

Investigation and Development Trend of Network Education Software

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Abstract

In recent years, the market scale of online education or user scale, always stay in the growth of larger, at the same time, because of dislocation education concept, resources, the serious homogeneity market subdivision, lack of innovative business model, profit model is not clear, causing most of the online education institutions losses, even collapse, seriously restricted its healthy development. Based on the online education platform as the breakthrough point, through the investigation and study, content analysis, comprehensively inspects the domestic present situation of online education, clear existing problems and difficulties, systematic analysis of the development of online education internal and external motivation, positively seek the future trend and development direction of online education, to promote the rapid development of online education in our country.

Keywords

Online Education; Distance Education; Educational Issues; Education Development.

1. An Overview of the Current Situation of Online Education in China

1.1. Basic Information of the Platform

The business types of 16 platforms, including NetEase Open Class, include content type, tool type, platform type and comprehensive type, among which content type platforms account for a high proportion. All selected platforms can conform to the development trend of mobile Internet. Support PC applications at the same time. It also supports iPad, mobile phone and other mobile terminals. Most platforms provide rich educational resources, supporting teaching activities such as video on demand, live interaction, tutoring and q&a, as well as online interaction between teachers and students and between learners. Some platforms also have corresponding features, such as new Oriental online "personalized learning", MOOC "learning path planning", ape question bank "real-time report", xuetang online "students learning big data mining" and so on. YY Education, Tencent Classroom, Taobao students and other supporting institutions or individuals will enter and start classes, and provide corresponding technical services and software resources.

1.2. Distribution of Market Areas

Through the market distribution of 16 online education platforms such as NetEase Open Class, it is not difficult to see that K12 education, foreign language education, vocational education, examination services are the hot fields of online education in China at present. Many platforms have integrated market areas, such as Hujiang.com, YY Education, Taobao Classmates, etc., while some platforms have vertical market areas, such as 51 Talk, MOOC, babytree, etc. Further analysis shows that foreign language education, examination services, vocational education and other fields have a more detailed market division, which directly points to specific consumers. For example, Hj.com subdivides "foreign language education" into English, Japanese, Korean and other minor languages, and further subdivides each sub-field. On the contrary, the market division of K12 education field is relatively extensive. The platform pursues "large and

comprehensive" while ignoring "specialized and refined". The basic service content is almost the same, lacking individuality and innovation.

