Establishing a Pattern of Mobile Assisted Language Learning Under the Big Data Age: To Exemplify by the University English Practical Teaching Beneath the Frame of MALL

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Abstract. With the continuous deepening of college English teaching reform and the rapid popularization of wireless communication technology, the new English teaching model based on big data technology and Internet technology provides unlimited development space for the cultivation of college students' English level. This paper analyzes the construction ideas and architecture design of college English education platform based on big data and "Internet +", and carries out learning behavior analysis and research combined with the platform. As can be seen from the effect analysis chart, the system designed in this paper can meet the needs of users. Meanwhile, the author will continue to transform and optimize the platform system, focusing on the improvement of platform functions and performance. The big data age definitely provides the reformation and renovation for teaching and learning methods. Establishing a Pattern of Mobile Assisted Language Learning is expected to be adopted as a major aided way of teaching and learning and a valid approach of self-learning as well. Generally, in the process of English teaching and learning in college, a frame of MALL is built reasonably under the theory of mobile assisted learning, by which the students' enthusiasm, enlistment, ability of self-learning and teamwork learning can be enhanced from all aspects.

Keywords: The Big data age · Mobile Assisted Language Learning · Frame of MALL

1 Introduction

With the progress of the times, smart phones, tablet computers and other mobile platforms have been widely used. As portable and personalized communication tools, these mobile communication devices have brought changes to language learning Mobile learning has many characteristics suitable for language teaching and learning, so mobile Assisted Language Learning (MALL) has become a hot research field today.
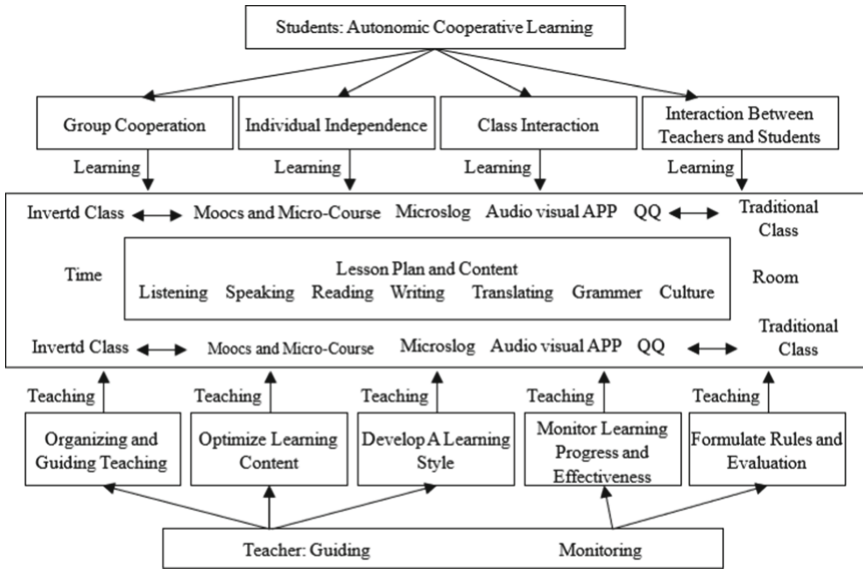
Fig. 1. College English teaching mode integrating mobile learning

2 A Review of Mobile Learning Research

MALL can be defined as mobile-assisted language learning that can be conducted anytime and anywhere.

In foreign countries, it found that the current MALL was still in the early stage of development, and most of MALL's activities were copies of the early CALL mainly based on electronic test grammar exercises and vocabulary lists.

In China, some scholars have carried out relevant research on mobile learning, and there are some valuable experience in the practical application of Mobile learning teaching. After the transition from CALL to MALL, there are few researches on the role and mechanism of MALL in college English teaching in China. Songbin Bao [3] has carried a mode which is more like a CALL mode and mainly reflects the push function of various resources of the network and the process of learning to use resources for independent learning. As is shown in Fig. 1.

3 The Construction of Mall Framework in College English in the Age of Big Data.

The advent of the age of big data and micro-media has brought about a change in people's learning concept. Mobile phones and Wechat have brought challenges to classroom teaching methods.

