


**ONLINE LEARNING IN OPINIONS OF PRIMARY  
SCHOOL STUDENTS, TEACHERS AND PARENTS  
DURING THE COVID- 19 PANDEMIC**

**MIN ZHANG**



**A THESIS REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN  
TECHNOLOGY ENHANCED LEARNING AND INNOVATION  
SCHOOL OF INDUSTRIAL EDUCATION AND TECHNOLOGY  
KING MONGKUT'S INSTITUTE OF TECHNOLOGY LADKRABANG  
2023  
KMITL-2023-ED-M-242-026**

This material is reserved for educational use only, not allowed for commercial use.

Forbidden to modify the content, and cite the document when use.



**COPYRIGHT 2023**

**SCHOOL OF INDUSTRIAL EDUCATION AND TECHNOLOGY**

**KING MONGKUT'S INSTITUTE OF TECHNOLOGY LADKRABANG**

This material is reserved for educational use only, not allowed for commercial use.

Forbidden to modify the content, and cite the document when use.

<b>Thesis Title</b>	ONLINE LEARNING OPINIONS OF STUDENTS, TEACHERS AND PARENTS OF PRIMARY SCHOOL DURING THE COVID-19 PANDEMIC
<b>Student Name</b>	Mrs. Min Zhang
<b>Student ID</b>	63603115
<b>Degree</b>	Master of Science Program
<b>Program</b>	Technology-Enhanced Learning and Innovation
<b>Year</b>	2023
<b>Advisor</b>	Asst. Prof. Dr. Kanyarat Sriwisathiyakun

## ABSTRACT

This study investigated student attitudes, teacher roles, and parent engagement in online learning-teaching during COVID-19 lock down. Quantitative data was collected by questionnaire using five-point Likert Scale. Qualitative research used by open-ended questions. I asked 500 participants, distributed to 212 Chinese public primary school student, 106 parents, and 182 teachers. Three kinds of questionnaires designed were applied to different participants in this paper. For student version of the questionnaire, the participants were divided three age groups: from 6-8, 9-12, and over 12 years old. Data analysis included mean, standard deviation, normality checks and one-way ANOVA. For teacher's version of the questionnaire, I used mean, standard deviation, and t-test to compare teacher's gender and role. For parent's engagement set, mean and standard deviation were also used. One-way ANOVA was used to study parent engagement affected by their education background. I found that Chinese public primary school students were confident using the technology, their age affected their attitudes; primary school teacher gender did not affect their role; parent's education background impacted their engagement.

**Keywords:** Online Learning, Primary school student attitudes, teacher roles, parents' engagement.

## ACKNOWLEDGEMENT

Firstly, I would like to express my deepest gratitude to my leader and boss. Most of my colleagues have overseas study backgrounds, they have had diverse cultures, and always showed a strong ability and solved problem skills at workplace. With the help of them, I came to King Mongkut's Institute Technology Ladkrabang and improve my education background.

I am very excited and indebted to Dr. Kanyarat Sriwisathiyakun, my thesis advisor, without her help, I would never have my own ideas to write my research. From the beginning of third semester, she has contacted me on WeChat every week, shared literature materials with me, provided guidance, and constantly advocated a spirit of adventure. Without her guidance and persistent help, this paper would not have been written. I admire Dr. Sirirat Petsangsri, she has extensive experience in cognitive theory and always smiles with her students, I like her class very much. Dr. Thanin Ratanaolarn is good at Statistics, I am appreciating him, he has taught me how to use SPSS software and data analysis, I wrote chapter four of my paper with his help. Dr. Jirarat Sitthiworachart was strict with students, she takes her work seriously and responsibly, we are all respect her. Dr. John is a native speaker, he is smart, and helps us to correct grammatical errors in sentences and teaches us how to write standardized English articles. He has a strong academic background and published more than one hundred articles. I hope I will be as excellent as him in the future and have my own opinion in education field.

