Advances in Social Science, Education and Humanities Research, volume 99
3rd International Conference on Social Science and Higher Education (ICSSHE-17)

Application of Mobile Teaching Assistant in China's Higher Vocational Teaching Organizations

—A case study from Blue Ink Cloud Classes

Lu Huang
Tourism branch and Dean's Office
Chengdu Polytechnic
Chengdu, China
66767369@qq.com

***Abstract*—With the advent of the "Internet +" era, the correlation between educational technology and the Internet is getting increasingly connected. This article is a case study of the Blue Ink Cloud Classes-Mobile Teaching Assistant. By incorporation of its practical application in higher vocational education, this article summarizes the application background, method and effect of the Cloud Class, aiming to transforming mobile terminals such as mobile phones into powerful learning tools and provides reference for the development and reform of China's higher vocational education technologies.**

***Keywords*—Internet+; Blue Ink Cloud Classes; Mobile Teaching Assistant; Application**

I. INTRODUCTION

Over the years, China has gone through a rapid development in economy along with great development in education. Therefore, the transforming society puts forward higher requirements for education. The development of vocational education, especially the development of higher vocational education, has become a hot issue in current Chinese educational circles. Further renewal of educational concept, promotion of advanced teaching techniques and comprehensive improvement of higher vocational education level are in desperate need [1].

II. APPLICATION BACKGROUND OF BLUE INK CLOUD CLASSES

A. Guidance of national policy

In 2015, in his Government Work Report at the 3rd session of the 12th National People's Congress, Premier Li Keqiang put forward that the country needed to develop the "Internet +" (Internet +traditional industries) strategy, with "Internet +education industry" as one of its important part. It is explicitly stipulated in the Article 66 of the Education Law of the People's Republic of China modified and implemented in 2016 that the state needs to promote education informationization, accelerate education information infrastructure construction, use information technology to promote popularization and sharing of quality education resources and raise the education teaching level and education management level. The "13th Five-Year Plan" for education informationization has stipulated that, by 2020, the country shall establish an education informationization system which is adapted to the development goal for national education modernization [2] and can facilitate learning "for anyone, in any place and at any time", Implement 4A (Anytime, Anywhere, Anybody, Anyway) learning. Encouraged by national policies and guidelines, information technology and education & teaching are in further integration and there have emerged numerous informational teaching modes such as Mooc, Micro-Course Online Video and Flipped Classroom.

Information-based teaching is the future direction for education development. It is not an educational subversion, but a practice of education improvement and innovation promotion. Big data services and mobile teaching are the inevitable trend of future development. Higher vocational college teachers should improve their information teaching ability as soon as possible so as to meet the coming era of "Internet +education".

B. Popularity of information technology

In recent years, with the rapid development of information technology and popularity of the "new four great inventions" including mobile payment, bicycle sharing, high-speed railway and on-line shopping, the Internet has fully entered the public life. It is indicated in the 39th Statistical Report on Internet Development in China published in December 2016, that the number of Chinese netizens has reached 731,000,000, equivalent to the total population of Europe and 95.1% of which are mobile phone internet users.

C. Complete coverage of campus mobile terminals

University and college students are the backbone force of netizens. Smart phones are necessary equipment for university and college students. Notices from schools & departments and class activities generally released in class and grade network groups, WeChat, Weibo and QQ widely used for classmates communication, party selfies updated by WeChat Moments, and additional mobile games popular in juveniles such as Glory of the Kings, are all stimulating the students to purchase smartphones. Meanwhile, the well-covered campus Wi-Fi, cheap student phone cards, various cost-effective smartphones are made affordable to students. In higher vocational colleges, almost everyone has at least one smart phone, not to mention that many students also own other mobile terminals such as laptops and tablet computers. Furthermore, construction of

functional integration for classrooms and training rooms ensures that most classrooms are equipped with a certain number of computers for students' usage at class, and the classroom projectors are also equipped with on screen display, all providing sufficient material basis for mobile terminal teaching [3].

