Feasibility Study of Hybrid Learning Strategy in Adult Correspondence Education

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Abstract. Adult correspondence education in mainland China started in the 1950 s and has been developed for over 60 years. The use of Information and Communications Technology (ICT) is one area of the development, but the progress is rather slow. It is undeniable that face to face teaching is the mainstream in adult education today. This paper analyzes the status and the problems of ICT development in adult correspondence education, and to propose a hybrid learning model for adult correspondence education, based on the experience on Network Education (Network education is a special education practice with internet in China. And online education and learning here is broader including Network education.) and the reconstruction of the teaching model.

Keywords: Correspondence education · Hybrid learning · Teaching model

1 Background

1.1 Challenges in Adult Correspondence Education

There are many study modes for adults in mainland China to pursue higher education, including the Correspondence Education, Evening University, Radio and Television University, Network Education and Self-study Examinations. Correspondence education was the oldest and largest one as it began early in the 1950s. Tens of millions students were trained and the teaching models were formed in a relatively stereotyped management approach later. For this management approach, the correspondence teaching stations were treated as a link to connect the host universities and students. These stations gave assistance to the host university in students' recursion, daily management, learning counseling, examination and other works with the authority of host Universities and Colleges. Learning was mainly based on the student's self-study, supplemented with short-term face to face teaching. This was the model for the first

generation of distance education. The management approach and the teaching models ensured a basic quality in correspondence education by adapting the social development contexts.

However, with the development of society, these models do not suit the present needs for the following four reasons:

(1) Low attendance of face to face education for the conflict between working and learning. Most of the students were working adult. Though there were only a few days for face to face learning, it was still hard for them to participate aside from work.

(2) Low quality teachers. The correspondence education stations were usually scattered in different areas. There was always a conflict for teachers to arrange schedule for the host university and the stations. Teachers from the host university were occupied from their works in the university and did not have sufficient time for working in the stations. Therefore, the stations could only employ teachers from local. The face to face teaching's quality was then declined for the lack of good teachers.

(3) Inadequate monitoring and management from the host university. The hosting university could hardly play its role in teaching monitoring and management since the correspondence stations were not located in the same area. This was not the only significant reduction in face to face teaching time, but also the students' self-learning management. The student's learning support and teaching monitoring were also affected. Students had no chance to communicate with the teachers, so their questions and problems in learning could not be fixed on time.

(4) Other problems, such as the outdated learning contents and low quality learning resources which could not meet student's diverse learning needs. Teaching methods and mode of study were going backward and could not mobilize student's enthusiasm.

Above that, the correspondence education in China has reached its development bottlenecks. The "face to face plus self-learning" teaching model does not work well, and should be reformed to eliminate the above drawbacks. Constructing a new information-based distance education teaching mode is a new topic which is widely concerned by the correspondence education researcher and practitioners.

1.2 The Support Environment of Correspondence Education Informatization

With the rapid development of information technology and the improvements in network infrastructure, many different kinds of applications have been penetrated into people's daily lives and broadly used in various industries. This creates good conditions for the informatization development of correspondence education.

The number of Internet usersand mobile phone owners are increasing every year in mainland China. According to the report released by China Internet Network Information Center (CNNIC) in 2015, the number of Internet users has reached 649 million including 557 million mobile phone users. The coverage rate of internet has reached to

47.9 % which has raised 2.1 % compared with the end of 2013 [1]. At the same time, many kinds of new network applications have been developed rapidly. They have been penetrated into our economy, culture and everyday life. This means that the users can master the use of these information technologies easily, which provides a powerful support to the correspondence informatization.

The application of ICT in education also developed quickly these years. The Chinese Education Informatization Development Report (2013) pointed out that "our educational informatization has passed over the initial stage basically, and has been reaching the preliminary integration stage" [2]. Massive Open Online Courses (MOOC) got a lot of attention in educational field in 2013. Many famous universities have joined in MOOC research and development and proposed that MOOCs is a pushing hand (engine) of teaching reform in the future [3, 4]. This is also a powerful reason for expanding the education informatization.

