

2014

BioTechnology

An Indian Journal

FULL PAPER

BTAIJ, 10(22), 2014 [13733-13738]

Research on the network platform for English teaching based on streaming media technology

Dongyang Xu

Zhengzhou University of Industrial Technology, Zhangzhou, 451100, (CHINA)

ABSTRACT

With the rapid development of information technology and network communication technology, the process of educational informatization continues to accelerate, providing an opportunity for the development of network platform for English teaching based on streaming media technology, and the traditional teaching model is no longer able to meet the needs of modern social development. This study researches on the application of streaming media technology in network platform for English teaching. To compare with the traditional teaching platform, network platform for English teaching minimizes users' waiting time, diversifies the learning methods. Users can browse relevant information according to their own needs, greatly enhancing the learning efficiency, and this is also the key of the research. This study starts from the definition of streaming media technology and network platform for English teaching, analyzes the necessity and advantages of the construction of network platform for English teaching based on streaming media technology, and the influences of the latter on the former. New communication technologies provide more ways for users to obtain the required information, and make the construction of the network resources achieve a qualitative leap. In the investigation, it is found that the information needs have leveled up to screen real-time interactive information resource instead of simply for information browsing and download under the multi-factors influence. And this also contributes to the appearance of streaming media technology. The studied streaming media technology solves the transmission issue of video and audio information in a certain extent, frees learners from the learning time, place and even geographical constraints, builds a platform for communication between teachers and users, and creates conditions for digital management of video and audio resources.

KEYWORDS

Streaming media technology; Network platform for English teaching; Importance; Digitalization.



INTRODUCTION

A famous American scholar once said: “There has never been anything can attract the imagination and interest of worldwide educators more intensely and consistently than the World Wide Web.”^[1] The rapid economic development bring a direct effect on the development of information technology, among which multimedia technology, network technology and database technology show the fastest speed of development in all areas. The combination of these high-techs can maximize their effectiveness or even guide a revolution, evidently the field of education included. The construction of Internet platform, the integrated use of a variety of high-tech, and formation of life-long learning concept, no doubt provide a solid theoretical basis for the development of network teaching. The digital learning environment under the new situation created by information technology plays a positive role in changing people’s thinking and concepts of education, and provides vast space for teaching reform and further development at the same time. Streaming media technology has features of small size, stream transmission, short wait etc., when applied to the network platform for English teaching, it solves the contradiction between transmission and bandwidth of media file fundamentally, and lay a solid foundation for streaming media technology to better meet the social development needs. In a sense, the application of streaming media technology into network platform for English teaching provides rich resource for educators, and also broadens the users’ horizon, enables their better application of knowledge into learning and life. The building of network platform for English teaching not only can improve the efficiency of high-quality teaching to complete teaching objectives, but also is an innovation for the traditional teaching mode. In view of this, the understanding of the network platform for English teaching based on streaming media technology becomes critical for this study.

INTRODUCTION OF STREAMING MEDIA TECHNOLOGY AND CLASSIFICATION OF NETWORK TEACHING RESOURCES

Streaming media technology

As shown in Figure 1, streaming media technology as its name suggests is to apply the flow technology in network platform for multimedia file’s transmission. The streaming technology processes the uninterrupted image and voice and sends them to website server, so that users can browse, and download related information according to their needs, and there is no need to use the file until the completion of whole compressed file download, for it is a network transmission technology support browsing, listening while downloading^[2]. Comparing with other transmission technologies, streaming media transmission technology is a new media transmission system, but it does not belong to the category of new media. Streaming is the key technology of streaming media. In the streaming process, sound, video, or three-dimensional animation and other media can be transmitted in real time uninterruptedly via video and audio server, and users can get rid of the time waiting with just a few seconds or even less time to start. When media like sound is played on the client, the remaining portion of the media file will automatically download in the server. Streaming is not only short in the start-up time, but also holds no mandatory requirement for the cache capacity. It overcomes the shortcomings of browsing only after the whole file’s loading. Now take the compression coding technology in the streaming media technology as an example, shown in Figure 2.