Secondly, I am also very grateful to my children's primary school teacher, she invited me to join the family committee, I often went to school for training and learning. Family education and school education are combined to cultivate children improve their ability together. I also genuine thanks to the research participants, they were willing to spend valuable time in filling out questionnaires and supporting my research.

Lastly, not least. I am greatly to thank my parents. They taught me better later than never, to face all difficulties and setbacks bravely, keep learning and improve my ability about how to solve problems in my daily life. I'm also very grateful to my husband, he is young and aggressive, he was cared about my studies and paid for my tuition fee. I will always be grateful to my family for their love.

Min Zhang

## TABLE OF CONTENT

	<b>Page</b>
ABSTRACT.....	I
ACKNOWLEDGEMENT .....	II
TABLE OF CONTENT .....	III
LIST OF TABLES .....	V
LIST OF FIGURES .....	VI
CHAPTER 1 INTRODUCTION .....	1
1.1 Background.....	1
1.2 Research Objectives.....	3
1.3 Independent and dependent variables in this study .....	3
1.4 Scope of the study.....	4
1.5 Definition of terms.....	5
CHAPTER 2 LITERATURE REVIEW .....	6
2.1 Online learning during COVID-19.....	6
2.2 Related work.....	15
CHAPTER 3 RESEARCH METHODOLOGY .....	18
3.1 Study design.....	18
3.2 Participants .....	18
3.3 Research instruments .....	19
3.4 Procedure .....	19
3.5 Data collection .....	19
3.6 Data analysis.....	20
CHAPTER 4 RESULTS .....	21
4.1 Introduction.....	21
4.2 Basic Demographics of Participants .....	21
4.3 Quantitative data.....	22
4.4 Qualitative Research.....	34
CHAPTER 5 CONCLUSIONS .....	36
5.1 Summary of the study .....	36
5.2 Summary of the findings.....	37
5.3 Discussion .....	39
5.4 Conclusion .....	41
5.5 Recommendations .....	42
5.6 Limitations .....	43
REFERENCES .....	44
APPENDIX.....	52
Appendix A Actual Questionnaire Used .....	52

## TABLE OF CONTENT (Cont.)

	<b>Page</b>
Appendix B LIST OF EXPERTS .....	62
Appendix C IOC Validation .....	66
AUTHOR BIOGRAPHY .....	77



## LIST OF TABLES

Table	Page
1.1 Three objectives and associated research questions .....	3
1.2 Scope of the study .....	4
1.3 Definition of terms .....	5
3.1 Scales for interpreting quantitative data from questionnaires.....	20
4.1 Participant gender .....	21
4.2 Student ages .....	22
4.3 One-way ANOVA comparing ages and attitudes of students .....	23
4.4 Student attitudes during online learning .....	25
4.5 Teachers' gender .....	28
4.6 Gender with teachers' role T-test.....	28
4.7 Teacher role: mean ( $\bar{x}$ ) and standard deviation (S.D.).....	29
4.8 Parent education level .....	31
4.9 One-way ANOVA for parents' engagement.....	31
4.10 Multiple comparisons between parents' factor vs education background. ....	32
4.11 Parent factors and engagement during online learning.....	33
5.1 Summary of data collection and data analysis used in this study .....	38

## LIST OF FIGURES

Table	Page
1.1 Conceptual framework.....	3
2.1 Beijing digital school website.....	10
2.2 Smart education of China website .....	11
4.1 Social media platforms used by students for online learning .....	22



# CHAPTER 1

## INTRODUCTION

### 1.1 Background

At the beginning of 2020, there was a major outbreak of COVID-19 globally. Education faced an unprecedented test. Many schools around the world closed their doors in an effort to reduce the spread of the virus. This closure led to a rapid shift from traditional classrooms to online learning, while placing more responsibility for learning in the hands of parents and guardians (Garbe et al., 2020). Therefore, for students majoring in educational technology innovation management, parental experience of online learning with their children became worth studying.