1.3   The Lessons Learned from Network Education Pilot Practice

In fact, we earned experiences in integrating information technology into teaching in the field of adult education. The Ministry of Education launched a modern distance education project in 1999, and 68 colleges and universities were chosen to do a pilot study of network education. Network education is the most extensive, in-depth and successful forms of education that integrated technology into education in mainland China. It made considerable progress in many aspects, such as technology application, digital resource development and information management. This creates a strong impetus towards the information technology development in the pilot universities, and also promotes the reform and the innovative training model for teaching. This paper summarized the main teaching features of network education as follows.

(1) A variety of technical solutions formed with the application of the latest computer technology, network communication technology, multimedia technology and other information technologies. Three-dimensional information technology teaching environment has been built, and latest technologies have also been widely used in education, such as the next generation internet, mobile communications, artificial intelligence and virtual reality technology.

(2) Developed a number of digital education resources. The contents are rich, diversified, and highly interactive, which give students more choices in personalized self-learning. It is common to open and share the resources.

(3) New teaching approaches enhanced the teaching ideas and models. Internet-based teaching model has been formed and completed gradually; teaching content and curriculum system starts to adapt in-service staff's diversity and individual's needs; learning support services get a lot of attention; teaching teams gradually formed to adapt the characteristics of network education; flexible educational and teaching management models with credit system were widely used.

(4) Realized the digital teaching management and educational administration. These systems can support all management processes from registration to educational administration, teaching management, test management, tuition management, and

graduation management. Informatization management has been reached to a deep level of BPR (Business Process Reengineering) and improved the efficiency of management specification level.

Although online teaching has made certain progress, there were some obvious deficiencies of online teaching, as revealed in practices. These included issues on both the management perspective and teaching perspective. From the teaching perspective, the main problems are as follows:

(1) Adult learners cannot adapt online learning. This causes the problem of online learning disabilities.
(2) Some courses, especially the difficult courses such as science and engineering, are hard to be mastered only by online learning.
(3) The effect of practical training is not as good as expected. Although some practical courses can be learnt by simulation, the effect is greatly reduced. Let alone some practical courses which cannot be carried out by simulation.
(4) No interactions between students and teachers for pure online education which most of the teaching and learning process (except exam) are carried out online only. Interpersonal interaction is essential to both learning and personal development. For the lack of face to face interaction, the emotional interaction among students and teachers is hard to occur. It is not easy to eliminate the loneliness feeling of learners, to stimulate learners' motivation, to create excellent teaching context, and to promote the awareness of learners in the learning process.
(5) Web-based learning theory is not yet mature which has influenced the instructional design and the teaching organization. iResearch reported that though great attention had been paid by the government on online learning, admired by internet users, there was no fundamental change in educational model which resulted in blocking the development of online learning [5].

These problems gave a challenge to online education quality improvement and led to an adversely effect on the social reputation of online learning. The university engaged in online education should treat these problems seriously and response to them positively.

1.4 The Questions to Answer

There is no doubt that informatization will be the development direction of distance education. Sloan Consortium has released "Grade level: tracking online education in the united states" which is the twelfth annual report on the state of online learning in U.S. higher education in February 2015 [6]. "Is online learning strategic?" The answer in Sloan report is that the proportion of academic leaders who report that online learning is critical to their institution's long term strategy has grown from 48.8 % in 2002 to 70.8 % in 2014. The proportion of institutions reporting online education is not critical to their long-term strategy has dropped to a new low of 8.6 %, which is the lowest record in history. The question here it is: "are learning outcomes in online offerings comparable to face-to-face teaching?" There are different perspectives on it.

However, it is considered that the CAOs (Chief academic officers) focus more on the hybrid online education model which is to combine face to face education with online learning. They believe that the effect of hybrid learning "is better than" face to face teaching and online teaching. The majority of the academic leaders rated the outcomes of online and blended learning the "Same" as face-to-face learning (57.9 % for online and 56.6 % for hybrid) when the blended learning outcomes were more remarkable when comparing to the online teaching (32.8 % for hybrid versus 16.3 % for online).

Above all, the teaching method of adult correspondence education needs to be reformed. The informal learning environment has provided good conditions for correspondence education informatization development. The former experience of network education practice gave us some lessons to refer for the transformation. The remaining part of his paper is to discuss how to design the path of this kind of reform and is it feasible to adopt the hybrid learning strategy in correspondence education.

