

The Analysis of Web 2.0 application in University E-Learning in China

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Abstract: E-learning is getting popular and popular in China today, and most universities acknowledge E-learning has its great future and develop it as an important component of university education. However, now E-learning pattern which is only the copy of the traditional education could not inspire students' interest of study. Therefore, the quality of E-learning is even worse than the traditional pattern, which makes E-learning in a fragile position. This paper analyzes the influence of Web 2.0 in Chinese Universities E-learning, especially focused on the University of Qingdao, China, points out the preconditions of Web 2.0 application; finally expatiates the paths of Web 2.0 application in E-learning to improve the quality of E-learning.

E-Learning in China-Our Situation Today

In 1994, the start of China Education and Research Network (CERNET) project which is aimed to promote Chinese education on the platform of internet indicates the beginning of China E-learning, and indeed lays a foundation of modern education. In Sep, 1998, our national education department permits to set Tsinghua University and other 7 universities as the experimental unit of modern long distance education, which is the milestone of our E-learning development. From then on, Chinese universities begin the exploration of E-learning pattern. And right now E-learning is used in almost all the fields in our country such as enterprises employee training, long distance education, etc. And it plays more and more important roles as the best accessorial education methods.

During the development of E-learning, Chinese government plays a very important role. As the advantages of E-learning could solve the illogicality between the insufficient educational resources and the large population, so the government promotes actively E-learning development in two ways in the educational fields. One way is the government invests and helps to establish E-learning platforms for elementary education which now is mainly used in the elementary education in order to share the high quality education resource in our poor and uncultured area. The other way, the government issues some policies in order to encourage E-learning is used in adult diploma education, which resolve the time conflict problems successfully in adult education universities. The typical example of this is, in advanced education domain, our government established the project of "China Quality Open course Ware" to encourage all universities to supply high quality open courses online. Till 2006, there are more than 1,000 courses which were confirmed as the "national quality open course". These open courses use web as a basic exhibition platform to give lessons by all teaching videos and necessary materials, which students could learn themselves and also make the example for all the teachers though over the country.

However, though E-learning develops in upward tendency and spreads widely in China today, there is an obvious problem that is the low quality of E-learning, especially in university E-learning. Most teachers don't deny the advantages of E-learning, but now more than 80% E-learning courses is only the copy of our traditional one way

learning pattern which means only teachers give all the materials to students and no more interactivity and collaboration during the learning procession. In the teaching and learning procession, teachers only act as supplier and explainer of knowledge instead of guider or advisor. There is no chance for students to show their creative ability and go-aheadism. So, E-learning is not attractive for university students as we hoped and sometimes even worse than the tradition learning, which frustrate some of E-learning teachers too. The vicious circles of disappointment and negative lead to the decline of E-learning quality. The advantages of E-learning disappeared and its disadvantages come to us, which make it confused that it is the problem of E-learning itself or some others in university education?

Therefore, how to activate interest of university students and teachers in E-learning and improve the quality of E-learning is the most important question in front of us. This paper plans to answer the above question via bringing Web 2.0 into E-learning on the base of our experience in Qingdao University of Science and technology.

Web 2.0-the new and effective development for E-Learning in China

Web 2.0, this idea is still new for most of Chinese netizens; however, blogs are quite familiar for almost every one. So we will introduce the condition of Web 2.0 in China and then how it will influence university E-learning today.

Web 2.0- the familiar and strange topic in China

Now Web 2.0 has become the familiar and strange topic for common people in China. According to the report of “2005-2006 China Web 2.0 Research Survey”, there are 71.4% persons in the survey who have heard about Web 2.0; especially those professional netizens think Web 2.0 is the hottest phrase now in China IT industry. It is amazing that Web 2.0 has such a high popularity, but that doesn’t mean high understanding rate. After the survey of understanding rate of Web 2.0 in China, we are surprised to know that there are only 1.9% netizens who really understand the meaning of Web2.0, but more than 80% netizens who have no clear idea what Web 2.0 is (figure 1).