For example, the China Internet Network Information Center released the “48<sup>th</sup> Statistical Report on Internet Development” in China (Y. Wang, 2021). By June 2021, the number of online education users in China reached 325 million, 16.78 million less than that in December 2020, accounting for 32.1% of the total number of internet users. Isolation promoted online learning, instead of traditional teaching and learning, and the number of users increased. The shift to online learning was also seen as a good opportunity to make teachers and students more creative (UNESCO, 2020b). The spread of the virus created fear, anxiety and other concerns for children, teachers, and parents. The worries of parents, in addition to physical distance and other personal factors, were thought to be influenced by unwillingness to raise children through online or home learning. There was also a lack of technology and internet or limited IT skills for children with special educational needs.

The teacher concerns in learning were due to lack of opportunities for online learning, based on their level of knowledge and skills, use of technology, access to technology and isolation in the home. In a few locations, the adverse impact of COVID-19 control measures on the level of technology used by teachers in the classroom was extremely high. In addition, it required teachers to change to online teaching. Increased stress and anxiety levels among teachers was also reported (Hyseni Duraku & Hoxha, 2020).

The benefit of online learning was that it leveraged modern digital media technology and the web to provide teachers and students with an excellent method of material delivery that is not limited by time and place, it can be accessed from anywhere at any time. Parents found the online environment was a convenient way for primary school students to follow teachers' lesson plans, even if they are busy with work and did not have time to manage children's home schooling. Someone noted that there were some benefits to using online learning: it increased the variety and creativity of learning activities, being able to record online interactions. Also, it improved students' learning attitude.

In addition, the outbreak also created remote communication tool requirements to rapidly encourage start-up companies, for example (教育行业数据分析: 2020Q1 中国直播形式的中小学网络课程占比为83%-艾媒网, 2020); according to iiMedia data, over half of primary and secondary school students used remote communication tools and internet class products for online classes. 83% of the primary and secondary school students took classes online in the outbreak, which encouraged development as they did not need to travel for education: also, it saved cost. Online education supplemented student extracurricular breaks and effectively supplemented classroom teaching. Learning also acted as a primary and middle school students' extracurricular counselling tools in the future use of classes after school. Online education products will become the main course in all kinds of teaching products.

### **Strong use of online teaching tools**

iiMedia Research, a media consultancy company, reported that for primary and secondary school education users, 58% used integrated teaching products for online learning, followed by the subject tutoring classes and homework. This company believed that, for both parents and students, the degree of extracurricular counselling degree increased in after-school classes. The penetration of e-type online education products was strengthened, while the online education products of “e-schools” lead to more comprehensive courses, covering subject guidance, homework guidance, etc., so they became the most used online education products. However, in the future, online education products are likely to increase and vertical online education products have potential. At the same time, online teacher resources, forms, curriculum content was diverse, leading to more choice, to satisfy the students. With more materials for course learning, problem sets and answers, different demands from students for one-on-one courses and real-time interaction with teachers, helped to solve problems and obtain the best learning effect. In addition, big data and AI technology has been widely used in online education, to analyze student learning data, identify vulnerabilities, provide accurate knowledge and recommendations to improve learning efficiency, and other fields of broadcast platform "crossover" in online education. iiMedia claimed that online education can be a complete supplementary offline education or, even, to a certain extent, replacing offline education.

This study investigated the opinions of online learning on students, parents and teachers at primary school during the COVID-19 pandemic. Student attitudes, parent engagement and teacher roles were investigated using a questionnaire in a Chinese primary school. This study's results would assist parents in providing support to students to meet student requirements and maximize learning outcomes.