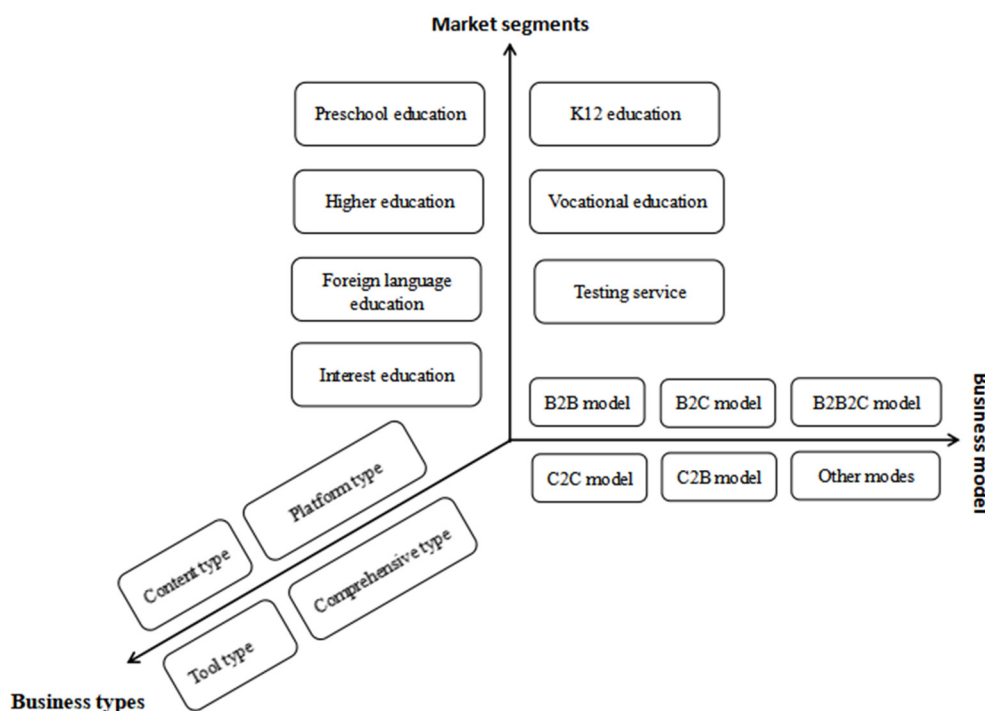


Figure 1. 3D model of online education platform classification

2. The Business Model of Online Education in China

2.1. Online Education Resources

The analysis shows that most platforms provide video course resources, but most of them are classroom teaching records, which are traditional and lack of interaction. NetEase Open Course, Xuetang online and other rich domestic and foreign high-quality video course resources, users have more choices. In order to adapt to the characteristics of fragmented learning, E University and MOOC provide micro-video courses of about 10 minutes in length to reduce the granularity and complexity of learning content. Rtvu online, as a typical platform of higher education, provides high quality online course resources. Question banks are also the educational resources that most platforms focus on, and some platforms also provide supporting study plans, electronic textbooks, and synchronous courses. It is worth mentioning that Beijing No. 4 Middle school network school, baby tree, in addition to providing corresponding educational resources, but also provide rich family education resources for parents to learn.

2.2. Online Teaching and Learning Mode

Through research and analysis of teaching and learning modes supported by 16 platforms such as NetEase Open Course, 13 of them support on-demand teaching mode. Due to the unidirectional information transmission of this mode, it is difficult for teachers and students to interact with each other, and there is a lack of sense of teaching on the spot, so it has high requirements on learners' autonomous learning ability. Eleven platforms support the interactive live teaching mode, which can enhance teacher-student interaction and the validity of online teaching activities. Among them, New Oriental Online, Huijiang Online School, YY Education, 51Talk and Xuebao also support the "1-to-1" live teaching mode with higher interactive intensity. In addition, some platforms pay attention to the innovation of teaching mode. For example, E-Xuedong adopts personalized evaluation, precisely locates the weak links

of learners' knowledge mastery, and provides "personal customized" teaching. Learning treasure and Ape Test bank adopt exercise explanation mode to simulate offline tutoring; Beijing No. 4 Middle School Online school, radio and Television University online support learners online self-study, and provide corresponding learning support or aid services

2.3. Online Interaction Mode

Interaction is not only the need for the re-integration of online teaching, but also the need to enhance the sense of belonging of learners and overcome learning difficulties. It can be seen from the online interaction modes supported by 16 platforms such as NetEase Open Class that all platforms support certain forms of online interaction, but their strengths are different. The main ways of teacher-student interaction are live broadcast interaction, tutoring, q&A, discussion, etc., while learner interaction is through learning societies, communities, QQ groups, E-mail, etc. Among them, teacher-student interaction such as live broadcast interaction, tutoring and q&A are widely used, while learning communities (including forums) are commonly used for learner interaction. It is worth mentioning that the live broadcast interaction of Platforms such as New Oriental Online, YY Education and 51 Talk, as well as the learning association of Huijiang Online School, support more intense teacher-student interaction and learner interaction, and the online learning is more common.

3. Business Model and Profit Model

The business models of online education platforms usually include B2B, B2C, C2C, C2B, B2B2C, O2O (Online to Offline), etc. Their profit models are generally divided into course fees, platform commissions, software fees, value-added services, advertising fees, etc. The business model and profit model of 16 platforms such as NetEase Open Class. It is not difficult to see that the proportion of B2C mode is the highest, followed by B2B2C mode (including B2B mode) and C2C mode, and the proportion of C2B mode and O2O mode is small. In terms of profit model, except that all resources of NetEase open course are free of charge, most other platforms adopt the strategy of "free trial and paid purchase" and make profits through "course charging". "Value-added services" are also important profit channels, such as learner employment recommendation of China Accounting Online School and online course certification. YY Education, Tencent Classroom, Taobao Classmates and others attract institutions or individuals to open courses and receive commission from the platform or share of course sales. E Xuedu firstly attracts learners with free online resources or services, and then proceeds by providing course guidance and services offline.

