.378	.170
1. attitude and consciousness	.189	.054	.161	3.477	.001
2. self-efficacy	.673	.054	.643	12.469	.000
3. motivation	.158	.080	.117	1.968	.051
4. school "hardware"	.008	.076	.009	.111	.912
5. school "human"	.019	.087	.015	.217	.828
6. career development	.146	.052	.145	2.801	.006
7. system	.094	.066	.057	1.425	.156
8. times' request	.080	.063	.053	1.273	.205
9. training	-.145	.062	-.095	-2.352	.020

a. The dependent variable: information-based subject knowledge ability

In terms of the information-based subject knowledge ability as shown in Table 6, the predictable ecological factor variables are attitude and consciousness and self-efficacy. The regression analysis of these two ecological impact factors and the information-based subject knowledge ability is consistent.

Information-based attitude and consciousness refers to the consciousness that teachers' attitude to IT, knowledge and the use for teaching design. Teachers with positive attitude and right consciousness would energetically use IT for data conversion to the learning content of college English, and record, processing, storage, management and evaluation for the data resources.

4.2.3 Information-Based Teaching Design Ability

Table 7. The multiple regression results of ecological factors and the development situation of teachers' information-based teaching design ability

model	The unstandardized coefficients		The standard coefficient	t	Sig.
	B	standard error	Trial version		
(constant)	-2.568	1.092		-2.352	.020
1. attitude and consciousness	.072	.072	.026	.991	.324
2. self-efficacy	.247	.072	.101	3.438	.001
3. motivation	.708	.107	.225	6.635	.000
4. school "hardware"	1.399	.101	.609	13.779	.000
5. school "human"	.137	.116	.046	1.179	.241
6. career development	.214	.069	.091	3.088	.002
7. system	.076	.088	.019	.860	.391
8. times' request	.105	.083	.030	1.261	.209
9. training	-.067	.082	-.019	-.817	.415

a. The dependent variable: information-based teaching design ability

Table 7 shows that in terms of information-based teaching design, the regression analysis of self-efficacy, motivation, school "hardware", career development and information-based teaching design ability is consistent. Jianlin Chen thought that so as to smoothly carry out the reform of English teaching in universities and optimal integration of computer network and foreign language courses, truly implement a computer-based and classroom based English teaching model, the progress of teachers' inner quality (including faith, consciousness, cognition and concept) is more important, that because a high level of college English teachers is a key factor ensuring the success. (Jianlin Chen 2010)

In the early stages, in view of the integration of IT and curriculums, it also needs to popularize in teachers, provide the models that can be learned and followed to let most of teachers know the feasibility. During this period, it needs the support of leaders and society, such as to provide experts support and create good integration scope in teachers.

4.2.4 The Ability of Using Information Tools to Implement Teaching

Table 8. The multiple regression results of ecological factors and the development situation of the ability using information tools to implement teaching

model	The unstandardized Coefficients		The standardized Coefficients	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. school "hardware"	.113	.092	.062	1.226	.222
5. school "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. times' request	.058	.076	.021	.771	.442
9. training	-.128	.074	-.045	-1.723	.087

a. The dependent variable: the ability of using information tools to implement teaching

Table 8 shows that self-efficacy, school "human" and professional development are predictor variables for the development of competence in the use of information tools to implement teaching. Among them, the "people" and career development of the school have a significant impact; For example, are students often learning English through the use of information technology, and are teachers encouraged to use information technology in daily teaching. From the reflection of the

questionnaire items. It reflects whether teachers can effectively use the following tools: reading email, power point software and QQ, and the teacher managerial system for the autonomous learning platform of college English.

4.2.5 Information-based Teaching and Reflective Ability

Table 9. The multiple regression results of ecological factors and the development situation of information-based teaching and reflective ability

model	The nonstandardized Coefficients		The standardized Coefficients	t	Sig.
	B	standard error	trial version		
(constant)	-3.451	.915		-3.774	.000
1. attitude and consciousness	.038	.061	.032	.622	.535
2. self-efficacy	-.013	.060	-.013	-.218	.828
3. motivation	.007	.089	.006	.084	.933
4. school "hardware"	-.197	.085	-.201	-2.315	.022
5 school "human"	.113	.097	.089	1.159	.249
6. career development	.026	.058	.026	.445	.657
7. system	.851	.074	.513	11.552	.000
8. times' request	-.033	.070	-.022	-.475	.635
9. training	-.093	.069	-.061	-1.351	.179

a. The dependent variable: information-based teaching and reflective ability

Table 9 shows that in terms of the development of informatization education and reflective competence, the predictable ecological factor variable is the system. The influence of the policy dimensions of national language education on teachers' teaching is macro. For the requirement of teachers in *National Education Plan* and *Requirements for College English Teaching*, the improvement of teachers is an emphasized item. Aiming at the requirements to teachers that they need "teaching and research innovation", let "teaching and research accelerate teaching and research", and then let "teaching drives teaching and research", the emphasis of the nation on teachers' teaching and research level is evident. The national language education policy promotes teachers' teaching and research forward in a large degree.

