



Research on the Model of Autonomous English Learning Based on the Digital Learning—Take the Lan'mo Cloud Class as an Example

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Abstract. Based on digital learning, the paper takes the Lan'mo Cloud class as a teaching method, and studies the autonomous learning ability of two groups of students, the advantages of Lan'mo Cloud class in digital learning and its influence on students' autonomous learning ability are analyzed in detail. Finally, based on the holistic paradigm foundation of science and the advantages of the Cloud teaching platform, the model of English autonomous learning is constructed, in order to promote the transformation of the value system of English learning participants and the improvement of autonomous learning ability under the background of digital learning. This model is of great significance to the development of the concept of autonomous English learning [1].

Keywords: Digital learning · Cloud online classroom · mobile teaching platform · autonomous learning

1 Introduction

Mobile learning is a kind of learning method which can be completed in any time and place, by using a variety of learning channels, such as mobile and network communication technology [2]. At present, in the era of information society and emphasis on education, mobile learning has entered a peak period of development.

The use of mobile technology for education and teaching began in 2001 with five organizations in three countries: the United Kingdom, Italy and Sweden, it was originally intended to address the lack of literacy and educational opportunities for some young people in Europe. Subsequently, the concept and model of "Mobile learning" gradually entered the field of vision of pedagogy, some scholars carried out relevant research, and based on the concept of teaching practice, initially formed a new form of teaching. Stanford University, for example, has built several M-learning models on the basis of its leading position in the field of remote research, and has carried out the practice of mobile language education through mobile phones [3].

The Lan'mo class is based on IOS platform, and mainly provide mobile digital learning and the corresponding background management. Individual Cloud classes are constructed through some simple operations in order to achieve a new digital learning

in mobile environment. Teachers push the teaching resources before class, carry out the characteristic teaching activities in class, and give feedback after class by Lan'mo platform, which greatly improves the teaching efficiency.

2 The Concept of Autonomous Learning

The concept of autonomous learning was first introduced into western pedagogy in the 1860s. Since then, many scholars have studied it from different angles, but in a long period of time there is not an authoritative and accurate definition. The concept of autonomous learning was first introduced into language learning in the 1970s. According to the research of Broady in 1990s, teachers' duty is not only the organizer and controller of teaching process, but also should urge students to improve their willingness and ability of self-study and guide students to teach themselves.

So Pang Weiguo, a Chinese scholar, summed up autonomous learning as "Four learning": first is "Want to learn", in which students have an intrinsic, conscious motivation to learn, the second is "Being able to learn", it refers to the learning ability based on the development of the individual consciousness of the learner, the third is "Learning methods", which refers to the learning strategies and skills, and the last one is "Persevering learning", which is the willpower to maintain the long-term effect of the learning activities. The Lan'mo Cloud class fits all the characteristics of building these four dimensions.

3 Constructing the Autonomous Learning Model of College English Curriculum Under the Era of Digital Teaching

Mobile teaching is a kind of new learning and teaching theory which is an interactive teaching activity based on mobile devices and is developing recent years [4]. It is an online, open, digital teaching and learning model. If the software can be reasonably used, it can promote students to want to learn, can learn, will learn and persist in learning. During the process of the students' independent completion of various learning tasks, a self-regulated learning model of college English is constructed, which improves the learning effect.

3.1 The Feasibility of Self-learning Model Construction by Lan'mo Cloud Class

(1) Students want to learn. "Want to learn" refers to the learning object has the intrinsic spontaneous learning motivation. Compared with the traditional college English classroom teaching, Lan'mo Cloud class is a new teaching and learning model, the platform can offer videos, discussions, questionnaires, resources, related links and other rich and diverse learning resources, which are useful for cultivating interests, aiming to change the teacher's request under the passive learning into the interest of self-consciousness active learning. Students no longer feel that English learning boring, realize "Do not want to learn" to "Want to learn".