2   Adult Correspondence Education Informatization

Given the current situation of adult education, informatization is the fundamental in exploring the right strategy for adult correspondence education in mainland China. A survey was conducted in adult education colleges of higher education. An Adult Education Informatization Survey Questionnaire was sent out to 68 Universities and 65 valid questionnaires were collected. The investigation mainly covered the following perspectives: college basic information, informatization teaching, digital resources construction and sharing, investment in informatization (human, material and financial resources) and so on. Field research was also conducted at some adult education colleges and universities in Jiangsu Province and Shandong Province.

2.1   Current Status of the Adult Correspondence Education

The current status of adult correspondence education informatization could be concluded by the above questionnaires and surveys.

As we can see from the Table 1, although face to face teaching is still the main teaching method in correspondence education, the informatization teaching methods have been introduced and the online teaching has also been adopted.

Table 2 shows the level of acceptance for the necessary degree of correspondence education informatization. Universities participated in the survey agreed that it is substantial to integrate the ICT into correspondence education in order to avoid the elimination.

Table 1. Teaching methods in correspondent education

Without any digital learning resources	Without network, but use digital learning resources	Part online based teaching	Totally online teaching
14.7 %	35.3 %	50 %	0 %

Table 2. The acceptance degree of Correspondence education informatization

Very necessary	Necessary	Indifferent	Unnecessary
89 %	11 %	0	0

Table 3. The Multimedia classroom construction in university

Whether built multimedia classrooms		Whether connected to the Internet		Whether meets the need of daily informatization teaching	
Yes	No	Yes	No	Yes	No
97 %	3 %	92 %	8 %	79 %	21 %

Table 4. Multimedia classroom construction in station out of university

Whether built multimedia classrooms			Whether connected to the Internet		Whether meets the need of daily informatization teaching	
Yes	Partly	No	Yes	No	Yes	No
50 %	45 %	5 %	84 %	16 %	76 %	24 %

As we can see from both Tables 3 and 4, the internal and external networks and other conditions fulfilled the basic requirements to carry out informatization teaching.

Table 5 listed the current and expected way to build digital resources. Parts of the adult education digital resources were developed by themselves, but most of them were still in the learning imitate stages.

From the above several major research data, the importance of correspondence education informatization was recognized when the Informatization methods had been adopted. In order to remedy the drawbacks of "self-learning plus face to face teaching" model, most adult education institutions have tried to adopt digital resources in teaching. Some of them began to teach their courses completely online. Students' learning method has been transformed to "self-learning plus learning online plus face to face teaching". It is the horizon of hybrid learning approach.

2.2   The Bottlenecks of Correspondence Education

We found from the survey that although correspondence education informatization is highly concerned by correspondence education directors, correspondence education still faced its bottleneck.

Table 5. Curriculum resources construction methods

	Self-build	Corporative building	Buy	Sharing undergraduate resources in the university	Sharing undergraduate resources out of university	Sharing international open resources
Curriculum resources building approach	50 %	14 %	14 %	13 %	20 %	14 %
Expected curriculum resources building approach	42 %	50 %	35 %	35 %	22 %	37 %

(1) Lack of startup capital. Funding is indispensable for the infrastructure set up and support for informatization. However, no funding was available from the government on the correspondence education. The costs are unlikely to be absorbed by the tuition fees especially for those small sized universities.

(2) Lack of professionals and technical experts. The correspondence education is a traditional education model. There is a lack of informatization technology professional. Teachers and administrators are not required to possess any information technology skill. Once the informatization teaching starts, it is necessary to have the professionals to monitor the set-up of technical infrastructure as well as the continuous development of digital resources. The informatization literacy needs to be improved among all staff. The low ICT capability and literacy will only restrict informatization development. Teachers should enhance their level of information technology to support the online services and teaching activities.

(3) Lack of suitable digital resources. Integration of digital resources into education can accelerate informatization process, but the resources shared channel is insufficient because of information asymmetry. Teaching requirements of the schools are different. It is difficult to achieve the integration.

In addition, the teaching mode design is essential. Some School directors think that the correspondence education informatization is not complicated. The reality tells us that it is not as simple as a patchwork of several different teaching methods. A reform is required on the overall design for transforming the original structure and sequence to recycling processes. In the new model, the functions and requirements of all entities in the whole teaching and learning process should be imposed on teachers and students. All learning tools and learning resources will be different in the new model. New model design is important as the products mentioned above had a heavy reliance on it, and they should be changed with the design.

