

# Different Levels of Access to Digital Technology Have Further Exacerbated Inequalities in Education

Hongjin Song

School of London, University College London, London, UK

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**Abstract:** The application of digital technology has brought tremendous changes in the field of education. On one hand, digital technology plays an important role in improving the sharing of educational resources and teaching efficiency. On the other hand, due to economic factors, some families and schools cannot afford digital technology. This article, drawing on literature and Chinese cases, critically analyse the claim that "disparities in digital technology access exacerbate educational inequality", identifying economic conditions, parental attitudes, teachers' digital skills, and children's interests as the core influencing factors. It analyzes how these factors lead to inequality at the educational starting point, process, and outcome, and offers suggestions for responses from the government, parents, schools, and software developers.

**Keywords:** Digital technology, inequalities, education.

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## 1. Introduction

Nowadays, the issue of the digital divide has attracted much attention (Livingstone & Helsper, 2007) [1]. In other words, digital technology might promote educational equity to a certain degree, however, there are different levels of access to digital technology. This is a significant factor contributing to the current educational inequality. Therefore, this essay will critically discuss and evaluate some factors that can lead to the disparity of access to digital technology and a greater education gap. It also includes examples in China where I witnessed how these factors contribute to the education gap. Firstly, it discusses the economic factors, secondly, it explores parents' attitude factors, subsequently, analyzes teachers' digital skills factors, and finally, discusses children's interests.

## 2. Economy Condition

The condition of the economy is an important factor leading to different levels of access to digital technology, which can increase the gap in the chance of access to digital education. The influence of economic conditions is particularly prominent in families and schools. This is evidenced by research, for example, Livingstone and Helsper (2007) showed that there were more chances for middle-class children to access digital education, and the possibility of internet access was higher for wealthy families than for poor families [1]. Similarly, Chen (2023) claimed that due to the influence of social and economic status, students from poor families came across significant obstacles in accessing high quality educational resources [2]. There is a similar phenomenon in China as well. A rich family can buy advanced digital technology, such as laptops, phones, and translation pens for their children, and a poor family cannot afford these in China. The school in the city has a lot of smart teaching equipment, such as an interactive whiteboard, a classroom behavior analysis camera and an AI teaching assistant robot.

Therefore, children from rich families and urban schools who can afford the cost of internet access and can purchase digital devices can adapt to digital technology and obtain

learning resources. However, the children from poor families and rural schools do not have much money to buy advanced digital devices, thus it is difficult for them to access digital education. Besides, knowledge payment has also increased their economic pressure, resulting in few opportunities to access high quality learning resources. The form of unfair access to resources is one modality of educational inequality. This condition will exacerbate education starting inequality over time. Consequently, the government could collaborate with educational software developers to ensure that students from all economic backgrounds have a chance to gain high quality resources.

## 3. Parents' Attitudes

Parents' attitudes towards digital technology also affect children's opportunities to access and understand digital technology. The attitudes of parents mainly include either supporting their children's use of digital technologies for learning or not supporting it. The reason why some parents do not support is explained by research, for example Livingstone and Helsper (2007) claimed that younger children spent more time playing games online than studying online, older children tended to use the internet to complete their homework and access exam preparation websites [1]. Following that, they played games and listened to music online. Therefore, parents may use strict restrictions to urge their children to focus on their studies. Parents who support their children using the internet might believe that they can guide their children to use the internet in a proper way for learning.

Meanwhile, in China, for instance parents who do not have a good understanding of digital technology often have deeply traditional beliefs, they summarize digital technology as the network and think that children's excessive use of digital technologies will lead to addiction to the internet, which is detrimental to their academic development. Therefore, children living in this situation may be led away from engaging with digital technology under compulsion, and their digital literacy cannot be improved. On the contrary, parents who have a thorough understanding and mastery of digital technology tend to support their children's access to digital technologies. This can help children have higher levels of

digital access to grasp and use digital technology properly and that can cultivate their skills in mastering digital technology. Hence, it takes a long time to change parents' minds, the differences in parental attitudes have led to disparities in digital access, which can generate a gradual exacerbation of educational inequality. To address this issue, social organization could broadcast and guide parents to use digital technology to cultivate their children.