## 1.2 Research Objectives

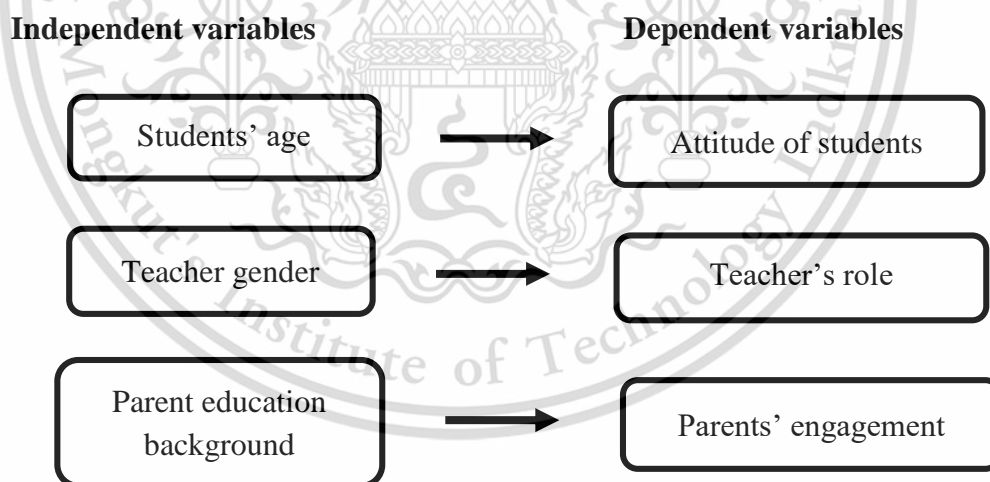
This study focused on online learning in primary school: the objectives and questions addressed are:

**Table 1.1** Three objectives and associated research questions

	<b>Objectives</b>	<b>Associated Research Questions</b>
1a	To survey student attitudes and compare attitude vs age	What attitudes do students have in primary school?
1b		Does student age affect attitudes?
	To study teacher roles and to find whether gender affected their roles	What were teacher roles? Does gender effect on their roles?
	To explore parent engagement and to compare the effect of parents' education background	What was the parent engagement with online learning? Was parent engagement affected by education level?

## 1.3 Independent and dependent variables in this study

In this study, there were three independent variables and a dependent variable. The focus was on causal relations among the variables, through the role of teachers in online teaching research and analysis.



**Figure 1.1** Conceptual framework

## 1.4 Scope of the study

**Table 1.2** Scope of the study

Study participants		
Location	Beijing	40.22261°E, 116.22889°N
School	Changping District Chengbei Central Primary School	Changping District, Beijing, China
Type of school	Public, government	
Students	Primary	212
	Gender	Males 83, Females 129
	Age range	6 to 13 years old
Parents		106
Teachers		182
Tool	Questionnaire	Distributed by Questionnaire Star

Parents' engagement and students' learning attitude better assist the implementation of school teaching plan.

## 1. 5 Definition of terms

Terms used in this study are defined in the following table.

**Table 1.3** Definitions of terms

Online Learning	Online learning is a platform of education where students use their home computer, laptop, a tablet, smartphone or electronic devices through the internet to keep learning
Teachers' role in online teaching	An online teacher needs to play the role of guiding students, to stimulate student interest, to help students develop independent study habits. Teachers were not only traditional school staff, but also leaders to guide student learning. Online teachers need to change their mode of teaching to provide personalized education in online teaching.
Parent Engagement	Refers to parents supporting their child's learning at home, they had the main responsibility for family education. parents needed to communicate with their children, understand their children's needs, and support their children and help during online learning.
Parent education background	A parental characteristic, which has been studied as a variable in predicting a student's online learning attainment.
Student Attitudes	Refers to primary school student attitudes towards online learning during the lockdown period. Compare the students different age, to survey their learning attitude.

## CHAPTER 2

### LITERATURE REVIEW

This chapter reviews the literature on the impact of online learning on primary school children, parents, and teachers at primary school during the COVID-19 pandemic, in five areas including:

(1) Online learning during COVID-19, (2) Free online platforms, (3) Systems for distributing class resources, (4) Teachers' role, (5) Parents engagement and family environment, (6) Attitude of students, (7) Related work.