(2) Students being able to learn. "Being able to learn" refers to the learning ability based on the development of learners' individual consciousness. With the arriving of

internet technology and information age, a large amount of information occupies people's limited attention. In addition to the study time in classroom, most students work and study life are fragmented, the time occupied. While Lan'mo Cloud platform has a more flexible way like learning time, place and content. As long as they carry a mobile phone, students can effectively use the usual queuing, waiting for the bus and other debris time to study, so that students pay more attention to the accumulation of knowledge. In addition, the platform provides a timely function for exchange and interaction, helping to augment the confidence of students, remove obstacles in the learning process, and make up for the insufficiency of traditional classroom, convert the state of "Difficult to learn", "Cannot learn" to "Can learn" [5].

(3) Students can learn. "Students can learn" refers to learning strategies and techniques. Teachers can design different levels of task activities according to students' different personality, language level, learning ability and characteristics by using of Lan'mo Cloud class. During the learning process by Lan'mo, students can choose the proper strategies and methods to grasp and monitor the individual learning process which itself a process of reconstructing language knowledge. This kind of mobile teaching is a dynamic learning process aiming at completing tasks and solving problems, and it is also a practical application of cognitive strategies in practical teaching [6]. The students have realized the transition from "Cannot learn" to "Can learn".

(4) Students persist in learning. "Persist in learning" is the willpower to maintain the long-term effect of learning activities. Lan'mo Cloud class has a set of monitoring system. For example, teachers can query through the backstage which students has been checked the pre-class assignments and completed them in time and which students have not completed them yet, and they can set the reward experience points, to quantify the process of students' learning through the platform; to motivate students to maintain continuity and consistency of learning by punching every day to get experience points and setting up teaching assistants, etc., change "Discontinuous study" to "Persevere study".

3.2 The Strategy of Self-learning Model Construction by Lan'mo Cloud Class

(1) The preparation stage. According to the different learning objects, the teacher refines the setting of teaching objectives before class, divides the teaching content into several sub-items which cover new knowledge points, and adds the short and prominent micro-lesson design, making use of the Cloud class platform, push the pre-class resources. Design class thinking questions, reserve relevant auxiliary exercises to help students understand the key points and difficult points of learning, test students online learning knowledge mastery. In addition, students are encouraged to publish the problems and suggestions they encounter in the preparation stage to the online class platform for timely interaction and exchange.

(2) The implementation stage. With the help of Lan'mo Cloud course, students can control the time, place, content and amount of study at any time and place according to their English language level. The specific steps are as follows: students acquire explicit knowledge on the platform; teachers guide students to explore and think about certain knowledge and language points by setting backstage tasks; Arrange online exercises, specify the completion time; in addition to major problems, The platform mark assignments automatically; online groups, debate performance, etc., carry out exchanges and

cooperation in order to realize knowledge development; teachers and individuals and groups online exchange, face-to-face tutorship, teachers collate feedback, refine teaching key and difficult points, optimize design.

(3) The evaluation stage. The Lan'mo Cloud platform combines online evaluation with offline evaluation, and pays more attention to the formative characteristics. The evaluation is characterized by three-dimensional diversification and the evaluation subjects include teachers, peers, groups and learners themselves. In addition, the Cloud class has developed its own system evaluation function, which can record the learning situation of each learning object during a period of time, including resources viewing, questions discussing and answering and other aspects of the overall learning ranking. It is not only very convenient for students to self-reflection and supervision according to the synchrony evaluation, but also to find out the differences in learning level and state of their peers and learn from each other. On the other hand, it also provides a reliable basis for teachers to fully understand students' attitudes, abilities, styles and habits.

3.3 Construction of Autonomous Learning Model Based on the Digital Platform of Lan'mo Cloud Class

According to the above analysis, Lan'mo Cloud class constructs the self-learning model under digital platform. As shown in the Fig. 1. This process is divided into three stages: pre-class preparation, in-class implementation and after-class evaluation.

