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# A Hong Kong's Local Qualitative View about the Philosophy of Educational Technology

Lam Kai Shun Carson*

*Department of Mathematics, University of Hong Kong, Pokfulam, Hong Kong*

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## ABSTRACT

There are always gaps between students' use of ICT in learning and entertainment. This is so-called "digital capital" and could have an effect on academic achievement in schools. In addition to socioeconomic backgrounds, there are other reasons for the phenomenon. These are cultural (technological) capital, resources, and the mediation philosophy of ICT usage of parents. There are always differences in these factors between lower-class and middle-class parents. Thus, in order to bridge the divide, we must educate them in both ICT skills and mediation theories. This will result in a change of beliefs among parents concerning how they mediate with their children regarding the issues of using digital devices. Hence, with this author's proposed philosophy of educational technology, we can encourage "positive and quality use of ICT" among students and consequently provide a good influence on academic performance. Practically, what this author means in the thesis is the management of children's information technology usage in education. There will be a great difference for our children to use ICT in learning but NOT just in their entertainment. Hence, all of my educational thesis are focusing in how we should manage children and family conflicts in the fields of ICT usage, to educate them in some higher tasted way of ICT usage such as cultural activities in library. On the other hand, there are defects or dangers of the management if it is used in the controlling of human thinking, etc.

**Key words:** Cultural activities, ICT, local qualitative view, management, philosophy

## INTRODUCTION

Just a few years ago, it was unpopular to use information and communication technology among students. At present, they all participate in different forms of digital activities, such as chatting among friends or playing Internet-based games. According to Poore,[1] though students own all the latest electronic gadgets and devices, they are still regarded as being left behind in terms of "digital capital" products. Through investigating students' daily usage of ICT and the guidance they receive from their parents, we can determine their behavior and style of using ICT after school. In fact, by applying Bourdieu's cultural capital, we can explain the observed phenomena and thus show the effect of digital technology on our students' educational outcomes.

**Address for correspondence:**
Lam Kai Shun Carson
E-mail: h9361977@connect.hku.hk

## LITERATURE REVIEW

### What is cultural capital?

The concept of cultural capital was first proposed by French sociologist Pierre Bourdieu and was used to explain French children's educational outcomes in the 1960's. Embodied cultural capital can be obtained through an embodiment process.[2] The process includes labor assimilation and inculcation, which results an investment return.[3] Next, when a legally assured and acknowledged value of certification about a particular cultural competence is given, this may refer to institutional culture.[3] For example the Hong Kong Diploma of Secondary Education can be viewed as a form of institutional culture as it is the basic entrance requirement for higher education. Finally, cultural capital has been objectified, focusing on media and material objects such as digital tools.[3] Possession of digital consumption symbolically assumes embodied cultural capital.[3]

### Concept of bourdieu's habitus and social reproduction

In society, the different social classes result from the differential socialization of individuals.[4] This refers to Bourdieu's concept of social reproduction. Through the process of socialization, children develop a sense of what is natural or comfortable. This is Bourdieu's concept of "habitus."

Bourdieu (1984) suggested that both material and non-material resources can be transferred by the parents to their offspring through the possession of capital in three forms: cultural, social, and economic. In 2003, Lareau found that both middle- and upper-class parents are likely to participate in various age-specific activities (i.e., music lessons, theater, and sports), which can be considered as instruments to enhance children's cultural capital and skills. Lower-class parents assume children's free time should not try to develop "talents.[5]"

Although we can analyze parents' behavior and their influence on their children's achievement outcomes, there are a few critics of Bourdieu's theory and its application to the educational system.

### Critics of bourdieu's cultural capital

To begin with, we shall define what the common meaning of the cultural capital is. From the perspective of economic concepts, Bourdieu outlines the complex educational system in France.[6] With a further step, the above concept gradually develops other related ideas.