#### 4. Teachers' Digital Skills

The teachers' digital skills also have an impact on the gap in students' access to digital technologies. Because teachers with high digital literacy may assist students in using digital devices, while those with low digital literacy do not pay more attention to cultivating students' ability to use digital technologies. Research also highlights this, for example Lin (2023) found professional information technology teachers had a skill advantage over other teachers and they had higher digital literacy [3]. Therefore, other college teachers may spend more time learning new software and integrating it into teaching or teachers with low digital literacy are more likely to resist new technologies. This phenomenon will give rise to the gap in students' digital literacy unconsciously.

This is similar to my experience in China, rural and remote area schools lack digital facilities and insufficient funds, which leads to teachers having few chances to receive systematic training in digital technology. They only use a simple projector and PowerPoint to teach students, which results in the application of digital technology becoming merely a mechanical tool. Instead, urban schools are equipped with advanced digital devices. It is convenient for students to learn through a combination of online and offline methods. They can also participate in virtual experiment projects to consolidate their knowledge. Apart from that, the training for teachers often takes place in cities and urban teachers have more opportunities for digital literacy training, which enables them to adapt to digital teaching models earlier than rural teachers. These disparities will also lead to educational inequality. To solve this problem, schools should pay more attention to providing digital equipment and supervising teachers using it.

#### 5. Children's Interest

The last factor is children's interest, which is a crucial and direct factor affecting the level of access to digital technology. When it comes to things that interest children, they will be very enthusiastic and persist in doing them. However, for things that they are not interested in or dislike, they will have resistance and find it difficult to stick to them. This is proven by research, for instance Livingstone and Helsper (2007) argued that among 16–17-year-old teenagers, 24% voluntarily quit using the internet, and among 18–19-year-old, the

proportion was 32% [1]. This clearly showed that the decline in interest was an important driving factor affecting the level of digital access.

Similarly, in China, senior students are influenced by the pressure of further education and social expectations and view using digital technology as a factor hindering their development, then they avoid learning online. In contrast, primary school students are more interested in the Internet, not only because the teachers require them to complete their homework online, but also because there are many interesting games attract them. Interest is the biggest power to encourage people to take action. Hence, interest decides the different levels of access to digital technology, leading to age inequality. There is an efficient method by which software developers could integrate knowledge with technology closely, so that senior students believe they can balance academic studies online.

#### 6. Conclusion

In conclusion, this essay has argued that the disparity of access to digital technology has exacerbated inequalities in education based on literature and the Chinese example, which I have experienced. The condition of the economy, parents' attitude to digital technology, teachers' digital skills and children's interests are the main reasons that impact the students' frequency of using digital technology. Therefore, the imbalance of these factors contributes to the inequality in the education start, the education process and the education outcome. This phenomenon should draw the attention of the government, parents and schools. For the government, they should ensure distributing funds and resources fairly, parents should accept digital technology firstly then guide children to use it correctly, schools should encourage teachers to participate in digital technology training and apply it in teaching, at the same time schools also should strengthen the construction of digital teaching equipment to enhance students' interest in learning through digital technology.

#### References

- [1] Livingstone, S., & Helsper, E. (2007). Gradations in digital inclusion: Children, young people and the digital divide. *New Media & Society*, 9(4), 671–696. <https://doi.org/10.1177/1461444807080335>
- [2] Chen, M. (2023). Digital education as a tool for achieving education equity: A systematic literature review of the United Kingdom and China. *The Education Review, USA*, 7(12), 1832–1843. <https://doi.org/10.26855/er.2023.12.001>
- [3] Lin, W. Q. (2023, May 19-21). Technology enhanced personalised learning implementation with technical skill training in vocational education and training [Conference presentation]. 6th World Conference on Future of Education, Milan, Italy.