D. Improvement measures for classroom discipline

In recent years, there has been a generally recognized bad phenomenon by college teacher [4], which is that the students are addicted to playing their smartphones regardless the class, seriously affecting the teaching activity. However, for college students, countermeasures such as no-phone rules at class for primary and secondary school students, or central placement of phones, or installation of shielding apparatus in teaching buildings are not proper solutions. And there is no fundamental improvement for reducing the students' dependency on the phone. So, it is better to solve the problem of mobile phone dependence by taking good advantage of mobile phones. By adopting mobile APPs such as the Blue Ink Cloud Classes-mobile Teaching Assistant, the students can learn through mobile phone and make it serve for teaching.

III. Application Method of Blue Ink Cloud Classes

From February to June 2017, the Blue Ink Cloud Classes was applied to improve teaching method in Travel Agency Operator's Practice.

Blue Ink Cloud Classes-Mobile Teaching Assistant is an APP teaching assistant based on mobile devices developed by Beijing MosoInk Information Technology Co., Ltd. It is mainly makes the teachers and students of universities and vocational colleges as its targets. The App has both IOS and Android versions, and is also compatible with the Web version of the PC.

A. Function overview

This App is a cloud service platform which carries out real-time feedback interactive type teaching in and out of classroom by utilizing mobile intelligent devices (terminals) under network environment. Based on the class group and class space saved in the Cloud by the teachers, the platform can provide functions such as student mobile device sign-in, notice on course information, information push, homework assignment, voting, questionnaire, answering questions, discussion and test. [5]

B. Operation instruction

1) Preparation before class

a) Downloading and installation

The software can be downloaded and installed by QR code scanning from official website (see fig.1). You can also search for "Moso Tech" in Apple APP store and Android application store for downloading and installation.

Fig. 1. Official website download

b) Create a class

Enter the cloud classes interface, click the "+" in the upper right corner, click "create a class", fill in the college, class and course name and then you create a class (see fig.2).

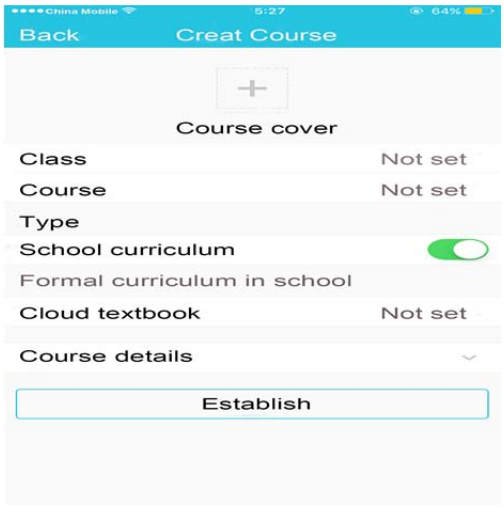

Fig. 2. Create a class (Click"+"to set the cover, fill in the class and course information, you can create a class)

The system shall automatically generate a 6-digit invitation code (see fig.3). After finishing APP registration, the students shall input the invitation code to join the class.

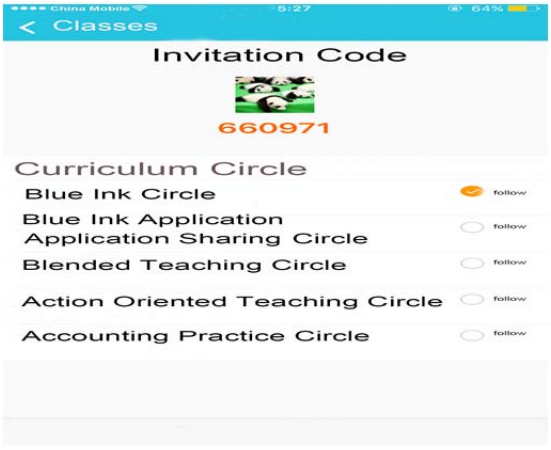

Fig. 3. 6-Digitinvitation code

Then the teacher can conduct real-time management on the whole class through the APP and use it as an auxiliary teaching tool

c) Uploading resources

Before class, the teacher can upload teaching resources required by the course such as pictures, web page links, videos, audios, PPTs, cases to the resources database (see fig.4). Resources can be grouped and edited in category. The teacher may put forward specific knowledge points and learning requirement and inform the students about the preview tasks they need to complete through notifications.