#### 2.1 Online learning during COVID-19

Computer integration in an educational situation occurred with the long outbreak of the COVID-19 pandemic. In 2019, a new virus was observed in China, which spread rapidly; it was labeled COVID-19 by the World Health Organization (WHO) on February 11, 2020. On 11 March, WHO declared the outbreak to be a pandemic (Zhu et al., 2020). Besides interruptions to many regions like travel, business and economies, the pandemic had remarkable effects on schooling (Ghanbari & Nowroozi, 2021).

Abid et al., 2021 reported the experiences of 11 Pakistani university staff who were a team in online teaching for the first time during the pandemic. Semi-structured interviews with the work force disclosed five aspects of online teaching experience, including ability and gender-related problems, teaching strength, challenges in online teaching, developing a site specification and staff post-COVID-19 viewpoints. They found that staff were focusing on details in the wave of the pandemic with little attention to global practices for online learning. However, the background itself adapted the academic staff to blend learning access and increased their awareness of global and future challenges.

Online education is the combination of internet technology and traditional education, compared with traditional education. Online education has three advantages: breaking through the limitations of (a) time and (b) space, and (c) a more flexible way of learning. It can avoid fragmented learning, where the duration of the class is generally controlled within a very fixed period, e.g. 30 minutes. In addition to basic education, online education provides users with more valuable content and interesting education.

Online learning is the easiest way for most workers to access the new knowledge economy and related jobs. To be effective for the next generation, online learning must include mobile learning, video games, online communities and learning management systems that involve every user (Anderson, 2008).

At the same time, educational institutions moved toward using the internet for delivery, both on campus and elsewhere. For organizations and institutions to make this often-costly move, there must be a perception that using online learning offers significant benefits. Here are some benefits for learners and teachers.

a) For learners, there is no time zone, nor is location or distance an issue.

b) In asynchronous online learning, students can access online materials at any time, whereas synchronous online learning allows only real-time interaction between students and teachers.

c) Learners can use the internet to access the latest relevant materials and communicate with experts in their field. Because learners can complete online courses at work or in their own space, and learning can be placed in context, i.e. the application of knowledge and skills in a particular context will be facilitated.

d) For teachers, tutoring can take place at anytime and anywhere. Online materials can be updated, and learners can see the changes immediately. When learners have access to material on the internet, teachers can guide them to appropriate information according to their need (Anderson, 2008).

Online learning is a tool to make teaching and learning more student-centered, more innovative, and even more flexible (Dhawan, 2020). Online learning is defined as a learning experience using different devices (for example - mobile phones, laptops, etc.) and connected to the internet in a synchronous or asynchronous environment. In these environments, students can learn independently anywhere and interact with teachers and other students (Singh & Thurman, 2019).

Nowadays, in economically developed areas, the maturity of network technology provides conditions for the application and practice of online teaching in basic education and leads to rich and diverse internet application modes in primary and secondary school teaching.

2.1.1 Free online platforms supporting live-video communication for teachers, students and parents

For online learning platforms, (Chen & Keng, 2019) argued that learners feel inconvenienced by physical classrooms, which had a negative impact on overall convenience. As a result, learners moved the learning platform to the internet to improve their learning effect. For the same reason, considering the inconvenience of studying in physical classrooms, students will also be willing to turn to online learning for fear of being affected by the epidemic.

**WeChat** - A simple chat program

In my study, WeChat was used for basic communication between teachers, students, and parents.

More elaborate teaching systems (<https://weixin.qq.com>) include:

### ***Zoom***

Zoom is an app for video and audio conferencing, collaboration, chat and webinars. Teachers can use it for online course.

Its advantages are:

- 1 Supports screen sharing
- 2 Record the screen and watch it replay.

However, some teachers report that regular changes in the interface and ways to operate the program change regularly – without notice, so that the interface is not consistent and annoying, because users need to learn new options as they are using the program.