Bourdieu[7] believed that the transmission of cultural capital is slower. Known as the process of socialization and security, it is irreversible, unlike the transmission of economic capital – hence, habitus. When cultural capital is transmitted in its embodied expression, the major part of habitus is formed. Bourdieu emphasizes in such case for children who acquired such kind of habitus are indeed those who are underwritten in our present education. There is little room for "re-socialization." However, it may happen through the agency of the educational system. Moreover, what schools teach and how it is taught is determined by dominant class[1] interests. Indeed, school is viewed as cultural capital. It is best to ensure the reproduction overtime of the prevailing distribution of such capital unequally, and it is also true for the privilege and social power.[8] This is what is called "symbolic violence.[9]"

Contrary to Bourdieu's social reproduction theory, new educational opportunities for children of all social backgrounds have been created, including the children of dominant classes. Poorer children can have more chances of attaining higher education. However, the importance and actual extent, with respect to class backgrounds, is still a hotly debated issue.[9]

### Relation between cultural capital and education

In Bourdieu's view, what is the role of education? Indeed, he tries to convert those hierarchies from a social perspective into an academic one.[10] A school's or college's credentials are based on merit and are simply rewards for displaying a particular cultural capital.[10]

By analyzing the data collected from the Survey of Participation in the Arts, Aschaffenburg, and Mass,[11] it can be seen that the cultural capital of one's parents and cultural participation outside school relates to success in education, but that these effects diminish over time.[12] This is the source of educational inequality that can explain the students' digital divide.

In this author's opinion, while cultural capital originated in France, there are big differences between Eastern and Western cultures. In Hong Kong, families are more conservative. Confucian values are evident in most families and are transmitted through the expectations and behavior of the parents.[13] Although not all of Bourdieu's views of can be applied locally, this author believes his theory of education inequality in the digital divide due to cultural capital is valid. As such, one suggests that there should be more research done to investigate the situation in Chinese society. In doing so, it can be determined how Chinese family traditions and ways of daily life either support or contradict Bourdieu's philosophy and conclude how cultural capital theory should be extended to our Hong Kong's situation.

## THEORETICAL BACKGROUND

What are the factors affecting students' school performance and the use of ICT outside of school hours? Previous studies[14] have focused on the social and family backgrounds of the students, which affects their ICT use outside school. However, recent research explains how

the parents' involvement, family structure, educational resources in the home, as well as the family's cultural and social capital, all have effects on children's educational achievements.[15]

There are several studies which have proposed that educational re-sources in the home can be considered a form of cultural capital measurement and are related to educational success. These include reading materials such as books and newspapers. These days, however, we might also need to consider technological additions, such as a home computer used to participate in computer-related activities (as stated in PISA).

Certainly, accessing the Internet at home is now as significant as the number of children's books.[16] Thus, some authorities have suggested "technological capital" – which is treated as a sub-section of cultural, economic, and social capital in the digital age.[17]

Emmison and Frow[18] tried to determine which skills and competencies required for ICT use could be considered cultural capital. They assumed that if there is early exposure among families in the use of scientific instruments and machines, then there will be an advantage for their children to own some traditional forms of competence in fine art.[18]

In 2003, PISA[19] discovered a correlation in most countries be- tween academic attainment and ICT home use. As such, Bourdieu's original theorem cannot explain the relationship between low home access of students and associated disadvantaged backgrounds. There are differences in usage depending on students' cultural and social capital outside school. In fact, studies on cultural consumption posited that women who have high socioeconomic resources are more likely to engage in "highbrow" cultural practices.[20] Poorer parents, who spend excessive time watching television, for example, are associated with children's leisure socialization activities, which can lead to negative impacts on their school outcomes and cultural capital.[21] Therefore, it is interesting to study the behavior of lower-class parents at home:

1. How do lower-class parents use digital technologies and do they acquire the necessary technological capital?
2. How will this kind of capital affect children's use of digital technologies at home and will it have an influence on their school performance?
3. What are parents' attitudes towards children's usage and do they have any mediation philosophy about the use of such digital technologies?

