

Will Digital Learning Become Future Trends: Findings from A Case Study of Chinese Students

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Abstract. As the pandemic slowly winds down, how e-learning evolves may be a question for education and technology workers for some time to come. This article discusses E-learning has been dramatically boosted by the pandemic to cope with the difficulties of offline learning. In China, Bilibili is a prominent example of Internet video platforms that are using their strengths to drive the popularity of online learning. How can people advance the benefits and eliminate the disadvantages of e-learning to make it the future of learning? Literature Review finds out, although many scholars have studied the influence of e-learning, this study fills the gap of the influencing factors of e-learning on students and the obstacles to the popularization of e-learning in China based on Chinese students of all ages. This paper collects questionnaires, surveys students in primary school, junior high school, senior high school and college in China, surveys the data of e-learning's impact on students. After the proposed advantages and disadvantages of the solution and analysis. Finally, it analyzes the feasibility of e-learning in the popularization of education in China.

Keywords: Digital Learning; Future Trends; Case Study; Chinese Students.

1. Introduction

With the development of the Internet era, the use of mobile phones and computers is increasingly relied on by people. According to a statistical report by the China Internet Network Information Center (CNNIC), the internet users' population in China reached 904 million until 2020, with an Internet penetration rate of 64.5 percent. Such Internet popularity also provides the basis for the diversified development of the media. As a result, the use of Internet media for learning has also become an important source of knowledge for contemporary young people. According to statistics, among all Internet users in China, students account for 21.0%, the highest proportion, accounting for. At the same time, due to the impact of the COVID-19, the demand for online education is growing. Until the 2020, China had 342 million online education users, accounting for 34.6 percent of all Internet users.

Digital learning refers to the form of learning that involves the use of electronic media. The information and instructions that are created with modern-day computers and electronics are known as digital information. The form of learning that makes use of digital information is referred to as digital learning. In a nutshell, digital learning refers to the type of learning that involves the use of electronic devices. It is facilitated by technology and gives students control over time, the path of learning, place, or pace. As digital learning platforms become more popular, more industry-leading platforms emerge, thereby enabling effective, engaging, and results-driven learning.

Bilibili is the most typical channel and platform of learning through media. It is most popular online community among young people in China. According to Bilibili 2020 financial results, it had 197 million monthly active users, 1.3 billion daily video views and 5.5 billion monthly interactions. Since 2017, Bilibili has developed a companion learning area called "Study with Me." In 2018, there were 1.46 million hours of live class in the learning area, and 18.27 million users studied on Bilibili. That's twice as many as those who took the national college entrance exam that year. One of the best-known teachers is Luo Xiang, a well-known professor at the China University of Political Science and Law, who lectures on Bilibili. His humorous teaching style and strong expertise not only help students to learn legal knowledge, but also work effectively in promoting legal knowledge to other people. Luo currently has more than 20 million followers on Bilibili.

From 2020, due to COVID-19, Bilibili online education has once again taken advantage of its strength. It has launched the "Without Suspension of study" program in collaboration with prestigious universities in China, such as Tsinghua University and Beijing University. It covers all subjects and disciplines as well as extracurricular courses from primary school to high school. It also became the official online learning platform of Shanghai Municipal Education Commission in 2020. According to incomplete statistics, in 2019, Chinese educational institutions such as Good Future, 51Talk, VIPKID, New Oriental, Homework Gang, Squirrel AI have set their sights on Douyin and Bilibili. These media have thus had substantial influence on learning efficiency of Chinese students.

2. Literature Review

Literature shows that online learning is increasingly being apply in the field of education. Dumford claims that with the proliferation of online learning in higher education, there is a growing need to understand the engagement and benefits for students who only have access to online environments. While there may be some benefits to online learning in terms of engagement, it seems that online learners also have to make some sacrifices to get a participatory educational experience [1]. And Nguyen also claim that there are strong evidence to suggest that online learning is at least as effective as the traditional format, but the evidence is, by no means, conclusive. Online learning is a story that is still being written, and how it progresses will likely depend on those present [2]. Dehe claim that the formation of a community depends on whether the people/its members can energize the culture and construct symbols of dissent and identity. The collision of community and Internet formed the concept of virtual community. Virtual communities are created when people come together to share common beliefs and cultures and continue to develop in the online world. He also used Bilibili as an example of analysis. The active participation of actors in social learning (Bilibili users) is a basic element of study, and the use of social learning methods in study is a significant sign that students pay attention to their own development. The Internet has created this environment for social learning. And this form of Bilibili is a kind of educational field [3]. Patel used a survey to find that incorporating interaction in online courses and maintaining good grades are significantly related to students' ability to learn, especially in courses where there is no teacher communication [4].

Gopal et. al. argued that multiple factors are responsible for student satisfaction and performance in the context of online classes during the period of the COVID-19 pandemic [5]. Likewise, Mr. Brown proposed, the open movement is another movement that is sure to continue to shape the future of online education. This is an important trend. Principles related to open practices include free reuse, open access, free of charge, ease of use, digital/web content, social/community approach, ethical openness, and openness as a productive model [6]. Sun points out that he use of media learning, with its unique openness and sharing, enhances the autonomy of students' moral knowledge and opens up a new front for middle school students to improve their moral quality [7]. Picciano also point out governments at all levels need to develop more public policies so that online learning can take hold in the transition [8].