3 The Hybrid Model of Adult Correspondence Education

As mentioned earlier, traditional correspondence education was successful in the past, but it needs to be reformed for the change in the ecological environment [7]. There are many advantages of online education for the new context. Yet, online education also has shortcomings. It is not the best solution to replace the correspondence education. Many scholars in mainland China believe that hybrid learning is the best way to transform traditional correspondence education with information technology [8–10]. We also support this idea, based on our practical experience in network education for many years.

3.1 The Definition of Hybrid Learning

The definition of hybrid learning we adopted in this study is the one which focuses on optimizing the achievement of learning objectives by applying the "right" learning technologies to match "right" personal learning style to the "right" person at "right" time [11]. It has the following connotations: (1) focus on learning objectives rather than the technical delivery methods; (2) it should support a variety of different learning styles and to be adopted by more audience; (3) different knowledge backgrounds will get different learning experiences; (4) the most effective learning strategy is give what learners needed in time [12].

3.2 Hybrid Learning Model of Correspondence Education

As we can see from the Fig. 1, the teaching process of the correspondence education has the above features. It is a self-study based learning that teachers and students are isolated in the whole process. Though there is a short-term interaction between teachers and students; students with students, it is hard to interact and give feedback to students timely. There is no collaborative learning but only a single evaluation. Student can complete their experiments in the traditional correspondence mode. Figure 2 is a hybrid model in correspondence teaching.

The hybrid learning model for adult correspondence education has the following features:

(1) The internet support to the whole learning process. It is convenient for the interaction between teacher- student, student-student, and student - learning resource. It also supports different types of face to face teaching, teacher-student and student-student face to face interaction.
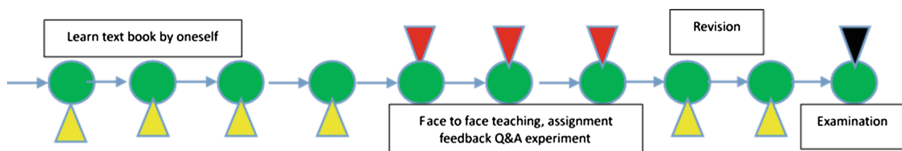

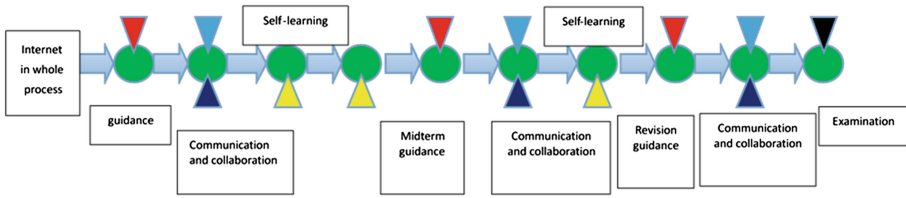**Fig. 1.** Teaching process of correspondence education.

Fig. 2. Teaching model of hybrid learning

(2) Course chosen. In the past, with the restriction of inavailabilities of teachers in face to face teaching stations, all students in one programme had to learn the same courses. After using the Internet supported hybrid learning, learning is more flexible and open. Students can choose what they would like to learn form a certain range of courses based on their individual needs and interests.

(3) Course Learning. Learning guidance is provided. The main contents of the guidance include learning methods, introduction to online learning, and introduction of courses' academic requirements. Then students will complete the courses mainly by self-learning approach from both online and face to face. At the middle of the term, teachers will use the face to face model for guidance and feedback. There is a centralized guidance at the end of the course to help learners to revise and prepare their examination face to face. Compare to the traditional correspondence education model, the face-to-face contact hours can be reduced to one-third or less, and it will help learners to get a balance between working and learning. It is more flexible for learners to choose their learning time and station.