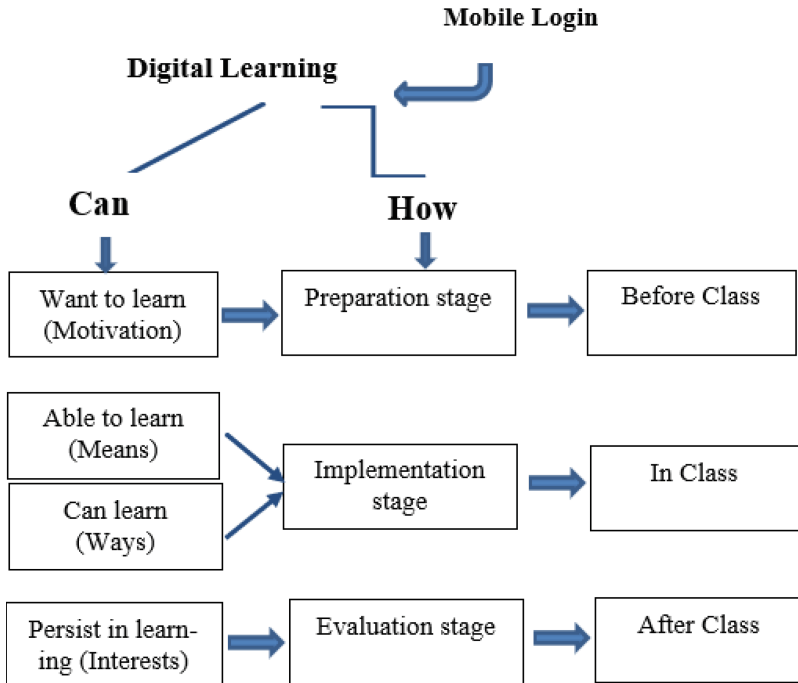


Fig. 1. Construction of autonomous learning model based on the digital platform of Lan'mo Cloud class (Self-drawing)

4 Experimental Study

4.1 Experimental Environment

The school has fully covered the internet, encouraging students to use various resources to learn independently on the Cloud platform, mainly based on anytime, anywhere use of mobile phones, computers and other electronic devices of dynamic learning.

4.2 The Target and Object of Study

Combining modern digital teaching methods with the construction of autonomous learning model of college English, this paper analyzes and compares the two groups of experimental data on autonomous learning ability and the comprehensive English language proficiency test before and after the experiment, the research object is the first-year students of the university major in preschool education. In order to reduce the experimental error as much as possible, according to the students' English scores of college entrance examination, select two groups of similar English level, equal proportions of male and female. Group A ($N = 20$) served as the experimental group, and Group B ($N = 20$) served as the control group. Education background, cognitive ability is basically the same, carrying out group teaching experiments under the same teacher. The two groups were given the same learning goals and requirements, in which the experimental group used the mobile teaching platform as a teaching aid, while the control group used the single traditional teaching method. After one year study, the two groups were assessed for their task completion and English proficiency within the set learning framework, in which we observed whether the mobile teaching platform can improve the ability of self-regulated learning [7].

4.3 The Experimental Process

During the experiment, the two groups of students unified teaching materials, unified weekly learning times and duration. In addition to the traditional teaching mode, the teacher uses the Cloud class to assist teaching in the experimented group, provides the relevant resource package of the course, and arranges the students to carry out the digital learning through the mobile platform, to guide students to actively construct the model of autonomous learning of college English. While for the controlled group of students, the teacher mainly uses the classroom teaching time to carry on the regular college English teaching through the multimedia courseware and the classroom teaching, and does not involve the mobile teaching platform as the assistant means, the experiment lasted one academic year.