Tuan shows that traditional teaching mode has positive effect than online teaching mode. The differences were more pronounced among Hispanic students, male students and low-achieving students. The authors fully acknowledge that a possible and most likely significant internal validity threat is the therapeutic proliferation of "live only" students, since they can view online courses using a friend's account, while "online" students are barred from attending live courses. Moreover, external validity threats come from at least two sources: volunteer effects and grade incentives (students who volunteered for the experiment scored half a point higher). Therefore, researchers should be cautious when interpreting the findings of this study or generalizing them to other Settings [9].

Although many scholars have studied the influence of e-learning on students, few authors can comprehensively consider the influencing factors of e-learning on students and the obstacles to the popularization of e-learning in China based on Chinese students of all ages. This study fills the gap by an analysis of key factors that shape the trends of digital learning through a case study of Chinese

students as followed, which could help understand the demand for digital learning among Chinese students, as well as the potential market and future of digital learning in China.

3. Methodology

In the survey, the researcher mainly used questionnaires to collect quantitative data. The questionnaire Star is a small program in WeChat. Based on the WeChat platform, the prepared questionnaire can be easily disseminated to other people through Weibo. The respondents are the students at various ages, which matches the target people the author hope to investigate. This questionnaire lasted for a total of five days, and more than 100 responses were collected, among which only two were invalid. The criteria for invalid questionnaires were that all the answers were the same and the answers showed obvious regularity. The purpose of this questionnaire is to investigate how learning through media affects students' learning efficiency.

4. Results

In this survey, male informants accounted for 60% of the overall survey results, while female users accounted for 40%. Generally speaking, it is relatively balanced and will not have a great impact on the survey results. In terms of age distribution, college users account for the largest proportion of 60 percent, primary school users account for the least proportion of 10 percent, and other middle and high schools account for 20 percent. About 40 percent of the users have more than two years of experience, and 60 percent of the users have less than two years and more than a month of experience.

After that, the author investigated the reasons why users choose to study online (multiple choices are available). Among them, the number of votes affected by COVID was the most, and 80 people chose to study online because of the low cost. Low cost ranked second, with 60 votes citing low price as an important factor in their value of Internet learning. And there were 40 votes for more convenience and interesting, respectively. Then the author investigated the platforms used by users for Internet learning, among which the platforms of Bilibili and extracurricular class respectively accounted for 40% of the total proportion, while Douyin only accounted for 4%. As for the learning platform of extracurricular classes, the author conducted further interviews and surveys to try to understand the reasons for its popularity. Of all the users who use the Internet for learning, 49 percent think it is very helpful, 43 percent think it is a little helpful, and 8 percent think it is just like regular learning.

The researcher also worried about whether Internet learning will affect learning efficiency, so the researcher conducted a survey on this in the questionnaire. Among them, 60 percent of users think there will be a little impact but not serious, accounting for the majority. Another 20 percent of users think it does not affect. And the author conducted a further survey on the reasons for impression efficiency (multiple choices available), among which attention was ranked the highest, with more than 70 votes per month. Secondly, people believed that the influence of watching electronic devices for a long time on eyes was also an important reason for learning efficiency. At the same time, there were 64 votes for failure to communicate with teacher. Finally, the author conducted a survey on the support of Internet learning, and 37% of users said they supported it, while the same percentage said they were still considering it. Those who disapprove are in the minority, at 26 percent.

5. Discussion

As if the online learning will become future trends, interestingly the viewpoints of the informants are divided. 40% of informants support the online learning, 31% don't support, 28% uncertain. Only one third are for online learning. Evidently if the current learning mode including the platform, content and environment don't change, online learning won't become the future trends. Unless changes will be made the key factors that impact upon students learning.

Student mostly learn from school-based learning platform, accounting for 66%. Second to it, is those provided by after school tutoring agencies. Only a small proportion (Bilibili 14%, Douyin 4%) accounts for resources that students use for online learning. There is still great potentiality for the development of learning resources developed by the community and private sector, as long as they could fit into students' needs and interests. Combined with the advantage of their large number of users and attraction to young people. The huge market will bring a great opportunity with benefit which not only for private business but also students to promote the development of learning platform. To mainstream the digital learning, negative effects should be decreased. The study finds out the following three factors

Discomfort of eyes and students learning habit, watching screens for a long time can cause eye discomfort and even affect vision, which is a concern for many parents in China. At the same time, when studying online, most students need to stay in their rooms for a long time. Studying in a small and confined environment for such a long time may have bad effects on students' mental and physical health. On the contrary, the wide classroom and communication between classmates can be good for psychological stress, and there is no need to face the small screen for a long time which effectively protect students eyes. But it is not insoluble. One of the characteristics of e-learning is that it allows students to study independently, and students can adjust at any time according to their own learning, physical and psychological conditions. If students have physical discomfort, such as eyes, in the process of learning, they can pause the online course and take a rest. Students can go outside during their break to exercise, have a meal, or take a nap. The length of the break can be determined by the students themselves. This kind of free break is much more flexible than regular breaks in school, this will effectively relieve students' fatigue when they study online.