How to construct the MALL framework of college English? What is the MALL framework of College English? The basic framework of Moore's [5] Theory of Transaction Distance proposes three factors affecting each other: (1) Course plan structure; (2)
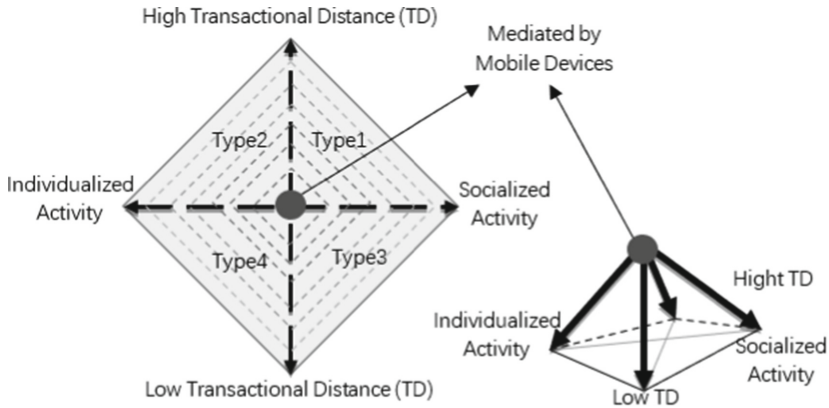
Fig. 2. Park's four mobile learning categories (the teaching framework)

Teacher-student interaction; (3) Learner autonomy. Moore divides interaction in distance learning into three modes: (1) the interaction between learners and learning materials; (2) the interaction between learners and teachers; (3) Learner to learner interaction.

Moore [4] establishes a mobile learning framework which divides mobile learning activities into four categories. As is shown in Fig. 2.

Park's [6] four types of learning activities are: the first type is High Transnational Distance and Socialized Mobile Learning Activity. The second type is High Transactional Distance and Individualized Mobile Learning Activity. The third type is Low Transactional Distance and Socialized Mo-bile Learning Activity. The fourth type is Low Transactional Distance and Individualized Mobile Learning Activity.

Although it has its advantages, it also has disadvantages. Combined with Songbin Bao's [3] college English teaching model and Park's four types of mobile learning teaching framework, the project team preliminary constructed MALL teaching framework in line with the current situation of college English teaching from both theoretical and practical levels, as shown in Fig. 3.
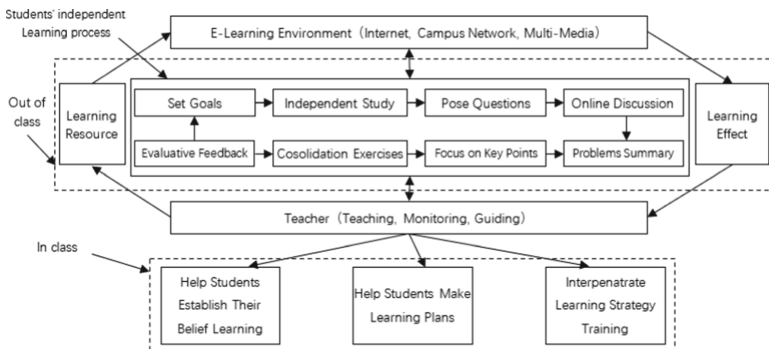

Fig. 3. College mall frame

This framework is based on the interactive distance theory, Jianqiu Tian [2] college English teaching model and Park's four mobile learning teaching frameworks, combined with college English teaching practice and current survey results. The framework focuses on learning. The features of this framework mainly include: mobility (through mobile platforms such as mobile phones and pads); sociability (through Apps such as Wechat and QQ); Learning-centered (achieved by teachers making teaching plans): the combination of traditional classroom and flipped classroom (achieved by combining mobile technology and micro-lessons).

Wertsch [1] studies the characteristics of college students, the study explores five factors: performance expectation, social influence, achievement value, perceived entertainment and use experience. These five factors have significant positive impact on students' acceptance of the micro-learning. In order to better fit the purpose of this study, that is, to test the acceptance of the framework, the fifth point of using experience is changed to using experience, and the setting of the questionnaire test content is shown in Table 1.