## Critics of ICT use can improve learning outcomes

Critics of ICT use can in fact improve learning outcomes. First of all, it is hard to define which types of technology are suitable.[22] Furthermore, longitudinal studies over time are required to determine the benefits. Indeed, the life cycle of soft skills for different groups of people at different stages is unknown.[23] Therefore, based on the above results, it is difficult to assess the contributions that the use of technologies made to educational outcomes.

In this author's opinion, ICT-aided learning can be considered a form of cultural capital and has effects on students' learning outcomes. Different social classes mean different ICT access and attitudes among individuals and may transmit into advantages in education for the privileged.[24] Certainly, Bourdieu's original theory best fits the arts and not engineering or science. Now is the digital age and the use of ICT-aided learning. As such, this author agrees that there should be an extension to Bourdieu's philosophy according to the qualitative and quantitative research, as well as literature review. Subsequently, the effects on educational outcomes can be determined.

Qualitative research was employed in this case study, with two groups of parents being selected. The research questions were concerned with the "What," "Why," and "How." The literature reviewed was discussed in the previous sections. Interviewees included six parents from four different schools – de- noted as school A, B, C, and D. Table 1 shows the details of the interviews conducted.

Individual interviews and audio recordings from these parents were investigated. All the interviews were carried out in Cantonese and a suitable audio device was used to record the interviews. These were then transcribed verbatim. Data analysis was performed using the process of open coding, axial coding, and selective coding. Finally, the codes were categorized into three classes: Possession of Technological Capital (digital skills and competence, accessibility to ICT related tools, and educational level), Possession of Resources (financial, social, and technical), and Mediation Philosophy in Use (guiding theory and monitoring

theory). The background information of the parents is shown in Table 2.

## FINDINGS AND DISCUSSION

This section provides an overview of parents' daily ICT usage behavior in technological capital, resources, and mediation philosophy, followed by a discussion surrounding the factors that affect their children's academic performance.

### Possession of technological capital

Digital skills and competence.

### Use of digital skills at work

From the interviews, it can be seen that all the lower-class parents are cleaners. Therefore, no special computer skills are required (only one revealed that she uses a computer in the office).
Regarding the middle-class parents, one of the fathers' jobs is computer-related. The other parent conveys information by chatting in a group. Hence, it was found that there is a gap between the nature of the two classes' jobs and even in their computer use. It seems that the lower-class uses less digital technology, while the middle class uses higher skills in their jobs.

**Table 1:** Details of the participants' interviews

| School | Participant No. | Participant's role | Participant's code |
|---|---|---|---|
| A | 1 | Mother | A_Prt _1 |
| A | 2 | Mother | A_Prt_2 |
| A | 3 | Mother | A_Prt_3 |
| B | 4 | Mother | B_Prt_1 |
| C | 5 | Father and Mother | C_Prt_1 |
| D | 6 | Father | D_Prt_1 |

### Digital competence at home

As seen from the data, three lower-class and one middle-class parent agree that they have limited digital competence at home, since they all said their children's ability in using digital tools is higher. For the other two middle-class parents, they felt they still possessed some digital competency that their children did not have. Thus, we find that there is a difference between the two classes. That is to say, students' learning motivations may be activated by their middle-class parents and result in positive educational outcomes. This will be discussed in more detail later in the section.
All in all, lower-class parents are usually non-proficient ICT skill users.[25] They do not know much about ICT and its uses in daily life and their children's learning. However, middle-class parents have acquired much more knowledge about ICT and may even use ICT with their children. This may explain the following dialog from Parent (A_Prt_1).
Interviewer: Have your children asked you for help in accessing the web for information or when facing other problems?
Parent (A_Prt_1): He does not ask me for help, instead he asks his brother since I do not know how to help.