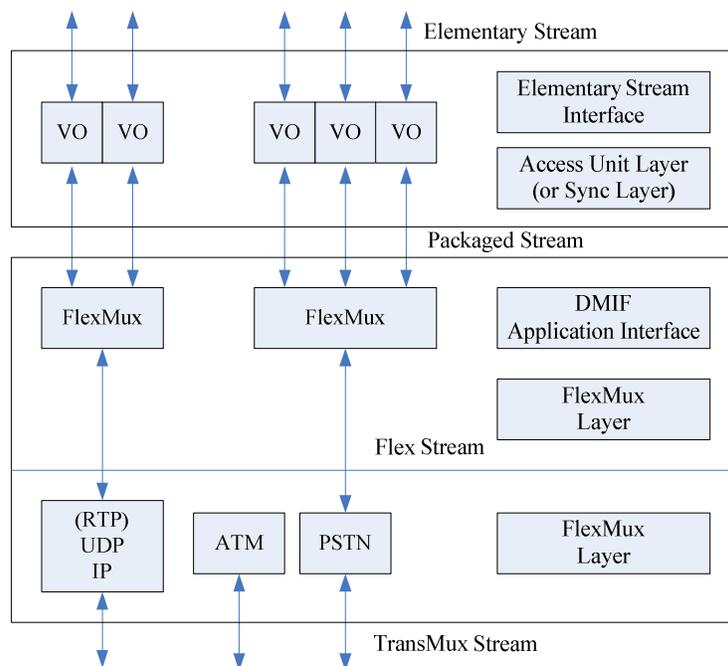


Figure 1 : Overall Framework of Streaming Media

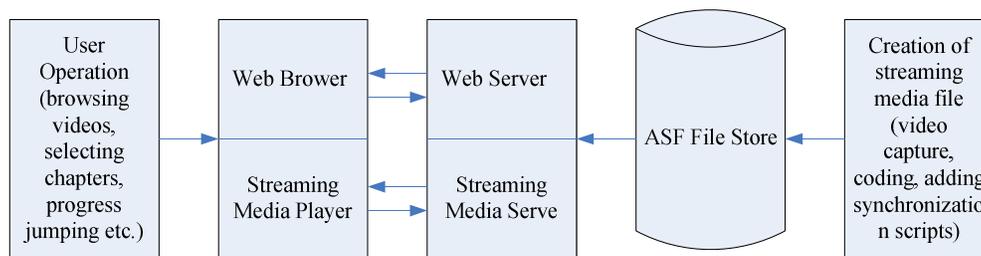


Figure 2 : Process of Compression Coding

The basic principle of compression coding is to reprocess data structure of the file by encoding. On one hand, this can reduce the duplicate or needless space in order to narrow the file memory; on the other hand, this realizes the file existing in form of packages to form data streams. The previous multimedia files are transformed into streaming media format by technology, and video streams of data streams with different transmission rates are generated automatically in different network environments, thus laying a solid foundation for the use of advanced streaming technology.

Classification of network teaching resources

Teaching resources cover a broader scope, which mainly includes all learning materials supported by network teaching operating systems. In accordance with the definition given by “Technical Specification for Construction of Teaching Resources”, the network teaching resources can be simply classified into nine categories of network media material system, network examination, papers, courseware, online courses, teaching cases, FAQs, resource index and documentation^[3]. The network teaching resources in current study of network platform for English teaching mainly include video and audio English teaching resources, which are reflected from the following three aspects. First, media material is the basic unit to broadcast the teaching information as its name suggests, and it includes various video and audio animations. Second, it is reflected in curriculum and web-based courseware. The curriculum is to develop effective teaching plan based on the actual needs. The audio and video information in the teaching process is used to form completed and teaching-oriented software centering on one or more than one knowledge points by comprehensive utilization of various high-tech. Due to the different operating platform, the corresponding courseware division is different. Third, it is reflected by network course. Network course is the presented teaching content of a discipline through the network, which users can browse or download based on their needs, as well as teaching activities carried out by the network. It can be simply composed by two parts: one is teaching content formed in accordance with the teaching objectives and teaching strategies, the other is network environment as a prerequisite^[4].