Forty-five students from a sophomore natural science class who have experienced a one-year college English mobile assistive language learning practice were selected as the subjects for a questionnaire survey on acceptance. Likert five-point scale was adopted

Table 1. Questionnaire

Variate	Desciption	Number of designing problem	Source basis (adapted from)
Performance expectation	The framework can improve the effectiveness of college English learning	3	Venkatesh et al. (2003)
Social influence	The degree to which their important or influential people think that they should use the mobile framework for college English learning	3	Venkatesh et al. (2003)
Achievement value	The value of mobile learning to their learning and growth	2	Chiu et al.(2008)
Perceived entertainment	The degree of pleasure brought by mobile learning of college English in this framework	4	Wang et al.(2009)
Usage experience	The convenience of college English mobile learning brought by this framework	2	Pachler(2007)

Table 2. Questionnaire mean

Variate	Mean value
Performance expectation	4.4
Social influence	3.7
Achievement value	4.1
Perceived entertainment	3.9
Use experience	4.0

in the questionnaire, with 1 ~ 5 representing five attitudes from "completely disagree" to "completely agree". The mean results of questionnaire survey are shown in Table 2.

Mobile learning entertainment can stimulate learners' interest in learning by increasing sensory stimulation, situation creation and interaction design. Therefore, although the mobile assisted learning framework of college English needs to be further improved, it is generally well accepted.

4   College English Network Based on Big Data and "Internet Plus"----The Construction of Collateral Education Platform

Based on the characteristics and teaching mode of the school where the author works, this paper divides the college English online education platform into four modules: course resource learning platform, learning community, background management system and expansion platform. The platform provides access to resources and hot articles: provides students with navigation to other websites that are helpful for the course. The platform has a large number of data tables, the main data table design structure is shown in Table 3.

Table 3. Users' information table

Field name	description	Data type
id	ID	int
yhm	Users' name	varchar
mm	password	varchar
zesj	Registration time	datetime
yx	mailbox	varchar
dhhm	Telephon number	varchar
sedlsj	Last login time	varchar
sfzx	Online or not	varchar

Table 4. The two classes compared after the experiment

	Quantity	Average grade	Standard deviation	Mean standard error
Results of the experimental class after the experiment	53	97.15	17.294	1.364
Results of the class controled after the experiment	51	94.72	18.264	1.428

Table 5. The two classes' independent sample t test after the experiment

	Levene Variance number of Equality test		"t" test for the mean value equation							
	F	Sig	t	df	Sig (bilateral)	Mean difference	Mean scale Quasi error	95% confidence in the difference interval		
								Lower limit	Upper limit
Assume equal variance Assume variances are not equal	0.028	0.817	-0.428	101	0.013	1.7352	4.1739	-7.2753	7.1335
			-0.428	100.715	0.013	1.7352	4.2847	-7.2547	7.1638

High performance expectation can enhance learning motivation and produce positive learning intention. From the mean results, the achievement value and performance expectation are acceptable.

The user experience is good, but also needs to make progress to improve the human aspect. Mobile learning entertainment can stimulate learners' interest in learning by increasing sensory stimulation, situation creation and interaction design. Therefore, although the mobile assisted learning framework of college English needs to be further improved, it is generally well accepted.

After the introduction of mobile learning terminal for teaching, in order to explore the effect of mobile learning terminal on English listening and speaking teaching. In this paper, the English test situation of the control class and the experimental class set in advance was tested after. As is shown in Table 4 and Table 5.

As can be seen from Table 4 and Table 5, the average test scores of the two classes after the introduction of mobile learning terminal for teaching are 97.15 and 94.72 respectively, and the experimental class is 2.47 points higher. In the line assuming the variance is equal, the P value is $0.013 < 0.05$, indicating that the test scores of the two classes are significantly different after the introduction of mobile learning terminal for teaching. The experimental class is better than the control class, and the mobile learning terminal has an obvious effect on improving students' English level.

5   Conclusion

The mobile assisted learning framework of college English can stimulate students' enthusiasm for English learning, improve their subjective initiative, and promote students' autonomous learning and cooperative learning by using mobile terminal devices. In the framework of mobile learning, mobile devices and the Internet become the medium of learning, so that students' interest in learning can be improved, and learning can happen anytime and anywhere. On this basis, interest is the best teacher, pay must be rewarded, the improvement of grades is the inevitable result. Therefore, college English mobile - assisted learning framework is feasible.

With the advent of the era of big data, mobile intervention learning is also a popular trend. Advancing with The Times, mobile assisted language teaching can create a language learning environment, stimulate students' interest in learning, and improve the teaching effect. The use of mobile assistive language teaching allows learning to be not limited to time and place, not limited to form and fixed content, so that learning can happen anytime, anywhere. With the development of science and technology, mobile assisted instruction will have a more profound impact on teaching in the future.

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