One disadvantage is that it has no immediate plans to dig deeper into the Chinese market. Currently, in 2022, it has given up on the Chinese market, but existing accounts can still be used. Some teachers like to use it to give lectures, because it is easy to operate, and teachers and students can communicate with each other during an online class.

### ***Tencent Meeting***

Tencent meeting was originally a commercial program, only free during the epidemic. As a commercial product, sound and picture quality is slightly better than QQ, and the mobile version also supports screen sharing. Moreover, compared with Tencent classroom, it removes many complex functions, making communication more convenient and efficient. The disadvantages are each class needs to enter a meeting one by one, when there are many people, there are some difficulties, and there is no group management, hand raising and other functions. Therefore, teachers often use Tencent meeting to organize students to hold online class meetings.

### ***Ding Talk***

Ding Talk is an enterprise version of an instant messaging app launched by China's Alibaba Group. It provides multiple languages and supports multiple operating systems. It was developed by Alibaba Group and launched in 2015 (<https://www.dingtalk.com>).

Ding Talk is provided to all Chinese enterprises free of charge for business communication and work coordination, helping Chinese enterprises to improve the communication and coordination efficiency through systematic solutions. Teachers working in private training liked to use it to hold online meetings during the lockdown.

### ***Microsoft Teams***

Microsoft Teams is commonly used by universities and other enterprises internationally. It has many features, but since it was designed for collaboration between small ‘teams’ working on projects, many users complain that its adaption for teaching use was far from perfect.

#### 2.1.2 Systems for distributing class resources

Some platforms used by teachers to give lectures and allow students to attend classes at home in China are:

##### (1) Beijing digital school

Beijing digital school classroom (<http://www.bdschool.cn>) was specially designed by the Beijing Bureau of Education for this year's epidemic outbreak as a primary and secondary school student online learning platform, to stop classes being completely closed or suspended. The outbreak was ruthless, but the software was built so that fewer children would drop courses, even though they could not go out: they could learn online at home. The development of children determines national development: young people are the pillars of a society to focus on the development of talent, if educators teach children well, the country will prosper! If a child does not know anything, he or she can ask their teacher in an online course. The Beijing digital school covers Chinese, mathematics, English, physics, chemistry, biology, history, politics, and other subjects, suitable for primary school to high school children to use, with full analysis, more information, fast search, good effect and ability to be downloaded at any time; a typical screenshot is in Fig 2.1



**Figure 2.1** Beijing digital school website (<http://www.bdschool.cn>)

## (2) National primary and secondary school network cloud platform

A second free learning platform was built to help children learn independently at home. During the lockdowns in 2020, the National Cloud Platform for Primary and Secondary Schools was distributed from the General Office of the Ministry of Education and the General Office of the Ministry of Industry and Information Technology (*Smart Education of China, 2020*) to support local schools to function well during "school suspension" and help students study at home. The Ministry of Education integrated the quality teaching resources of the government, some provinces and cities and schools and built the cloud platform during the delayed term in China: it was launched on February 17, 2020. At the same time, China Education TV Channel 4 broadcast courses to users all over the country through the Direct Broadcasting Satellite platform, which covered remote rural areas, where the internet signal was weak or cable TV was not accessible. To enrich learning resources, some provincial education departments and primary and secondary schools were organized to open online learning platforms or online schools free of charge to the whole country.

The platform resources included epidemic prevention knowledge, history of the Communist Party of China, thematic education resources, as well as the main subject curriculum resources from primary school to high school. The course duration was generally about 20 minutes.

On February 24, 2020, the Ministry of Education upgraded the national cloud platform for primary and high schools to further enrich the platform resources and

promote the all-round development of students. As of May 11, 2020, the online cloud platform for primary schools had received 2.07 billion visits and, for secondary schools, it had received 1.71 billion visits. The audience rating of China Education TV's classroom in the air jumped significantly and ranked in the top 10 of national TV channels. Parents and students generally reported that the cloud platform had a clear interface, rich content, high quality resources and was convenient use with a good visual effect.



