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A Research on Post-Covid-19 E-learning in Colleges Education:

-- Taking China as an Example

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Abstract: E-learning is learning through digital materials. It is currently improving rapidly due to its relation with high technologies. The paper researches the difficulties in college E-learning and the solutions to them. The difficulties are unstable internet, including slow download velocity, lack of high-quality online materials, and scarcity of students' motivation and plagiarism from the previous difficulty. The paper provides the solutions. It aims to help all students in their E-learning process and develop E-learning for the possible future epidemic.

Keywords: E-learning; China; Distance Learning; Post-Covid-19.

1. Introduction:

Education has been disrupted by Covid-19 and quarantine. During Covid, education has developed differently to adapt learning online. Distance learning is a type of E-learning, including recorded videos, slide shows, online lectures, interactive games, and websites. E-learning is learning through digital materials. There is a multitude of E-learning materials on the internet, such as Quizlet, Khan Academy, Stanford Online. Online high schools provide high school lessons online. In China, there are WeChat, Tencent Meeting, Zoom, and Rain Classroom. The format of the classes can vary from lectures to YouTube videos. Electronic devices are required for E-learning. Phones, personal computers, and iPads are suitable for most E-learning. E-learning is currently improving rapidly because it's bonded with high technologies. "it offers students unique ways to interact with experienced teachers and professors" [1]. E-learning grant easy access to high quality knowledge without physical interruption. Students also have positive views on E-learning [1]. E-learning can be individually designed for every student and teacher because of its flexibility. A learning pathway can be designed for every student taking E-learning [2]. This paper aims to explore difficulties in college E-learning and possible solutions.

2. Findings:

2.1. Difficulties in College E-learning

The biggest difficulty with E-learning is internet problem. "About 64% of teachers and 65.2% of students stated that low internet speed and internet disconnection are the big disadvantages of e-learning" [2]. E-learning is mainly internet-based learning method. Internet is the first requirement to attend online lectures and other forms of E-learning. The average download velocity of fixed bandwidth in Chinese cities are mostly close besides Urumqi, Lhasa, and Xining. The velocity of them are 51.32 Mbit/s, 49.29 Mbit/s, and 58.72 Mbit/s [3]. The mean of recorded cities' is 63.29 Mbit/s [3]. The three cities' download velocities are smaller and can result in regions' imbalanced internet speed on E-learning. "West or rural areas do not tend to have stable network connections" [4]. The students and teachers in low internet speed areas have no solutions but to endure the low internet speed and low quality of online learning.

College level E-learning demands high-quality teaching materials. However, online teaching materials tend to have low-quality because education resources aren't completely transferred to digital version. There are wide range of academic materials only having the physical version. The teaching materials are hard to acquire online. Only 22 channels and 2,700 medical courses are listed on the recommendation from National Center for Health Professions Education Development [4]. 2,700 is not enough for students since the courses contain less information than a traditional course and more traditional courses can be found in the nation. The limited number of high-quality resources can't gratify college level learning. Teachers might also have trouble sharing the high-quality materials since many of them aren't free nor provided by institutions. Most academic papers and journals can only be accessed through institution or purchasing. Inexperienced teachers aren't familiar with the technologies and other requirements of distance learning [2]. They have a high possibility to waste time when confused by technologies, such unexpected accidents can disrupt the process of learning and syllabus of the lectures. There is no obvious solution to it because only experience can help teachers to minimizes technical problems. Another problem in distance learning is that having real world laboratories or surveys within campus is very rare because most students online aren't on campus. Many practical activities cannot be done due to the absence of campus and other resources. Students can fulfill all required materials for the practical activities, but not presenting it to the teachers correctly makes it more difficult to complete them.

Online learning demands self-control. There is a scarcity of monitoring students in E-learning. Plagiarism can be implemented easily by utilizing other people, searching answers online, asking ChatGPT, and etc. Students aren't monitored by teachers and have a multitude of methods to cheat. The possibility increases as students spend more time on distance learning. Self-learning is difficult to achieve especially without pressure from peers and teachers. Students may not complete assigned homework because they don't feel

like working at home. Distractions in students' life can lead to lower effectiveness of E-learning. Because students aren't on campus, distractions cannot be fully eliminated, and the quality of students' work shall decline. Students have to be highly self-disciplined to finish online learning effectively.