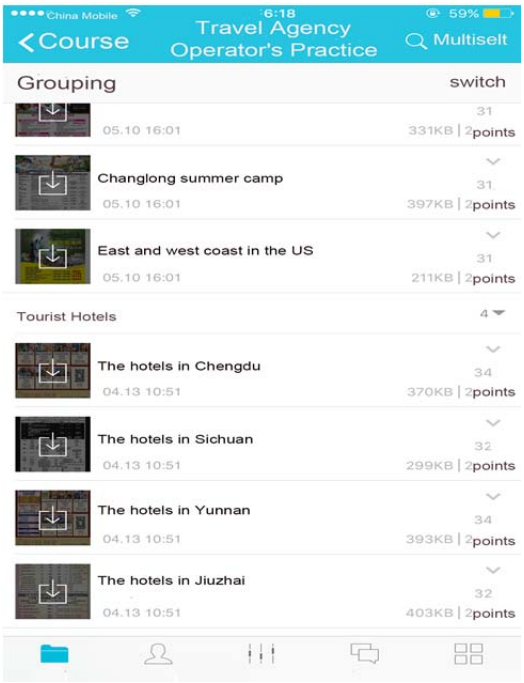

Fig. 4. Resources display (It's from the course of Travel Agency Operator's Practice)

The teacher can choose the releasing time of resources and reserve some resources for in-class and after-class viewing according to the teaching schedule

2) In-class use

a) Classroom roll call

You can choose whether to use this function according to classroom teaching requirements. By replacing the traditional roll book, this function can realize one-click sign-in by mobile phone or sign-in by gesture. As the sign-in time is in provisional arrangement by the teacher, the students in lack of self-discipline dare not to be absent or late for the class.

b) Classroom questioning

It is divided into manual selection and random selection. For manual selection, the teacher chooses a student to answer questions; for random selection, the teacher shakes the phone for random roll call. After the students have finished answering the question, the teacher can carry out on-line evaluation on him and give an experience points. Such questioning formulation is exciting and mysterious, can improve students' attention and enhance interestingness in the classroom.

c) Classroom interaction

5 classroom interactive activities can be added in the teaching process. Including answering questions/discussing, brainstorming, voting/questionnaire (see fig.5), assignment/ group task (see fig.6) and test. A variety of activities are good for improving classroom participation of students and implementing corresponding learning tests on various knowledge points.