THE NECESSITY OF BUILDING NETWORK PLATFORM FOR ENGLISH TEACHING BASED ON STREAMING MEDIA TECHNOLOGY

To create conditions for the cultivation of innovative talents

The society in 21st century is an information-based society, which requires talents strong in comprehensive abilities. And only talents with strong comprehensive abilities enjoy advantages in the fiercely competitive era. Under this new situation, people are constantly improving themselves through a variety of ways to enhance their skills so that they can better meet the needs of social development. A person with independent learning ability can get their required information through a variety of ways, and combine the knowledge with practical life, and ultimately achieve their goals in life. The modern networked, intelligent teaching environment just meets the needs of the majority of learners by providing systematic learning resources, allowing either instructors or learners obtain their required information with terminal at different time and places. This teaching method breaks away from the original teaching methods, allowing barrier-free communication among tutors and learners. Besides, it also greatly enhances the enthusiasm of learners. They have a desire for knowledge, and the modern networking and intelligent environment builds a platform for learners to fully demonstrate their ability. Learners can share high-quality resources with each other, and can get free from outside interference to acquire knowledge and areas they are interested in. From all these factors, as shown in Figure 3, it is not hard to see that the building of network platform for English teaching will create conditions for cultivating innovative talents^[5].

To provide a solid theoretical basis for teaching reform

As shown in Figure 4, the network platform for English teaching can be free from time, geographical constraints, with flexible access to information, and shared quality resources. Through complex changeable interaction, it allows learners to actively participate in this process to acquire information based on their own needs, changes the instructor-centered teaching methods in teaching process, and gradually forms an open, universal education system^[6]. Streaming media technology fully plays its own advantages in the construction of network platform for English teaching, serves for teaching and other activities to maximize their utility, acts as an impetus for the further development of innovative teaching mode and provides a strong theoretical basis for further teaching reform.

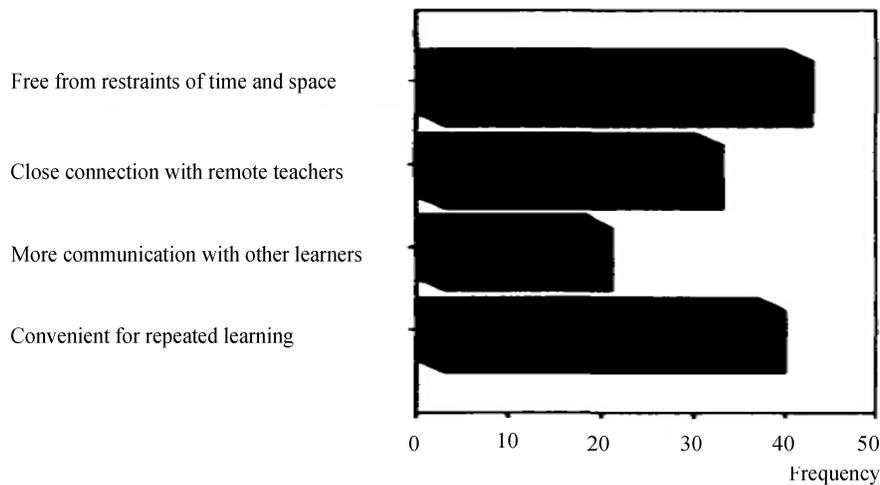


Figure 3 : Factors on Using Resources of Network Platform for English Teaching

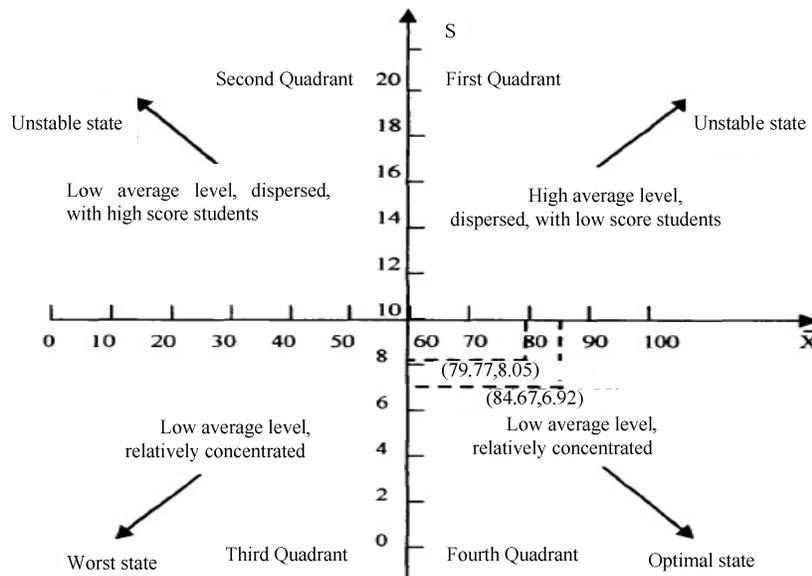


Figure 4 : Status diagrams of several students' English proficiency

Able to meet the needs of modern education, to lay a solid foundation for high qualified completion of teaching programs