4. Existing Problems and Difficulties

Found, the domestic online education rapid development at the same time, there are still many problems and difficulties urgently to be solved, mainly displays in: (1) online education "alienation" phenomenon is outstanding, the traditional education thought is still in the dominant position, Internet is neither reflect the reshaping of the Internet on education function, also conflicts with the nature of education and law; (2) The online education platform has relatively single functions, and the support for mobile learning, personalized learning, teacher-student interaction and learner interaction needs to be improved; (3) The online education market needs further segmentation, and insufficient attention is paid to vertical market, which is not conducive to the "perfection" of education products and services; (4) The quality of online education resources is not high and the homogeneity phenomenon is prominent, two-way interactive education resources are lacking, it is difficult to meet the needs of fragmented learning, intelligent push of resources, rapid retrieval and other technologies are not mature; (5) Video-on-demand teaching mode lacking teacher-student interaction is still

dominant, and it is difficult to reflect the centrality of learners. Cooperative learning, project learning, virtual practice and other interactive modes are rarely applied, and the analysis of learners' learning behavior and data mining of learning activities are not enough. (6) The interaction mode is single, the intensity and breadth cannot meet the needs of online teaching, and the online and offline communication mechanism is not perfect, which makes it difficult for learners to get real classroom experience; (7) The business model lacks innovation, the application of C2B mode is not popular enough, and the existing O2O mode is mainly used to complete "course experience" and "transaction payment" online, and eventually is diverted to offline teaching or counseling, so the function of online education is not fully utilized; (8) The profit model is not clear, the diversified and differentiated needs of learners are not studied enough, and the content of "value-added services" needs to be further expanded. In addition, how to move from the blind "money burning movement" to the road of rational development, to realize the connection with the national education system, to obtain the quality recognition of the society, etc., are the problems facing the development of online education in China.

5. Explore the Development Trend of Online Education in China

To explore the future development trend and direction of Online education in China, it is necessary to base on the current situation of online education in China and comprehensively consider relevant policies and regulations, capital investment, supporting technology development and social demand and other driving factors. From the macro education thinking, system development and micro market field, education resources, teaching activities, learning services, business model, profit model and other different levels, different dimensions.

5.1. Set up Internet Education Thinking and Return to Service Orientation

In view of the phenomenon of "alienation" in the development of online education, we believe that the Internet education thinking must be set up in order to return to the position of "serving learners". What is Internet education thinking? In short, it is the organic integration of Internet thinking and traditional educational thinking. About Internet thinking, Li Hai-shi to think, such as the Internet thinking is essentially a philosophical theory, including the spirit of the Internet, the concept of the Internet, and Internet economy, the core thought is open, equality and cooperation, sharing, virtual entity through, time and space constraints, the basic idea is to break, product perfection, with free money, the selfish departmentalism of the user, etc. Compared with Internet thinking, traditional education thinking is much simpler in concept, that is, everything starts from the quality of education, including learner first, professional spirit, reputation first. Although there are differences in standpoint between the two, there are also similarities. The integration of the two is the Internet education thinking with learner-centered, high-quality service and content, online and offline communication, and online value-added service profit as the core content. The thought of Internet education conforms to the essential law of education development and reflects the internal requirements of the deep integration of Internet and education and the remodeling of traditional education. Setting up the thinking of Internet education is conducive to the return of online education to service standard, which is of great significance to the healthy development of online education in China.