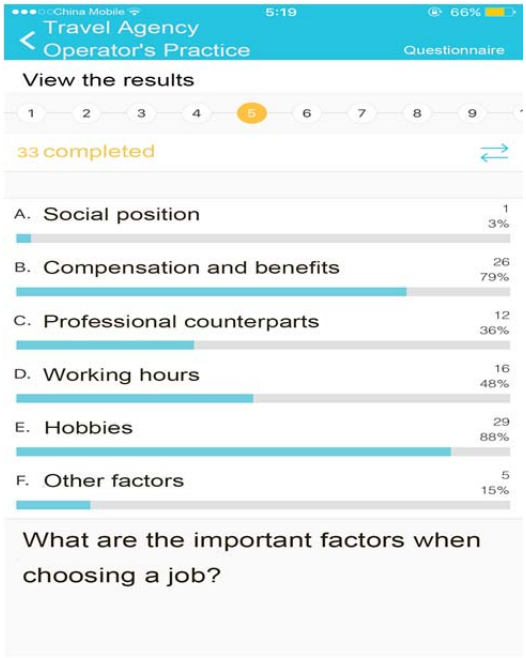

Fig. 5. Questionnaire

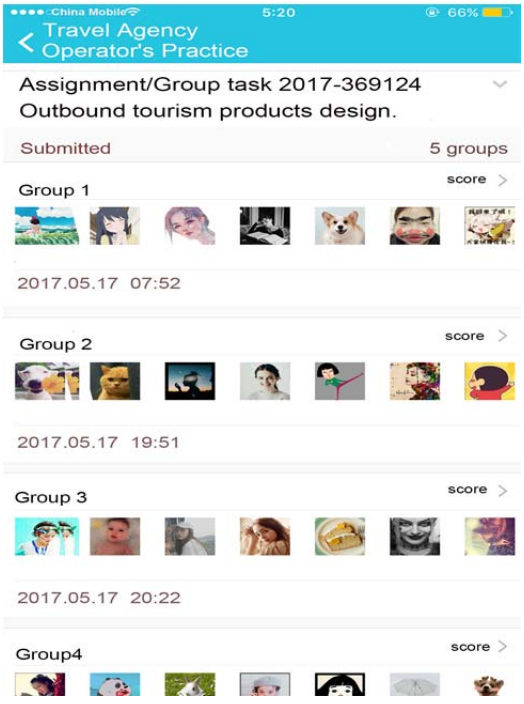

Fig. 6. Group task

3) After-class management

a) Mastering of knowledge points

After class, the teacher can better control the students' situation of knowledge acquiring through opinion analysis in brainstorm, communication between teachers and students in answering questions & discussing and response to voting & questionnaire. In addition, these materials are suitable for long-term retention, which is convenient for inquiry and progress comparing.

b) Evaluation of experience points

By learning different teaching resources, the student can going different experience points. After finishing evaluation on student assignment and answering performance, the teacher will also earn corresponding experience points. Meanwhile, the students can also evaluate each other or evaluate other groups, which is good for mutual communication and learning.

c) Member Management

There are 2 sorting orders for student members of the class: one by student number and one by experience point (see fig.7). The teacher can be absolutely clear about the students' preparations for teaching resources before class, review of teaching resources after class and assignment completion

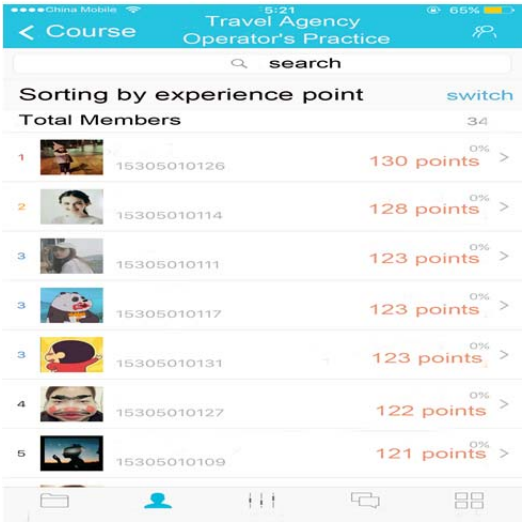

Fig. 7. Experience point ranking

IV. Application Effect of Blue Ink Cloud Classes

A. Teaching effect

After installing the Cloud Classes APP on students' mobile phones, the teacher may instantly transfer learning resources such as course information, study requirement, exam arrangement, courseware and video to students' phones, transforming their mobile phones into powerful learning tools For students, it is of great convenience to get learning resources such as course information, study requirement, exam arrangement, courseware and video from the APP, which has make the electronic devices like phones and Pad to be positive learning tools.

B. Application evaluation

1) High satisfaction degree

The author has applied the Blue Ink Cloud Classes in the specialized aided-teaching for Travel Agency Operator's Practice. After a semester of experimentation, it has received good teaching effect and been greatly praised by the students. At the end of the semester, a questionnaire survey was carried out on students of three majors who used the same APP. Usage satisfaction for Blue Ink Cloud Classes is as follows: 52% were very satisfied, 40% were satisfied and 8% were dissatisfied (mainly because of the classroom roll call function and campus network speed). 100% of the students thought the APP were beneficial for their study. Thus it can be seen, Blue Ink Cloud Classes has good auxiliary function for teaching.