China is a populous country, and China's overall education level is far behind that of developed countries. With this background, modern technology should be used to serve teaching cause in China in order to make Chinese education flourish. As a new media technology conforming to the social development, streaming media technology is necessary in construction of teaching resources bank in English teaching, and of course it is not limited to English. According to the relevant data, plans of quality courses has been made and carried out since the Ministry of Education recognized the importance of teaching resources in 2003, aiming at a repository of excellent resources, optimization and integration of various resources for its maximized role. TABLE 1 shows the distribution of national quality courses in colleges annually from 2003 to 2010. Besides, the network platform for English teaching can promote communication, and positively promote the modernization of China's education and its cultural soft power.

ANALYSES OF DESIGN PRINCIPLES OF NETWORK PLATFORM FOR ENGLISH TEACHING BASED ON STREAMING MEDIA TECHNOLOGY

As shown in Figure 5, A represents the principle of advanced nature, B represents the principle of economic practicality, and C represents the principle of easy operation and maintenance. Considering fully of the actual situation and particularity of network platform for English teaching, there are the following principles to obey in the application of streaming media technology in the network platform for English teaching: advanced nature, practicality, stability, simplicity and scalability.

TABLE 1 : Distribution of national quality courses in colleges from 2003 to 2010

Year	Undergraduate Education (Number)				
2003	127	24	0	0	151
2004	249	51	0	0	300
2005	236	63	0	15	314
2006	252	106	0	16	374
2007	411	172	49	28	660
2008	400	200	50	19	669
2009	400	200	50	29	679
2010	438	229	60	36	763
Total	2513	1045	209	143	3910

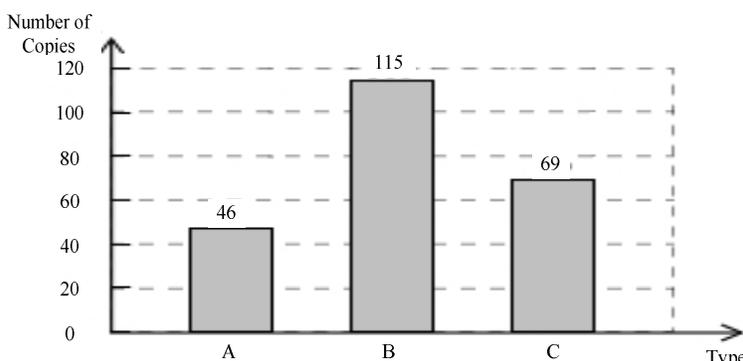


Figure 5 : Users’ Suggestions on the Construction of Network Platform for English Teaching

Principle of advanced nature

Streaming media technology occupies a central position in the network platform for English teaching, since it is a product of the rapid development of society, the principle of advanced nature should be followed so that the network platform for English teaching can also maintain the leading place in the same field, and fully exhibit its effectiveness in every aspect. This ensures that the network platform for English teaching stays the same level with other technology platforms, with advantages in regardless of the cycle, or transmission time, in order to ensure compatibility between the existing or upcoming systems. And this ensures resources in essence, also highlights the importance of network platform for English teaching^[7].

Principle of economic practicality

The design of network platform for English teaching and selection of other technical equipments should focus on their practicality, making effective plans based on the actual situation with perfect combination of economy and advancement. As China’s second language, English occupies a pivotal role in interpersonal relationships, and the use of streaming media technology to build a network platform for English teaching can meet the needs of learners.

Principle of simplicity in operation and maintenance

According to the principle of simplicity, streaming media technology should fully optimize the network platform for English teaching to exhibit its advantages of resources to the maximum. Besides, in the design of network platform for English teaching, the future expansion and perfection should be considered. Under the premise of no affecting the normal access to information, enough space should be preserved for future platform upgrade and optimization. For the future expansion and peripherals adding, a systematic approach of platform applications should be adopted.

PATTERN ANALYSIS OF NETWORK PLATFORM FOR ENGLISH TEACHING BASED ON STREAMING MEDIA TECHNOLOGY

The application of streaming media technology in network platform for English teaching fundamentally realizes the digitalization of audio and visual signals, networked storage, processing and transmission, extends the acquisition routes of network resources, and in a sense enriches the content of network resources, so that learners can actively and selectively acquire video and audio information, no longer acquiring knowledge depending on teachers. Due to the change in teaching methods triggered by high-tech, there must be corresponding new teaching organization and management, which derives a new teaching pattern. Teaching patterns are surely under the guide of scientific theory. As for the current trend in China, the

application of streaming media technology in network platform for English teaching is still in its developing phase, and needs long lasting unremitting exploration, so that it can better meet the needs of teaching modes under network environment. There are web-based class pattern, autonomous learning mode, situational exploratory study pattern, cooperative learning pattern^[8]. Here take the web-based class pattern as an example.

