International Journal of Research Publication and Reviews

Smart Education Technologies: Vehicle for Quality Education -Taking the Zoom as an Example

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Abstract

Affected by COVID-19, schools have changed the teaching mode from offline to online to maintain normal operation. Online teaching is an unconventional means adopted in a special period, which is different from offline daily teaching. The interaction and communication between students become less, which leads to poor enthusiasm of students and lax learning. Some students have poor self-discipline, and teachers cannot effectively supervise. Online learning cannot timely adjust teaching strategies according to students' status, and the management of the teaching process is difficult. By collecting the process information and feedback of teachers and students using smart education technologies with interpretative phenomenological analysis （IPA）method, this paper analyzed the impact of online teaching on teachers and students during the epidemic period and evaluated the effect of smart education technologies .Using smart education technologies, it can effectively realize learning situation analysis, on-demand generation of lesson plans, personalized question answering, class learning situation management, teacher-student interaction behavior analysis, personalized paper issuance, intelligent scoring, test situation analysis, etc. Smart education technologies realize students' personalized learning, promote students' independent development, individualized development, and sustainable development, truly realize effective teaching, and quality education.

Key words: Quality education, Smart technology, COVID-19, Online teaching, IPA

1. Introduction

Quality education, as the 4th Sustainable Development Goal United Nations, is fundamental to creating a peaceful and prosperous world. Education gives people the knowledge and skills they need to stay healthy, get jobs, and foster tolerance. The COVID-19 outbreak, however, has caused a global education crisis. Most education systems in the world have been severely affected by education disruptions and have faced unprecedented challenges. School closures brought on by the pandemic have had devastating consequences for children's learning and well-being. SDGs. (2020) China is no exception with so many schools closed and how to ensure that education is accessible and continuous for children has been posed challenge to China and the world. Tian. (2020)

With the development of smart technology, like artificial intelligence, big data, 5G, blockchain, edge computing, and other emerging intelligent technologies provide technical support for creating a new intelligent teaching environment and promoting the reform of teaching methods. Liu, B. Q. (2020). There is no doubt that smart technologies take the overwhelming position to address the issue to guarantee quality education during pandemic. For instance, during the lockdown, a large quantity of schools organized online courses for students by Zoom meeting platform. According to Vena, D. (2020) Zoom is a technology company founded in Delaware in 2011 and headquartered in San Jose, California, USA. Its founder is Yuan Zheng, a Chinese American. Zoom's core business is teleconferencing software service based on cloud computing, providing computer software and mobile applications for video telephony, instant messaging, and business telephony systems. Zoom's business model is simple, and users can use it free of charge except for initiating meetings and using extra functions. The time limit of Zoom meeting is 40 minutes. Zoom was widely used in homework, distance education and social intercourse as a free and popular software in the entire world. Zhou, B. (2020).

Therefore, this paper aimed to determine how smart technology, as vehicle, affects quality education. Researching on how smart technology affects quality education based on the perception of teachers and students is the statement of the problem.

1.1   What is the teacher's attitude towards the smart technology applied in teaching process?

2.1   What is the view that the students hold for the smart technology affects their learning process?

2. Methods

Interpretative Phenomenological Analysis (IPA) was adopted as the method to collect and analyze the data by means of a questionnaire and interview. IPA aims to explore and understand in detail about the person's experience of a particular phenomenon pointed out that IPA helps in understanding the participant's perception and describing it rather than generalizing it based on preexisting theories and concepts. Joshi, A., Vinay, M., & Bhaskar, P.

(2020). To evaluate how the smart technology affects the quality education of teachers and student, 30 students and 15 teachers were interviewed. Based on the IPA method, the questionnaire and interview content followed by:

2.1 Questionnaire

1. What do you think the capacity for learning/teaching by zoom meeting?

2. How to describe the after-class assignments distributed/designing using zoom?

3. What is the convenience that the zoom meeting provides for learning/teaching?

4. What improvements should be done by school to make full use of zoom meeting?

2.1 Face to face interview

1. Make a brief description of online learning/teaching during the pandemic

2. What is your expectation for a better learning/teaching experience in the future by using the smart technologies?

The small size of the dataset meant that it was not possible to evaluate the whole situation of how the smart technology affect quality education, but it still may reflect some certain problems and provide the reference for school's development. The data collected were discussed in the results part below.

3. Discussions

Several studies already have shown the smart technology affects the teaching methods and curriculum setting from the perspective of teachers. Joshi, A., Vinay, M., & Bhaskar, P. (2020). This study set out with the aim of assessing the importance of how smart technology affects quality education in teachers and students. Referring to data collected through the questionnaire and interview above, it can be indicated by the following tables.

3.1 Table 1: Teachers and students' feedbacks on the questionnaire

Q1	Q2	Q3	Q4
High demand for Internet	Time-saving	No space and time limitations	ICT Trainings for teachers
Strong needs for ICT knowledge	Convenient communications	Cost effective	Cooperations between different majors
Quiet environment	Insufficient facilities	High engagement	Innovation on module design

3.2 Interview results on Q1

❖ Students major in mathematics: *I think, during the pandemic, that online teaching especially by zoom is a double-edged sword. It did save a lot of time spending on the road or other social involvements, but it affected the daily communications with teacher effectively, because mathematics is a such scientific and rigorous subject, so it needs the face-to-face guide of teachers. Besides, it also needs the high concentration of each lesson in case missing some key points, like the formula.*

❖ Students major in music: *Online learning is very helpful because sometimes, people don't have the confidence standing up in front of others to sing a song, but by zoom, we can easily to show our voice ignoring the teachers and classmates. But it isolated us with our teachers and classmates, it would affect our social ability.*

❖ Students major in English: *Personally speaking, I can make use of different online materials to exercise my English and learn more about the history and concerning knowledge that I would like to know by smart technology. But some of our students who live in the remote areas, they have the difficulty to access to the internet and lack of PC or mobile phone, to some degree, it stopped the learning efficiency of them.*

❖ Teachers: *During the pandemic, it requires us to use different smart technology, like the zoom, voov or other platform for module design with a good knowledge of ICT. Meanwhile, it is hard to guarantee the quiet environment at home when teaching as there are kids that needed to be looked after very carefully. Furthermore, I do think that physical paperwork is the best way to check their learning results and, in this way, students would have certain pressure and submit on time, otherwise they would ignore or forget to finish.*

3.3 Interview results on Q2

❖ Increase the interactive communication app input, like the already read function to check whether the teacher see the message or not; strengthen the scientific app research and development to guarantee the learning result in pandemic

❖ Adding more functions into the online learning platform, like the automatic punctuality check

- ❖ Strengthen the smart technology infrastructure construction, like the internet support in remote areas and the devices to access

- ❖ Schools needs to invest on the ICT trainings for teachers and create the academic atmosphere among teacher to exchange their thoughts and achievements.

4. Conclusion

The study has identified the how the smart technology affects the quality education in perspectives of teachers and students. Overall, just like what the paper mentioned above, technology is a double-edged sword, so how to make beneficial use of it come into the point. The convenience that the technology provide cannot be ignored, but it is crucial that using the technology to design the module and personalize the learning needs for each student. If so, quality education would come into being soon.

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