2) Good customer service

The multi-function Customer Service channel was applied to help college faculties managing the App easier. For example, WeChat, Weibo, and QQ (see fig.8).

Fig. 8. Online customer service channel

The company has also established a lot of WeChat groups (see fig.9), for communication, technical advice, and organizational learning activities.

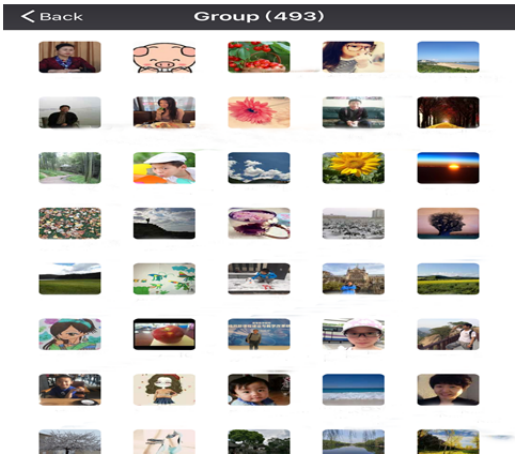

Fig. 9. Members in the WeChat group

C. Follow-up problems

1) The functions of the APP can still be improved

The functions of the APP should be improved in some aspects. For instance, bridges may be built between different

classes for different teachers within the category of the same course, and functions similar to QQ may be adopted to realize resource sharing and membership communication. Also, once the resources are set to public, they can never be set to private. You have to delete it and upload it again, etc. We hope that the development team shall launch more complete versions later.[6]

1) The self-discipline ability of the students' needs to improve

It is still a novelty to use mobile phones in the classroom, but students with insufficient self-discipline may take the opportunity to use mobile phones to do something unrelated to the class. Although this phenomenon is also common in classes without mobile phone assisted teaching, it still brings forward demands for the students' self-discipline, teachers' regulation and supervision ability and charm of teaching.

2) Keep the campus wireless network unobstructed

During the class, simultaneous usage of the campus WiFi by multiple classes can easily cause network congestion. Therefore, many teachers try to avoid long videos and multiple links with large flow consumption while uploading resources. The campus WiFi, especially the wireless network within the teaching area needs more maintenance to keep the network unobstructed

V. CONCLUSION

This paper analyzed the effect of Blue Ink Cloud Classes for the development and reform of higher education on the three aspects, the application background, application method and application effect. Blue Ink Cloud Classes is consistent with the rapid development of technology and is a model for application-assisted mobile teaching. It can build a convenient teaching platform to achieve the interaction between teachers and students. Mobile Teaching Assistant improves the liberty of teaching and the diversity and inclusiveness of teaching methods. Blue Ink Cloud Classes, as a new teaching mode, for its own character, would promote the higher education reform.

REFERENCES

[1] Guglielmo Trentin, Using Network and Mobile Technology to Bridge formal and Informal Learning, 1st ed, vol.2, Oxford: Chandos Publishing, 2013, pp71-75.

[2] Douglas McConatha, Mobile Pedagogy and Perspectives on Teaching and Learning, 1st ed, vol. 3, Pennsylvania: IGI Global, 2013, pp 230-241.

[3] Jude Carroll, Tools for Teaching in an Educationally Mobile World, 1st ed, vol. 2, New York: Routledge Publishing, 2014, pp 98-110.

[4] Susan Brooks-Young, Teaching with the Tools Kids Really Use, 1st ed, vol. 2, California: Corwin Press, 2010, pp 67-80.

[5] Tan Chunlan, Practice of flipped classroom teaching reform based on Blue Ink Cloud Class, Wuhan: Logistics engineering and management, 2016, pp219-220(In Chinese)

[6] Meng Tingting, Reflections on the application of Blue Ink Cloud Class in the teaching process, Chengdu: Asia-Pacific Education, 2016, pp 114-115(In Chinese)