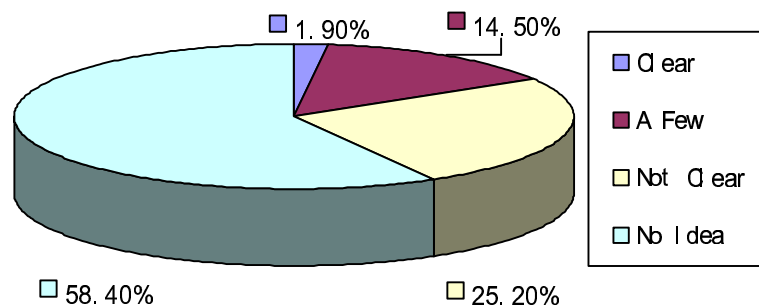


Figure 1 the Survey of Web 2.0 Understanding Rate

The reason of such low understanding rate is that Web 2.0 in some case is too professional idea for commonplace people. As the matter of fact, if we replace Web 2.0 to blogs, wikis, or WAP in the survey, there will be lots of people select the right answer. According to “2006 China Web2.0 Current Situation and Development Trends Survey Report”, in all Web2.0 services, 71.9% people have used blogs, and 48.8% people have used WAP. Those who use Tag, SNS, wikis, is not up to 15%. So, Web 2.0 already steps into our common life and were accepted by most people, especially for blogs.

Blogs-the most successful Web 2.0 application in E-learning

Blogs become the most popular web service because it gives people more chances to part of the internet, not only in China, but also in the world. Since blogs can inspire people’s interest, so there are some practical trails in E-learning. For example, some teachers now are using some public blogs platform to improve the quality of E-learning courses, like China Education Blogs (<http://blog.edu.cn/index.html>) during these courses, teachers mostly will give students some topics or ideas and ask students to write down their own feeling on blogs and share with

others. Sometime, teachers use these blogs to exchange their experience and the achievement of students. There are also some other try of Web 2.0 services who bring RSS into E-Reading. All the above applications suggest obviously that Web 2.0 will not only bring a new technology revolution but also deep influence on university E-learning.

What's the influence of Web 2.0 on university E-Learning in China?

Thought there is still no exact definition of Web 2.0, we still could summarize its main characters from its various application web services. One of the most important characters of Web 2.0 is to waken web user's enthusiasm, and change the position of web service from designer-oriented to user-oriented. Therefore, if we bring Web 2.0 into E-learning, the influence of Web 2.0 application on university E-learning will change the teaching and learning pattern, and change the content of learning, which will upgrade the quality of E-learning.

Firstly, peer learning and teaching. As what teachers did by using blogs in E-learning, these sort of application will change the teachers' educational idea from one-way teaching to interactive bidirectional education. According to Web 2.0 theory, teachers will reconsider their character in teaching, and will think about more on how to guide students themselves to learn what they need and like, advise students how to research and practice what they have learned via Podcast, RSS, etc. Then result would be that teachers will adjust their character from the old teacher and judge to the new roles maker, and let students become teachers and judges themselves, which will highly inspire the enthusiasm of students study. As one of the purposes in university education, is to improve students' self-research ability, so it will be not far to realize this with the transformation of our educational idea via Web 2.0 technology and theory. With the change of teachers, students will change the tradition learning pattern to personalized and collaborative style. If teachers shouldn't copy the traditional teaching pattern any longer, on the contrary, they should give all kinds of necessary study materials and encourage students to do personalized and collaborative learning; this will highly promote their practical and creative ability and team spirit. Consequently, students can not depend too much on teachers again, and have to manage their study by themselves, and at this moment, students will focus on their interest instead of what the teachers want to give before. This style doesn't mean either of teaching or learning part will get free, as matter of fact, because the range of study is much more larger than before, so each of both part have to deal with more than ever, which will improve the quality of learning for both part at the same time.

Secondly, content transformation. As Web 2.0 services could improve the interaction between learners, and then it is possible to transfer the invisible knowledge to visible knowledge. With the Web 2.0 application in universities E-learning such like blogs, this will give students more chances to share their own experience and knowledge on line with teachers or other students. As in the university education, it is also very important for students to enhance their integrative ability, and this will be a big challenge for traditional education. However, in the E-learning based on Web 2.0 environment, it will be very easy for all the participants to promulgate and receive all the information. During the procession of information exchanging, students also finish the invisible knowledge study course. So the invisible knowledge will transfer to visible knowledge in the learning procession.

Generally speaking, Web 2.0 will not only change the educational idea but also the pattern of university E-learning, which will highly improve the quality of education. However, though we could forecast these nice views of Web 2.0 application in E-learning, there are also some avoidless difficulties. As what we have pointed out, most Web 2.0 applications are the exploring stage and mainly depend on the public web service platforms, which will be limited by the public web platform and can not fit the demands of education. So we will go further study on the predictions and paths of Web 2.0 application in the following part based on our experiences.