4.4 Research Tools and Presentations

Data were collected from questionnaires, tests, interviews and classroom observations. The test time is divided into two stages: pre-experiment and post-experiment. The questionnaire is based on the self-regulated English learning ability of non-english majors designed by Xu Jinfen (2004) after three pilot studies and repeated revisions. The overall intrinsic reliability of the questionnaire is as follows, .8545(40 questions) [8]. The questionnaire is divided into two types, one is based on the college English autonomous learning ability by Cloud platform, and the other is based on the learning effect [9]. The scale was divided into four categories, 10 questions in each category, with a total of 40 questions, and each question was scored from 1 to 5 points in five grades, finally, enter the formula in the target cell: = $TRIMMEAN(C3:L3,2/COUNT(C3:L3))$, calculate the average score for each student in each category and the overall average score. The higher the score, the higher the individual evaluation of autonomous learning ability. To improve the reliability of the questionnaire, students were asked to complete them within 15 min.

The test is presented in the form of a test paper covering all subjects related to English learning, including listening, speaking, reading, writing, translation, etc. The full mark is 100 and the GPA is calculated. In order to ensure the reliability and validity to prevent for the subjective interference factors, the collected data were processed and analyzed with SPSS17.0 software in the form of four teachers' flow evaluation, The standard deviation of the sample equals the arithmetic square root of the variance = $s = \sqrt{((x1-x)^2+(x2-x)^2+\dots+(xn-x)^2)/(n-1)}$, Total Standard Deviation = $\sigma = \sqrt{((x1-x)^2+(x2-x)^2+\dots+(xn-x)^2)/n}$.

The X in the standard deviation formula is the arithmetic mean of an array of numbers (n numbers). X is the mathematical expectation of the set of numbers when all numbers (number n) probability appear (The sum of the corresponding n probability values is 1) [10]. The study used the sub-grade point method. The full GPA is 5 points, with a decrease of 0.5 points per 5 points from 100 to 60 points, and 1 point for <60 points. $GPA = \frac{\sum(\text{course credit} * \text{GPA})}{\sum \text{course credit}}$ [11]. Finally semi-structured interviews and classroom observation. Using SPSS13.0 software to analyze the correlation between the evaluation of autonomous learning ability and the test results by taking GPA as the achievement index, and observe the influence of mobile teaching platform in Cloud class on English autonomous learning ability and comprehensive language use ability.

4.5 Data Analysis

The experiment is divided into two stages: to test and evaluate the self-study ability and English comprehensive level of the two groups of students. The statistics are as follows:

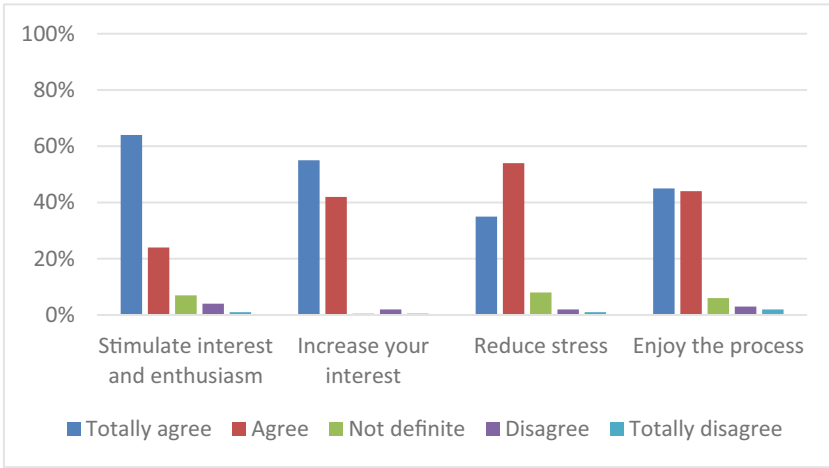


Fig. 2. The feasibility of constructing the autonomous learning model of college English based on the Lan' mo mobile teaching platform (Self-drawing)

Indicators	Pre-experiment		Post-experiment	
	Tested group	Controlled group	Tested group	Controlled group
Number of samples	20	20	20	20
Average Score	1.84	1.90	3.76	2.58
T Value	1.30		-8.42	
P Value	0.18		0.00	