5.2. Establish Credit Banks and Connect the National Education System

How to respond to the demands of learners for certification and conversion of learning results, and realize the connection with the national education system, is a major issue for the future development of online education. The State Council's Guiding Opinions on Actively Promoting the "Internet Plus" Action and other documents emphasize the establishment of credit accumulation and transfer systems to promote mutual recognition and connection of learning outcomes. The establishment of the "credit bank" system can get through the curriculum setting,

credit standards and examination certification of national education and online education, provide multiple opportunities for learners to learn, and meet their diversified learning and development needs. It can be predicted that the realization of certification, accumulation and conversion of learning results through "credit bank" will be the development trend of online education in China in the future. This means that in the future, whether learners through online or traditional face-to-face way to obtain credits will be stored in the "credit bank", and then according to certain standards can "exchange" the corresponding education certificate, qualification certificate. At present, Shanghai city, Yunnan Province and the Open University of China are carrying out the pilot work of mutual recognition and transfer of credits. Over time, with the further promotion of "credit bank", online education characterized by openness, flexibility and individuation will have a broader space for development. In addition, after learners choose to participate in online learning and complete the assessment, online education institutions or traditional education institutions will be awarded a socially recognized qualification certificate, which will also be an important trend in the future development of Online education in China. MOOC2Degree, launched by the Association for Higher Education in 2013, is an active attempt in this regard.

5.3. Market Segmentation and Vertical

The core of market segmentation is to divide the whole market into several sub-markets and sub-markets directly pointing to specific consumer groups through market research and based on differences in consumer demand, consumption mode and consumption habits. Segmentation of online education market is conducive to online education institutions according to their own characteristics and advantages, and the degree of matching with the sub-market or sub-market, scientific determination of target market strategy, which is the development of online education from blind to rational requirements. The future online education market will be segmented according to the diversity and difference of learners' needs. In particular, the current relatively extensive K12 education market needs to be subdivided according to the needs of different groups (such as teachers, parents, students) and the content of different textbook editions in the face of diverse audience groups and rich versions of textbooks. Market vertical refers to the "narrow and deep" characteristics of providing services to consumers by selecting certain content separately. Choosing vertical strategy is not only conducive to "intensive cultivation" and "perfection" of online education resources and services, forming enterprise brand effect and learner brand recognition, but also convenient for learners to quickly locate learning resources and save time cost. The segmentation and vertical of the market is a vivid embodiment of the Internet education thinking of "learner-centered, providing high-quality services and content".

5.4. Educational Resources should be Diversified and Pushed

Online learners have great differences in learning motivation, learning style, initial ability and cognitive preference. Therefore, educational resources with rich contents and diversified forms must be provided to meet their different needs. Even the same teaching content needs to be presented in various forms. For example, when a topic is presented in micro-video, supporting text materials should be provided to adapt to different learning situations and learners. In the future, in addition to one-way educational resources such as micro-videos, electronic textbooks, question banks and study plans, two-way interactive educational resources such as virtual LABS, educational games and virtual simulations will be widely used in online teaching activities. On the other hand, faced with a large number of scattered educational resources, with the development of big data and learning analysis technology, "automatic push" will be an important way for learners to quickly obtain educational resources. There are many related achievements of intelligent push of resources. For example, Mou Zhijia and Sun Zhong have conducted in-depth studies on personalized recommendation of learning resources, and their

results are of great inspiration to the research on automatic push of online education resources. At present, automatic push technology has been widely used in e-commerce platforms. Compared with e-commerce, online education has higher diagnostic requirements on learners' needs and cognitive preferences. If inaccurate or even incorrect diagnostic results are used to push education resources, it will not only be difficult for learners to learn, but also bring additional burden.

5.5. Mobile and Ubiquitous Teaching Activities

In recent years, the scale of mobile Internet users and mobile online education users in China has shown a trend of continuous and rapid growth. This shows that with the gradual improvement of the Internet and the popularity of intelligent terminals, mobile Internet applications begin to penetrate deeply into the field of online education. According to "2020 China Basic Education Technology Outlook -- Horizon Project Regional Report" (referred to as "Horizon Report"), mobile learning, cloud computing technology is very likely to have an important impact on China's basic education within a year. With the rapid development of relevant technologies, the continuous improvement of mobile communication bandwidth and speed, the reduction of data rates, and the wider coverage of wireless WIFI, online education will gradually shift from PC to mobile. In this regard, most online education institutions are very keen to develop online education apps and provide micro-resources adapted to them to support mobile teaching activities such as course learning, interactive discussion, online collaboration, tutoring and q&A. If "mobile" is the recent trend of online education, then "ubiquitous" is the long-term trend of online education. In the future, in the ubiquitous learning environment based on cloud computing, big data, Internet of Things and wearable technology, online teaching activities are not only more flexible, but also can provide learners with more situational, authentic and social learning experience.