3. Solutions

Internet problems caused by the bandwidth in a region is highly relevant to the internet providers. The internet providers in the region determines the bandwidth and the download velocity. Students may find another internet provider which has a higher bandwidth and download velocity. If students cannot find an internet provider with high bandwidth, then they are recommended to use 5G if it's possible. 5G has a bandwidth of 10 Gbps while 4G's is only 100 Mbps [5]. 5G bandwidth is 102.4 times greater than 4G under ideal conditions. China has been expanding the application of 5G in many major cities. 5G also allows faster speed under the same bandwidth [5]. Students can access 5G and have a lower possibility to face unstable internet and slow download velocity.

Online teaching materials are difficult to find. Teachers have two solutions. They can either get the resource in physical form to transform it into digital form. The other method is to collect and summarize teaching materials from multiple education websites and combine with traditional materials if necessary. Teachers should only use authoritative websites and extract what they need from digital material. The digital materials should include information about author, institution, address. Teachers shouldn't be limited only to online teaching materials since it's difficult to acquire. When teachers have trouble access the academic material, they can contact their institution. Material can be purchased by students and teachers otherwise; teachers have to announce students beforehand. There are apps to capture and convert physical documents to digital ones. It can be done by taking pictures of the physical material, so teachers shouldn't have problems transforming materials. If the materials are too many to be converted, teachers many selectively convert the materials and show students how to get the full version of the materials. [6] Teachers have chosen recorded videos due to their internet problem [6]. Teachers may reduce the courses that are live and increase the number of lessons that has little requirement for teacher's internet speed. For example, videos, reading, digital quiz require little internet speed for teachers because students can do it on their own, and teachers can answer students' answer through email or other forms of texts that require little internet speed. For practical activities, "'Combined' is the most popular and effective" [6]. Teachers should retain the activities since the activities make E-learning mix with both E-learning and traditional learning. To ensure students have done the activities correctly, teachers can request photos of their activities daily and descriptions. The daily tract of progress can reduce the chance of plagiarism and help students in time. Students can be announced to pay for their lab instruments beforehand. Teachers can purchase the instruments and send to students if the cost of practical activities are covered.

Plagiarism can be reduced when enthusiasm rises. To make students more enthusiastic during their E-learning, teachers need to explain the purpose of their learning, the meaning of their learning, the interesting facts of the learning [7]. However, enthusiasm isn't enough to prevent plagiarism. There has to be monitoring and rules. Teachers can mandate students to work on a shared online document that teachers have access to its history. Teachers monitor how and when students put in their information, either copied and pasted or typed in. Google has originality test for online documents, including google docs. There are apps and websites for teachers to detect plagiarism. Teachers can also put in efforts in making original questions that has few answers online. Students have a smaller chance to find the answers of original questions online. Teachers can also require students to share their screen and camera when working on in-class assignments. Long time E-learning can be difficult for students to attend. Teachers can recommend tips for self-control in their self-introduction. The tips can repeat in class assignment and they will motivate students to develop good self-control.

4. Conclusion

The paper discusses the difficulties of E-learning and solutions. The challenges of E-learning have internet, materials, plagiarism, and lack of enthusiasm. The solutions are switching internet providers or switching to 5G, mixing both physical and digital materials, utilizing tools to detect plagiarism, and encouraging students to be more enthusiastic. The paper can help improve E-learning in China and worldwide post Covid-19. The development of E-learning can prepare for future epidemics. The paper can benefit all student groups considering taking E-learning.

References

[1] Osadcha, K., Osadchyi, V., & Spirin, O. (2021). Current state and development trends of e-learning in China. Information Technologies and Learning Tools, 85(5), 208-227.

[2] Liu, Y. (2023). Matches and mismatches between university teachers' and students' perceptions of E-learning: A qualitative study in China. Heliyon.

[3] Broadband Development Alliance, Report of Chinese Broadband Download Speed, 2021.

[4] Su, B., Zhang, T., Yan, L., Huang, C., Cheng, X., Cai, C., & Cui, D. (2021). Online medical teaching in China during the COVID-19 pandemic: tools, modalities, and challenges. Frontiers in Public Health, 9, 797694.

[5] Akyildiz IF, Nie S, Lin SC, Chandrasekaran M (2014) 5G roadmap: 10 key enabling technologies. Comput Netw 106:17–48.

[6] Alimire Adili (2020), An analysis on the application of online education based on the concept of "PBL". Education Research, 3(10), 2630-4686.

[7] Jiang, M (2021), An analysis on teaching strategies for history of Chinese literature criticism – How to mobilize student's enthusiasm. Journal of Mudanjiang College of Education, 9, 56-58.