Fig. 3. Self-evaluation statistics of students' autonomous learning ability in experimental and control classes (Self-drawing)

Statistics	Number of cases	Min	Max	Average	S deviation	Variance
Tested-group	20	65	92	74.4	7.25	52.57
Controlled-group	20	62	89	72.9	6.52	42.51

Fig. 4. The test scores of two groups of students' English proficiency before teaching (Self-drawing)

Statistics	Number of cases	Min	Max	Average	S deviation	Variance
Tested-group	20	68	94	79.7	6.13	37.57
Controlled-group	20	64	90	73.5	7.34	53.87

Fig. 5. The test scores of two groups of students' English proficiency after teaching (Self-drawing)

The data in Fig. 2 shows that the Lan'mo mobile platform is feasible and applicable in the construction of college English autonomous learning model. During the use, most students feel relaxed learning, the traditional mode of stress and anxiety reduced. Students enjoy the process of learning English, greatly increase interest and enthusiasm. The Lan'mo Cloud platform realizes the construction of four dimensions of independent learning. They are "want to learn, be able to learn, can learn well and insist on learning".

Figure 3 shows that before the experiment, there was no significant difference in the average scores of self-evaluation between the two groups, they were 1.84 and 1.90 respectively. In other words, most students in both groups had low self-evaluation of self-regulated learning ability and believed that self-regulated learning ability was weak in the process of English learning. After the experiment, the average score of the experimental class was 3.76, while the average score of the control class was 2.58, which increased by 1.92 and 0.68 respectively. It shows that after a period of learning, the teachers have also paid much attention to the cultivation of autonomous learning ability, and the ability of the two groups of students has been improved, but the progress of the experimental class is more obvious, the average score of self-regulated learning ability showed a difference of 1.24 between them.

Figure 4 shows that before the experiment, there is no significant difference in the average score between the experimental group and the control group, which were only 1.5 points. Then after a one-year teaching experimental cycle, the two groups of students were tested again for obtaining a correlation analysis according to the results.

Figure 5 shows that the scores of language ability in the control group did not change significantly after the experiment, and only increased by 0.6 points on average. However, the average score of the experimental group was significantly higher than that of the control group, the average score was increased from 74.4 before the experiment to 79.7. The total score increased by 5.3 points.

The data show that the mobile teaching of Lan'mo Cloud class is helpful to the construction of autonomous learning model of college English, which is feasible and applicable. Through the digital teaching mode and the Internet + self-teach study mode outside the classroom, the students can use the recommended learning resources to choose the more effective self-teach which is suitable for their own condition, it plays a positive role in the improvement of students' performance, and the overall language proficiency of the students in the experimental group was significantly improved.

5 Conclusion

The Lan'mo Cloud class which has a diverse form and an active interaction has changed the traditional single teaching mode, it conforms to the foreign language teaching characteristic and the request. Teachers can achieve a variety of teaching methods by using Cloud classroom, try different interactive activities, which are not only conducive to enhance teachers and students' emotion, enhance students' interest in learning English, and also conducive to the development of students' self-presentation and innovative thinking, teamwork ability [12]. By completing the assigned tasks independently, students can not only improve their ability of self-regulated learning, but also improve their ability of comprehensive use of diverse learning strategies, and gradually construct self-regulated learning model in accordance with their own cognitive habits, the learning effect was significantly enhanced.

Therefore, the mobile teaching model is a useful supplement to the traditional teaching methods and multimedia teaching, which can help students to build an autonomous learning model and improve the teaching and learning effect. But at the same time, the new mobile teaching model urgently needs teachers to change their teaching concept, design English learning system and learning materials carefully, improve students' participation in activities, and change the original grading evaluation mechanism, create a student-centered classroom and dynamic evaluation system. Teachers as classroom organizers and mobile teaching platform builders, they should be more familiar with the operation and application of the mobile platform, The teaching efficiency and learning effect can be improved significantly only when the students are willing to learn on their own.

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