4.2.6 The Ability Accelerating Students' Information-Based Learning

Table 10. The multiple regression results of ecological factors and the development situation of accelerating students' information-based learning ability

model	The Unstandardized Coefficients		The standardized Coefficients	t	Sig.
	B	Standard error	Trial version		
(constant)	1.285	1.156		1.112	.268
1. attitude and consciousness	-.056	.076	-.032	-.730	.467
2. self-efficacy	.019	.076	.012	.246	.806
3. motivation	-.081	.113	-.041	-.713	.477
4. school "hardware"	.093	.107	.064	.861	.391
5. school "human"	-.066	.123	-.035	-.540	.590
6. career development	.052	.073	.035	.702	.484
7. system	.461	.093	.188	4.956	.000
8. times'request	.990	.088	.448	11.213	.000
9. training	1.158	.087	.515	13.332	.000

a. The dependent variable: the ability accelerating students' information-based learning

Table 10 shows that for the information-based teaching, research and reflective competence, the predictable ecological factor variable is system, times' request and training. At present, people's researches pay more attention to students' competence. That is, teachers' teaching competence is to

promote students' learning competence, whose tendency can be seen from the requirements of ability standard to teachers' educational technology all over the world. Teachers and students are as the groups learning from each other, the development of one is bound to affect the other; and the strengthening of teachers' information-based teaching ability can directly drive the enthusiasm of students' information-based learning to achieve the goal of teachers driving students.

5. Discussion

The results show that the 11 factors are related to the status quo of College English teachers' teaching ability with IT. The correlation degree is listed as follows: information facility (.887**), personal factor (.858**), motivation (.854**), computer self- efficacy (.783**), attitude and awareness (.683**), career development (569**), time and space (.655**), policy and regulation (.569**), times requirements (.412**), training (.347**).

The results of multiple regression analysis show that the most predictive factors for College English teachers' information teaching ability are 3 variables (attitude and awareness, computer self- efficacy, motivation), 3 medium variables (information facility, personal factor, career development) and 3 macro variables (policy and regulation, times requirements, training). Different ecological factors have different impact on the six kinds of College English teachers' information teaching ability.

"It proves that there are medium and statistically-related relations between college English teachers' computer self-efficacy and actual integration of IT into college English curriculum." (Sun, 105) The use of IT in teaching practice can improve the information self-efficacy. Only when teachers and students feel the convenience and effectiveness of information technology, teachers and students will develop a higher sense of information. With the enhancement of IT and information self-efficacy, the effectiveness of informatization teaching will be significantly improved.

The informatization teaching ability of teachers is developed through macro, meso, and micro strategies. Macro strategy is an external condition composed of social development needs, policies, educational revolution, school support, and growth motivation. Meso-strategy is a way to promote development. It can be noted in the combination of pre service and in-service training, traditional and online learning, technology and application, autonomous and collaborative learning. Micro strategy is the internal system and direct term that brings about development. (Wang. 188)

The cultivation of teachers' informatization teaching competence needs to be supported by the school. The positive and positive evaluation from school leaders, colleagues and students will also have an impact on the quality of teacher education. It also depends on the cooperation and communication carried out in the teacher group and experiences of the teachers themselves.

Table 11. Status Quo of College English Teachers' Informatization Teaching Ability and Ecological Impact Factors

The dependent variable	variables
the ability of using information tools	*attitude and consciousness*, career development
information-based subject knowledge ability	attitude and consciousness, school hardware", *self-efficacy*, motivation
information-based teaching design ability	*self-efficacy*, school "human", career development
the ability of using information tools to implement teaching	*attitude and consciousness, self-efficacy*
information-based teaching and reflective ability	*system*
the ability accelerating students' information-based learning	s*ystem*, times' request, training

On the one hand, the state should dynamically adjust the examine and supervision system of teachers' informatization teaching competence in accordance with the times, and attach importance to it; on the other hand, the state's investment in education and teaching should also be consistent with the times, and gradually improve policy.

In conclusion, the results of multiple regression data show that the present situation of informatization teaching competence of college English teachers, the most predictive ecological factor variables are nine including micro variables (attitude and consciousness, self-efficacy and motivation), three medium variable factors (school "hardware", school "human" and career development) and three

macro variables (times' request, system and training).

Table 11 shows different ecological factors have different impact on the six kinds of College English teachers' information teaching ability.

6. Suggestions

As members of an entire social-ecological system, university English teachers are also surrounded by various external environments. Policymakers and managers should fully recognize the significance of teachers' living conditions, allocate resources reasonably, stimulate teachers' enthusiasm, and innovate the most applicable exterial development environment.

6.1 Improve Teachers' Self-Efficacy of Information Technology

Teachers' self-efficacy refers to the individual's speculation about their ability to complete a certain behavior. It is a subjective judgment, which relates to teachers' teaching attitude, image, behavior and choice. In teaching activities, teachers who have a sense of high effectiveness are confident in their work, have higher levels of mental health, are more determined and very enthusiastic about their work, which facilitates better results. They are able to correctly identify the causes of the difficulties and frustrations they encounter in the integration of IT and the curriculum, and work to enhance their information literacy.

6.2 Formulate Policies and Stimulate to Use Information Tools

Leaders should place a high premium on information technology work, increase publicity efforts for information technology development, create a suitable development atmosphere, and deeply understand the significance of information technology teaching in the hearts of teachers; 2) Formulate reasonable development plans, improve rules and regulations related to information technology development, and make relevant technical training more standardized, institutionalized, and systematic; 3) Increase funding to accelerate the development of web development platforms [15]; 4) Perfect teacher training mechanisms, ensure time security for teacher, and support teacher to pursue degrees at home and abroad; 5) Reform the teacher evaluation system to establish a mechanism to motivate teachers' professional qualities, thereby stimulating their enthusiasm and initiative; 6) Provide more professional and independent space for teacher to progress, such as attempting to establish a learning organization [16].

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