### Attitude toward using digital devices

Most parents have a positive attitude toward computers and the Internet but believe they should be used correctly. In most instances, parents believe that digital devices and the Internet are

**Table 2:** Parent's social capital relation with their ICT possessions

| Parent(s) | Social class assigned | Highest educational qualification | Occupation | Home internet cccess | Digital devices owned |
|---|---|---|---|---|---|
| A_Prt_1 | Lower-class | Primary school | Food store worker | Rent 100M broadband | One laptop, one computer, smart phones |
| A_Prt_2 | Lower- class | Primary school | Cleaner | Rent 100M broadband | iPod, smart phones and one computer |
| A_Prt_3 | Lower- class | Primary school | Cleaner | Rent 100M broadband | Smart phones and one computer |
| B_Prt_1 | Middle- class | Secondary Five graduate | Factory Worker - Modelling | Have WiFi Internet at home | One laptop and one desktop computer, smartphones |
| C_Prt_1 | Middle- class | University graduate | Computer-related, and word processing | Can access the Internet at home | One laptop, a company owned tablet, one computer, and a DVD TV |
| D_Prt_1 | Middle- class | Secondary Five graduate | Consultant | Rent broadband with a satisfactory speed | One Note Book computer, iTunes, two tablet computers |

necessary tools for their children's education. That said, some parents think that digital devices should not be used for entertainment (e.g., online gaming). In which case, digital devices should be used correctly such as for learning.

## Accessibility to ICT-related tools

***Computers and digital devices***

Lower-class parents usually have access to computers at home, while the middle-class tend to own tablets. It seems that the economic resources of the lower-class are limited if we analyze their job nature. Based on the inter- views from parents (A_Prt_1,2,3), it was found that the lower-class are employed in relatively low-paying jobs, such as cleaning. Therefore, they might have difficulty purchasing fashionable ICT products as their budget is directed more toward other expenses. Therefore, there is a gap between these two classes in the accessibility of hardware. This may create disadvantages for low-class students in their performance at school. Children with advantaged backgrounds usually do well in the schooling system. This is because the culture in schools resembles the culture in their homes. Children who lack this cultural capital from their home will find it harder to adapt to the schooling culture, therefore they will perform worse. The result is they will be re-warded less by teachers and will select themselves out of the schooling system.[26]

## The internet

All families can access the Internet at home and believe both computers and the Internet are necessary tools for daily use and learning. In addition, one middle-class parent taught his child to use keywords to search for songs on YouTube at home. He believes that this action could increase the learning motivation of his special needs child, and hence improve educational outcomes. In fact, we may consider the aforementioned parent's digital competence (searching for songs via YouTube) as a form of technological capital being passed onto his special needs child. As such, it is evident that Bourdieu's cultural capital can be applied appropriately in this case. That is families that come different social class positions will inevitability transmit different types and quantities of their own cultural capital and habitus to their children.[27] Indeed, kindergarten students from higher SES backgrounds are actually more likely to attend cultural events. They attain more lessons in cultural activities. higher status parents are then making the best effort themselves to ensure that their children are in fact well-rounded. With regard to habitus, lower SES parents are more likely to feel unwelcome and uninterested in their child's school.[27]

## Educational level

Lower-class parents usually attain as high as a primary school education. Hence, their computer skills are relatively low, and in some cases, do not understand certain ICT hardware or software terms. Parents with a secondary school qualification usually learn from each other about their children's academic and computer knowledge. In fact, various studies have found that a parent's education plays a significant role in their children's achievements.[28] Parents of higher educational levels always have greater success in providing their children with the necessary skills they need such that they can become successful easily when attain an academic setting.[29] As Acharya and Joshi[28] point out, educated parents like to transfer the value of education to their children that will strongly affect the aspiration level and achievement of their children.