Lack of response/interaction with teachers, therefore there is a need for teacher training in this aspect; Different from the traditional face-to-face learning, students' questions in the learning process cannot be answered in time, which may seriously hinder the effectiveness of students' learning. Take students watching instructions videos as an example, unlike the class or live class in which their questions can be answered instantly, the students who watch the instructions video on media might not receive the feedback as they need. However, there are some effective solutions. Comments section or chat box under the video provide the students with a great place to discuss their opinions and answer the questions from each other. Not only can the students help each other during study, but also develop their confidence and spirit of helping others. These ways are similar to the group discussion or the a mutual support group which often appear in traditional classes. Another solution has emerged with the development of AI technology. In China, search software like "homework help" is familiar to almost every student. The students just need to take a picture of the math or other subject's question with the phone, and the AI system will help people search and analyze this question and find the explanation and answer of it. This kind of AI teacher is also constantly evolving and improving, and is integrated with online learning platforms to help students understand the knowledge taught in videos and after-class exercises.

Distract from the Internet, setup of online learning environment; Distracting students is also a big worry for many Chinese parents and teachers. abundant functions in electronic devices and various information in media platform have become the interference in the learning process of students, which greatly affects the learning efficiency. For example, Bilibili, when the students open the software, they will see all kinds of videos, science and technology, funny, games, food and so on. Especially students whose self-control ability is not mature can hardly resist these temptations. How to solve this problem is what software companies need to focus on now. Some apps, such as Douyin, have the teen mode, which means that when this function is turned on, the software will ensure that all the information pushed is suitable for teenagers. Software companies can build on this base to create similar models for learning. After students open this study mode, they can only see the content related to study in the software during the learning process. This will be extremely effective in helping students reduce the chance of distraction.\

In terms of the cost, lower cost is an important point that students are concerned about. Students can obtain learning materials free of charge by using the online learning platform. On the contrary, if the students choose the traditional learning mode, ordinary extracurricular agencies need to spend a lot of money. Take XDF, the largest educational agency in China, as an example, a tutoring class that usually lasts for two weeks costs 5,000 RMB, and even a one-on-one class costs as much as 2,000 RMB, while a computer required for an online class cost as little as 5,000 RMB. In terms of the time, Today's China is in the era of fast pace, how to use time efficiently has become the thing that the Chinese people pay attention to. Chinese students, in particular, are faced with many exams and the pressure of study, and their time is becoming more and more precious. In traditional offline courses, students need to spend a lot of time on the way, even more than an hour. However, if students choose to study online, they only need to spend a few minutes to turn on the computer, which saves a lot of time. This extra time can be used to review and connect, or to relax. However, study shows most of these are provided on a passive basis rather than proactively integrated into the everyday activities of students and faculty [10].

6. Conclusion

As long as making in-depth, systematic, and proactive changes in above aspects, for example enhancing positive factors such as leveraging the advantages of time and cost, and mitigating negative effects through good learning habits and effective interaction with teachers, and reducing distraction, meanwhile utilize the resources and support of public and private sectors, digital learning can become the future trends, bring Chinese education into a new era, provide Chinese students with the opportunities of quality education and learning experience with low cost.

References

- [1] A. D. Dumford, A. L. Miller, Online learning in higher education: exploring advantages and disadvantages for engagement, CrossMark, 2018.
- [2] A. G. Picciano, J. Seaman, I. Elaine Allen, EDUCATIONAL TRANSFORMATION THROUGH ONLINE LEARNING: TO BE OR NOT TO BE, Journal of Asynchronous Learning Networks, 2010.
- [3] Dee Patel, Online learning's impact on student performance, 2021. 6. 25, retrieved 2022. 8.18 from <https://penntoday.upenn.edu/news/online-learnings-impact-student-performance>
- [4] D. Man, Research on the Influence of platform media on College students' Online learning motivation, Full Text Database of Outstanding Master's Theses in China, 2021.
- [5] D. Xu, S. S. Jaggars, The impact of online learning on students' course outcomes: Evidence from a large community and technical college system, Economics of Education Review, 2013.
- [6] M. Brown, E. Costello, E. Tang, J. H. Xiao, Five Trends Affecting Elective Learning: Possible Future Developments from a Multi-Focus Perspective, Distance Education in China, 2022.
- [7] R. Gopal, V. Singh, A. Aggarwal, Impact of online classes on the satisfaction and performance of students during the pandemic period of COVID 19, Education and Information Technologies, 2021.
- [8] T. Nguyen, The Effectiveness of Online Learning: Beyond No Significant Difference and Future Horizons, ResearchGate, 2015.
- [9] Z. Q. Sun, How do Chinese students learn independently with the help of new media, Liaoning education, 2016.
- [10] P. Zhu, How to cultivate students' good behavior habits, Yun Nan Education, 2022.