(4) Interaction and learning support. The interaction includes the access to learning resources, assignment, counseling, answering question and so on. The interaction can be made through the internet. High-quality and diverse online course resources are important for the foundation for hybrid learning. The uneven quality of teachers in correspondence station has been a major problem in teaching quality. Digital learning resources are easier to share and give learners a better experience. Teachers can give their feedbacks to students and mark their assignments online. Basically, the online tutoring can be done anytime. Students' questions can be answered more quickly. Face to face interaction and online interaction can be provided alternately to support each other. This can improve the learning effectively. The online learning support services throughout the teaching process can compensate the absence of learning support services in the correspondence education.

(5) Emotional exchange. There are three interaction stages in the learning process including not only teacher-student and learning interaction, but also student-student and emotion interactions. We found from the investigation that main purposes for students going to the correspondence stations were to overcome their loneliness by making friends and learning partners, and to get a sense of belonging, rather than listening to the lecture (this is the main task of teacher today, the class full with chalk and talk). Adults always have a basic learning ability to grasp the main learning contents by reading. If the primary function of

face to face teaching has been changed into Q&A and emotional communication, the number of students participated in face to face learning will be increased greatly. Therefore, the design of activities for students is the main task that we should prepare.

(6) Learning assessment. The final examination is the main evaluation method in traditional correspondence education. This kind of examination is serious, and formal. Testing the students' learning progress is just one of the purposes of examination. The more important thing is to encourage daily learning. It is generally believed that daily formative assessment plays an important role in promoting learning. The conflict of work, study and life for adult learners is critical. Students always put learning at the secondary position when they are busy. It is difficult to have a routine examination in traditional correspondence education. However, for online learning, it is easy to give assignments including daily assignment, quizzes, and online learning activities. Hybrid learning can combine the formative assessment and summative assessment together. It is a better solution for solving the problem of learning assessment.

(7) Practice. Students have chance to attend face to face learning. However, hybrid learning only provides some face-to-face learning experience.

(8) Teaching monitoring. In traditional correspondence education, teachers and students are separated. This adds difficulties in monitoring the teaching process. Teaching quality is hard to assure because the teaching requirements are hard to implement. Hybrid teaching makes the relationship closer as the teachers can track students' learning on time. Since the main process is completed online, teachers and administrators can spend more time in monitoring the teaching process.

4   Discussion and Conclusion

We have adopted the above hybrid learning into practice for several years and made some achievements. Our experience is summarized as follows.

There are two lines of correspondence education. One is the self-learning based on reading materials in paper form. The other one is the content-based course with face to face teaching. These two lines are parallel in a stage. Sometimes they may come together, but are usually separated. Hybrid learning combines them as one line. Core learning activities are conducted online, and the other activities play a supporting role. Nevertheless, it does not mean that these other activities are unimportant because they make online learning more thorough and sustainable.

Hybrid learning focuses on the learning objectives rather than the technology methods. There is no fixed proportion between face to face and online learning. Different proportions are used in different courses, depending on the course, teachers, and learners. Different people can have different options on the overall design. As different people have different learning styles, background, knowledge and learning experiences, learning strategies can be personalized.

Hybrid learning is not a patchwork of learning. The basic principle is to integrate different online learning tools into learning, instead of revising the traditional face to

face learning. The integration process should be carried out gradually and cannot be hasty. The goal of hybrid learning is to combine the strengths of digital and traditional learning and to build a multi-dimensional distance learning space which can motivate learners. Hybrid learning is easier and better for learners but more complicated than the correspondence learning.

Online education has been breaking the boundaries of time and space. Students are having more autonomy in online education. It can meet the needs of working adults. Informatization can make a qualitative change in teaching method and teaching mode of correspondence education. It can improve the development of correspondence education.

There are still some limitations in online education, such as a lack of the feelings and emotions in real teaching context, dependence on student's participation, and self-control and time management. It is difficult to compare correspondence education with online education on the efficiency, openness and convenience. However, as compared to face-to-face learning, online learning does not have the advantage of the people-centered teaching and learning.

Correspondence education has been transformed from the traditional classroom teaching to online teaching, and then transformed back to the hybrid learning mode. This demonstrates that the correspondence model still has its clear advantages. Most researchers believe that hybrid learning model is the best distance education mode. Practice has proved that hybrid learning is an effective method to ensure learning quality. Informatization of correspondence education should be developed gradually. It should not be a duplicate of online education. An important factor to ensure the teaching quality is to strengthen the management.

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