As shown in Figure 6, this pattern mainly comes from traditional classroom teaching mode, is to rely on the network environment to carry out educational activities. It is not bounded by time and place, and breaks through the limitations of objective factors, with place of study not limited to the classroom but using mobile terminal within network area. This combines synchronous mode with asynchronous mode effectively for more reasonable time arrangement for learning. But there is a prerequisite of quality resources stored on the streaming media server by tutors, so that learners only with a supported browser, and player can browse, download, access to needed resources directly by links of the repository, and the questions from learners can be solved in a short time^[9]. This web-based class pattern has relatively high requirements on learners, so to maximize the promotion of learners' learning enthusiasm, laying a solid foundation for high qualified completion of teaching plans by tutors. All these owes to the application of streaming media technology in network platform for English teaching.

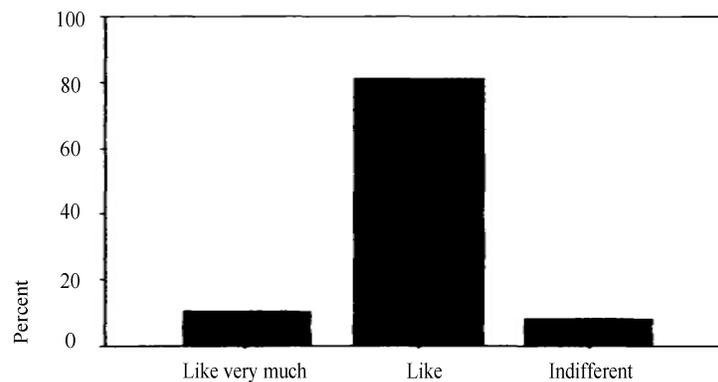


Figure 6 : Learners' Favor on Web-based Class

CONCLUSION

This study starts from the definition of streaming media technology and network platform for English teaching, analyzes the necessity of the construction of network platform for English teaching based on streaming media technology, and further discusses its design principles. New techniques have emerged to meet the needs of social development with rapid development of network technology and intelligent technology, streaming media technology with its own unique character has become one of the most dynamic emerging technologies. There is still a long way to go for its application in network platform for English teaching, which requires researchers to develop a scientific and rational plan based on reality, to exhibit the role of the network platform for English teaching to its maximum thus to serve more people.

REFERENCE

- [1] Liu Baohua, Hong Feng; The development of multi-core cable's open circuit and short circuit malfunction testing system[J], *Electrical Measurement & Instrumentation*, **37(1)**, 33-35 (2013).
- [2] Li Wenfeng; Research and implementation of media streaming on-demand and living broadcast system based on campus network[J], *Science Technology and Engineer*, **(3)6-8**, (2011).
- [3] Ouyang Dianping, Zhou Cong; The design and implementation of network assistant teaching system based on browser/server model including the objectives, Functions and technology [J], *China Management Informationization*, **(5)**, 24 (2006).
- [4] Li Taijun, Wu Zehui; Transmission protocol of streaming media and its application development[J], *Computer Engineering and Applications*, **(03)**, 138-141 (2010).
- [5] Chen Yanhua; Design and implementation of the web-based network teaching system[J], *Journal of University of Electronic Science and Technology of China*, **(5)**, 52 (2007).
- [6] Chen Hua, Gu Yimin; Discussion on streaming media technology and its applications in teaching[J], *Vocational Technology*, **(3)**, 67-68 (2009).
- [7] Gao Lei; Realtime tutoring system based on stream-media and its design and realization[J], *China Science and Technology Information*, **(13)**, 207 (2010).
- [8] Luo Fafen, Yuan Songhe; Research and classification of distance teaching and management platform[J], *E-education Research*, **(05)**, 28-32 (2008).
- [9] Wu Jinxia, Lin Xiaoming, You Wenxia; Multimedia courseware design based on streaming media technology[J], *Application Research of Computers*, **(4)**, 70- 71 (2013).