5.6. Intelligent and Differentiated Learning Services

At present, the learning services provided by online education platforms mainly include consultation, guidance, q&A and homework correction, etc., but they are often unable to cope with the huge user groups. According to Horizon Report, learning analytics, adaptive learning, smart grading, wearable technology and more will be adopted in the education sector in the next four to five years. The application of these technologies will promote online learning services from artificial, scale gradually to intelligent, differentiated. Use big data technology, to learn analysis technology, adaptive learning technology and so on, based on user information, login frequency, test scores, and participate in case study data for system operation, can locate precisely the learner's individual needs and preferences, real-time adjustment of learning content, so that the automatic push conforms to the learner characteristics, the adaptive learning service possible. The intelligent and differentiated application of online learning services is still in its infancy. For example, in the automatic question answering system of online education platform, when learners encounter difficulties, they only need to send their own questions to the platform. The system ADAPTS learners' questions with FAQ (Frequently Asked Questions), and automatically feedback the answers to learners. For example, in the process of MOOCs learning, the application of intelligent scoring technology not only makes online learning activities more interactive, but also greatly reduces the workload of teachers.

5.7. Business Model to C2B,02020

The so-called C2B mode refers to that the learner puts forward the requirements for learning products and services, and educational institutions quickly produce products and provide relevant services according to the requirements, also known as the "private customization" mode. The vitality of C2B mode lies in "providing the most suitable service", the key of which is to accurately excavate the real needs of users. At present, C2B mode has been applied to online

education. For example, E University accurately diagnoses the knowledge and ability level and weak links of learners through the evaluation of learners, and formulates personalized tutoring schemes accordingly. On the other hand, although the current O2O model realizes "online and offline communication", it is half-ring structure, incomplete in teaching and marketing, especially in the field of K12 education, there are defects in providing targeted services. We believe that the O2O2O model may be the "key" to solve this problem. This is because both the O2O2O (Online toOffline to Online) mode of Internet enterprises and the O2O2O (Offline to Online toOffline) mode of traditional educational institutions can achieve good teaching closed-loop. It is conducive to providing targeted teaching services for learners, making online teaching more efficient and offline teaching better. It should be noted that there is no conflict between C2B mode and O2O2O mode. Both of them reflect the "learner-centered" Internet education thinking and represent the future direction of online education business model.

5.8. Clear and Diversified Profit Models

Since the birth of online education, there has always been a debate between "free thinking" and "charging mode". With the further segmentation and vertical of the market, online education institutions must establish clear and diversified profit models based on the free Internet thinking and their own competitive positioning to achieve profits. From the current practice, traditional education institutions generally make profits through course fees and value-added services, such as New Oriental Online and China Accounting Online School. Internet enterprises, such as Tencent Classroom and Taobao Classmate, mostly make profits through platform commissions, value-added services and advertising fees. We believe that the future profit of online education, the most important is value-added services. As for the increasingly popular MOOCs, Li Xiaoming, a professor at Peking University, pointed out that moOCs themselves are free, and if there is a fee, it is only for value-added services. In addition, focus on products with small sales volumes and a wide variety of products, and monetize the "long tail" by providing individualized services to a large group of learners. In the field of K12 education, providing high-quality services that take into account the needs of students, parents and teachers is the key to profitability. For smaller organizations or individuals with modest financial resources and little marketing experience, integrating into the ecosystem of online education giants is a good way to make money.

6. Conclusion

The Internet education thinking centered on "learner-centered, providing quality service and content, online and offline communication, and online value-added service profit" is not only the fundamental thinking mode of online education, but also an important concept leading the future development of Online education in China. Just as e-commerce is unlikely to subvert physical stores, online education is unlikely to completely replace traditional education. In the era of "Internet plus", the two will coexist in a complementary and integrated way. Although the successful experience in the field of e-commerce has certain reference significance for the development of online education in China, it should not be mechanically copied. We should keep a clear mind, in-depth study of the unique essential law of online education, and strive to promote the innovative development of online education in China.

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