## Possession of resources - social

Low class families tend to not participate in social activities via the Internet, although some might use social media platforms such as Facebook. On the other hand, middle-class families often communicate themselves through using online workgroup chats, social media, and email. In fact, from Dworkin,[30] parents can use Internet discussion boards, community communication systems, email, and message centers to enhance connections with other professionals and parents. They can use these systems to meet each other in person and to share information about community programs.[31]

Moreover, parents can share thoughts, ideas, and experiences about parenting[30] and confirm approaches as other parents may suggest.[31]

## Mediation philosophy in usage - guiding and moni toring theories

***Guiding theory***

Parent (D_Prt_1) explained that he and his child would meet to download games together. He would

then explain to his child to download software with lots of previously well-defined rules. If he accepted, it would lead to privacy issues, which was a concern. Sometimes, even parents might fall into this trap, but the child will often understand this situation. Therefore, whenever there are new games announced, he will list them first. Then he will check to see if there are strange or other rules to determine whether his child should download it by himself. The authors suggest that the parent and child should have a verbal agreement or contract before downloading these games. This is not to restrict him as there is the existence of risk.

***Monitoring theory***

Parent (B_Prt_l) states that she always monitors her children's Internet usage to be aware of their browsing history. She believes that using the Internet for study and entertainment should be well balanced. Indeed, mediation philosophy should include the following theoretical strategies:[32] Restrictive mediation (or often referred to as rulemaking,[33]): Parents who engage in Internet mediation may set rules for their children that prohibits viewing certain content or directly using the Internet.[34] There is a correlation between socializing children and social competence if children experience firm behavioral control from their parents.[35] If policy implementation is too extreme, children might resist against these strict parental rules.[36] By the way, children like to view this content with their peers.

Instructive mediation (or referred to as evaluative/ active mediation: [37] Parents will discuss certain aspects of digital media with children, either during or after use. One of the positive outcomes is that we can mitigate young people's aggressive behavior or the cultivation of a skewed world view.[38] In addition, teenagers may acquire higher ability to be sceptical about Internet content and promote critical thinking and a moral compass for aggressive thinking.[37] Finally, high conversational orientation can reduce unproductive conflict, and thus foster a more positive climate for kids.

Co-viewing:[39] A situation where parents and children use social media together - to share their experience - but not engage in any discussion about content. Research shows that parents and children will feel closer to one another under these circumstances. Hence, children learn more about human relationships from the mediation.[39]

Besides the above three mediation strategies, the participatory learning strategies are worth mentioning. It concerns play, learning-driven inquiry, and free experimentation. In 1978, Vygotsky[40] suggested that children can learn to develop abstract meaning.

In terms of practicality, parents and children can have "quality time" by using digital tools for more child-centered activities. Parents and children participate together in browsing the Internet, playing interactive games, and using mobile devices.[41] Through virtual environments such as social network websites and Wikipedia, participants can contribute, participate and collaborate.[42] In fact, participatory learning tries to facilitate learning through media by sharing ideas, goals, and comments.

To sum up, according to Lam, 2014,[43] "in general, boys enjoy using ICT mainly for playing games, while girls tend to use it for communication platforms such as WhatsApp," and "without guidance from parents, students tend to spend most of their leisure time on computers and mobile phones. This may affect their academic results" (p. 42). It was discovered that students' school performance can be seriously affected if lower-class parents do not have suitable training in mediation philosophy, as they do not have any guiding and monitoring theory. Furthermore, these parents often possess a low technological capital and level of education. Thus, they are unable to pass this capital to their children. In contrast, middle-class parents, as shown in the previous section, one can increase the learning motivation for their children through technology-aided learning. Based on this study's re-search interviews, lower-class children only used digital technology for homework. They liked to use chatting software and web searches as a means of ICT-aided learning only in Lam, 2014.[43] However, they could not achieve the best academic results in the class or highly increase their learning motivation, as shown in the present interview. This demonstrates a clear education inequality, and hence affects school performance, as suggested by Bourdieu's theory. We may empirically classify parents' digital skills and competence into three categories: high level (parents are fluent in computer skills, have a computer-related job, and higher competence than children), middle level (parents require computer skills in their job, but their children have higher competence), and low level (parents have little knowledge about computers).