How to apply Web 2.0 in E-Learning?

In this part, we will clarify the predictions and paths of Web 2.0 application based on our experience in Qingdao University of science and technology, and try to answer the question how to apply Web 2.0 in E-learning.

The preconditions of Web 2.0 application

If we plan to apply Web 2.0 on university E-learning, there are two objective preconditions which should be ready. One is the governmental environment for e-learning and the other is mature Web 2.0 platform.

Firstly, the policy makers of universities should create good environment of E-learning. The biggest different between western advanced education and Chinese advanced education is independent management degree. Most Chinese universities control the education pattern much stricter than western universities. Most universities still have a conservative attitude on E-learning, especially when E-learning quality is not so good right now. So there are only a few supportive policies and funding. Therefore it is hard for professors to research E-learning deeply. Consequently, it will succeed easily to develop E-learning with the support of the university.

Secondly, Web 2.0 technology combine with E-learning perfectly. Now Web 2.0 is the hottest topic in our IT industry, but there still is no any successful E-learning platform based on Web 2.0 which was accepted by most of universities. Now Web 2.0 technologies are used more and more in various web based applications, such as blogs, wikis, etc. But how to combine this with the requirement of E-learning should be paid more attention. To create the platform is to create a pure learning environment for learner and user, and also to avoid some outside disturbance, which is hard to solve in the public Web 2.0 services like advertisement. Without the necessary E-learning platform, it is impossible for different major teachers begin the E-learning.

The paths of Web 2.0 application

When we have the preconditions of Web 2.0 application, we can follow the next three steps to apply Web 2.0 in E-learning.

Firstly, design necessary components of the E-learning based on Web 2.0 according to various characters in different courses. There are so many Web2.0 elements around now and easy to use, and if we want to use them in E-learning, it doesn't mean that we just assemble all of them together easily, as different courses have its own characters and teaching-learning rules. So it is important for us design all necessary components and prepare for the platform establishment. For example, in literature courses, maybe wikis and blogs are the best choices for E-learning, and the rest maybe not necessary for the course.

Secondly, structure E-learning platform based on Web 2.0. On the base of designing necessary components, to structure E-learning platform is the necessary base of use Web 2.0. During the procession of structuring, we have to think about how to collective and management all the materials, because all the study materials, referent documents and even the study result like paper or thesis, are the evidence of E-learning effect. Then we should set up teachers and students roles according to the character they will act in the courses, and during this procession, we have to keep in mind each part will communicate with each other and create or dismiss a group flexibly in order to satisfy the realistic education procession. Finally, it is also important to have an infrastructure for learning which consists of several integrated learning services. Because it is not enough just to use wikis ore blogs separately, only can learners use Web 2.0 services as free and reasonable as they can, it will increase their interest.

Thirdly, set up the evaluation mechanism of Web 2.0 application in E-learning. As there are more interactivity in E-learning courses, we need to set up the evaluation mechanism to ensure effect of the procession of E-learning. The evaluation mechanism is different from the final examination. Because it doesn't focus on how much students learned, it focuses on if the student could learn or if they learn in the right way. With the evaluation mechanism, we could find the problems in the structure or the procession of E-learning promptly and adjust it to the right way to insure all students could get what they prefer. The evaluation mechanism will always keep the E-learning environment suitable for teachers and students.

Consequently, we select the necessary Web 2.0 services from all the possible choices, then glue then together on E-learning platform according the demands of learner/teacher who will process the learning-teaching via using those Web 2.0 services according to their roles. This will highly increase the interest of both parts. In order to avoid the wrong settings of the platform and procession, we use evaluation mechanism to insure the quality of E-learning. So, we use the following figure (figure2) to summarize the above opinions. In order to make this clearer, we will explain the above ideas according to our experience in Qingdao in next text.

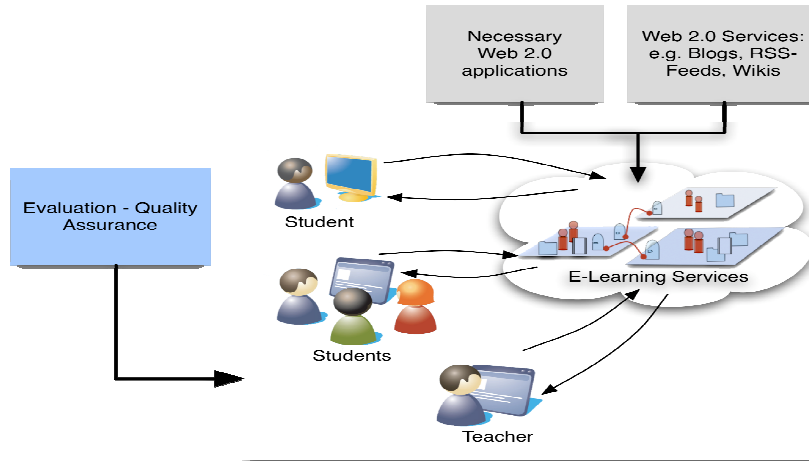


Figure 2 the Path of Web 2.0 Application

Our experience and plans in Qingdao

QUST begins E-learning construction since 2002 to echo the policy of developing open-courses from our government. At the beginning, it only focuses on study materials share which means teachers only establish a website and publish all his/her education materials. As this can not really teach students, then teachers begin to publish their teaching video which is the copy to class teaching. This model now is using in most E-Learning course.

It is obvious that the above model is the copy of traditional education pattern, even worse as there is no interaction between teacher and students like the old pattern in class. In order to solve the problems, some teachers begin to add forum in their website, so they could answer questions in public way. Also with the supplement of emails, it settles down the problem of low quality in E-learning in some case. But, under this condition, the interest of teacher and students in E-learning is still at a very low level.

In 2004, with the establishment of Chinese-German mechanical faculty (CDTF), the cooperative project between university of Paderborn (UPB), Germany and Qingdao University of science and technology (QUST), China, we begin the e-learning project cooperation. The project plans to establish the E-learning platform which will support the cooperation between teachers from both universities and students' study. With the support of the universities from both sides, this project now has successfully established the E-learning platform in Qingdao, now it is working very well for three years.

According to three years cooperation between two universities, now this platform is available for all teachers and students from both universities, especially giving much helps to those students who went UPB for further study. This open platform is purposed to help German teachers give Chinese students' lesson who can share their teaching materials and discuss questions and problems with Chinese students. Meanwhile, it also gives students a virtual room to manage their own E-learning courses and communicate with others. As the platform has been successfully used in UPB, so since the beginning, it supplies an environment in which it already glues together email, forum, group and other functions to realize the collaborative E-learning.

As we have successfully established the E-learning platform with the strong support from our university, then we plan to make it the platform of all open courses of QUST, which are all E-learning courses. As we mentioned above, all these E-learning courses didn't play a good role for our university education. Only a few students visit the website of all these open courses. In order to improve the quality of E-learning courses, now we have successfully structure the platform based on Web2.0 services, adding such like RSS, blogs, wikis, etc. which will fit the need of our today's E-learning. With the support of all the above Web 2.0 services, it is possible for us to change teachers' education pattern, which means teachers won't only teach, mostly they will guide students and try to inspire students' interest of E-learning. For students, maybe it will be strange to do this at first, because long term one way teaching, in some case, reduce some self-study ability of students. However, as so many students has their

own blogs and would like to open to the others, it will not be too difficult for them to get use to this new style of E-learning.

Besides the above approaches, in order to insure students' learning quality, we plan to evaluate the whole procession of E-learning. We will use a survey to find if students like this style, or feel difficult for them, even feel boring of this. If it is accepted by all, then we will go to test which part makes study high quality, and get to know why. It will be the strong evidence of how to set the E-learning environment and make it useful. Of course, the final examination also will be the best answer for the quality of E-learning. However, it is also possible some of new E-learning environment based on Web 2.0 are refused by students, which will point out the necessary adjustment direction. Therefore, the main advantage of evaluation, is to keep E-learning based on Web 2.0 on the right way all the time.

Conclusion and outlook

Now there are more than 70% netizens who get to know blogs and use it, which indicate Web 2.0 technology and theory have been accepted by most Chinese people. On the base of such popular application of Web 2.0, if we can introduce Web 2.0 into E-learning appropriately, it will highly inspire the students and teachers passion of E-learning, which will solve the problems of low quality of university E-learning finally. Meanwhile, we have to prepare for long term work for these changes of our educational pattern as the old pattern is still the main way of our modern education, especially for Chinese teachers and students.

No matter what the result of the above creation, now the advanced education resource in China is still rare, if we could find the right way of E-learning, it will lighten the pressure of demand of the advanced education, meanwhile, improve the educational resource collocation, and enhance our education level.

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