**Table 3:** Parents' digital skills and competence information

| Parent's code | Skills and competence level | Capital passing situation |
|---|---|---|
| A_Prt_1 | Low | Less or No |
| A_Prt_2 | Low | Less or No |
| A_Prt_3 | Low | Less or No |
| B_Prt_1 | Middle | Children acquire more computer knowledge than parents who do monitor their Internet activities |
| C_Prt_1 | High | Parents can pass most technical skills to their children who cannot handle all web searches skills |
| D_Prt_1 | Middle | Parents can pass some of the technical skill to their children and increase learning motivation |

The relationship between passing on technological capital and the level of parents' computer skills is shown in Table 3:

## CONCLUSION AND SUGGESTIONS

### Educating parents is key

This research has revealed a gap between low-class and mid-class parents in their possession of technological capital, resources, and mediation philosophy. It seems that these attributes affect students' school performance. Hence, this leads to the classic problems of social stratification.[44]

Through interviewing these two groups of parents, we can understand the meaning of "social reproduction" and "education as symbolic violence" by Pierre Bourdieu, as shown in the discussion section summary. Moreover, there is an educational digital divide, which is found in access and usage amount.[25] The key divide is found "in mastery and intelligent use of ICT.[25]" Hence, it can be shown that Bourdieu's theory has influenced classes of parents and their ICT usage in education. To overcome the educational inequality and ICT usage divide, education programs about digital technologies should be available to all parents. Thus, they may gain a better understanding of information literacy and the impact it has on their children.[45]

Furthermore, the interviews found from the concerned parents are in a very limited, no guiding, or monitoring theories towards their children's ICT usage. Thus, educational programs concerning mediation philosophy, aiming to help children grow up in a healthy and happy way, should be available. It also provides views for parents from different perspectives and helps parents to better understand themselves and their children. Therefore, problems predicted by Bourdieu' theory for the lower class can be solved. For the middle-class, educational programs about mediation philosophy can help them to have a systematic idea of raising children in the digital age.

The author believes that educational programs including both new technologies and mediation philosophy for parents can greatly contribute to- wards solving most problems with students' usage of ICT-aided learning at home, owing to the four aforementioned theoretical strategies. This encourages parents to maintain a good relationship with their children during their usage of digital tools at home. Moreover, even lower-class children will not be left behind in terms of academic achievement, since parents can learn not just technological skills but also nurturing principles for the digital generation. Hence, the effects of cultural capital to lower-class students' academic results can be minimized. Furthermore, parents can apply them and participate in their children's learning and leisure activities at home. Thus, there will be balanced time and digital resource management for students between entertainment and study. As a result, this leads to a "positive and quality usage of ICT for students.[45]" Their academic results will certainly be improved. Therefore, educating parents can break the class effects for students (as proposed by cultural capital theory) and bridge the educational inequalities of technology-aided learning. To be precise, all of the aforementioned is what the contexts existing in this author's philosophy of educational technology and how the doctrine should be presented systematically.

Finally, there were only six interview samples, which is very limiting. Hence, this study cannot have a strict generalization about the relation between parents' ICT usage behavior and its effects on children's academic performance in school. However, the findings do tell us that students' academic results may not be just affected by socioeconomic background, but also influenced by other factors such as parents' cultural (technological) capital, resources, and mediation philosophy. There are always gaps between low-class and middle-class parents among these factors, which can lead to educational inequalities among

students. Thus, to overcome these inequalities, parents should be educated in not just digital technology skills but also mediation theories of ICT usage, which is one of the keys to solving this inequality. Indeed, there should be additional qualitative and quantitative research to find out the relationship between technology-aided learning and academic results among students.

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2. This paper's six sets of interviewed data came from the above research project and were coded by this author's own effort while the full set of re- search data can be viewed from Allan H.K.Yuen, Jae Park and Lu Chen's published academic paper in the following web-site: https://journals.sagepub.com/doi/abs/10.1177/1461444816667084

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