**Figure 2.2** Smart Education of China website (<https://www.zxx.edu.cn/>)

These two online learning platforms were free learning platforms provided by the government for students. All major subjects, including Chinese, English, and mathematics, were on these platforms during the lock down.

### 2.1.3 Teacher role in online education

Teachers all over the world regard teaching as the most sacred realm of educating people. The sense of achievement brought by educating people is the highest

embodiment of the value of a teacher. There are many roles that teachers play in education and teaching, including "teacher", "friend" and "mentor".

In ancient China, the teacher was the student's mentor - the guide and direction of life. "Teachers, preach, impart knowledge, and solve puzzles ". From Han Yu (韩愈) Tang Dynasty, the concept has been passed down for thousands of years in China and is still regarded as a guiding concept. Zhu, a modern Chinese educator, added "To teach, to impart knowledge, to cultivate, to cultivate moral character".

“古之学者必有师。师者，所以传道授业解惑也。人非生而知之者，孰能无惑？惑而不从师，其为惑也，终不解矣。生乎吾前，其闻道也，固先乎吾，吾从而师之；生乎吾后，其闻道也，亦先乎吾，吾从而师之。吾师道也，夫庸知其年之先后生于吾乎？是故无贵无贱，无长无少，道之所存，师之所存也。”

——韩愈《师说》

*“In ancient times, those who were learned must have teachers who could spread the Dharma, pass on the knowledge, and dispel doubts. Man is not born omniscient, who can say for sure? He is suspicious and refuses to learn from his teacher, and he is puzzled. Those who were born before me and learned before me are my teachers; those who were born before me and learned before me are also my teachers. Born before or after me? Therefore, it doesn't matter whether you are high or low, young, or old, you are my teacher.”*

Han Yu, "The division " (Helen, 2015)

Teacher roles in constructionism, teacher need to warrant the knowledge a learner construct. Thus, they need to promote the development of effective instructions. Teacher quality is the single most important determinant of student performance. This is even more significant when applying constructionism. The teacher's knowledge, beliefs and actions all affect learner success. This new teaching mode not only emphasized active learning, but also teacher help and support in constructing knowledge. Therefore, teachers changed their role from simply imparting knowledge to guiding and promoting students, so as to stimulate their interest in learning.

During online learning, all teachers were changing their traditional roles and moving to new ones in the school. They become active participants, mentors, consultants and guides, when they work closely with their students' online learning and help students develop better learning techniques (Nunan, 1993). From the traditional classroom, in which the teacher was the leader, they turned themselves into helpers and facilitators for the students, Teachers should encourage students in "cognitive reconstruction" (Schmeck, 1988), through allowing students to discuss online to improve cognitive awareness, their beliefs and expectations about the learning of major subjects, e.g. English and mathematics. Through such discussions, teachers can promote the development of learner autonomy (Yang, 1998).

COVID-19 led to unimaginable situations in the world; it introduced unprecedented technical use in the education system and teaching process. School and universities stopped taking regular classes, and the time of online curriculum had arrived. It allowed students and teachers to learn and teach through an online platform. They needed to learn technology to succeed. Now the role of teachers changed. In this section, I discuss how to change the role of teachers.

Due to COVID-19, two important factors appeared. The first was to adopt new teaching methods to teach children through the virtual environment of online media. Face-to-face learning and teaching became part of the past in the new scene.

No matter what kind of channel the teacher used, they needed to work creatively to enable students to interact with the curriculum. Unlike the classroom, where students enter the course and leave after it, in online teaching, teachers must face the disconnection of students. They needed to be more active and put their time into students during teaching.

The second factor was time management. Teachers had to 're-calibrate' to allocate time between administrative tasks, teaching, and engage with people. Because of the online teaching settings, more students and teachers were needed to interact, and they also needed flexibility. The education system was showing how to provide students with feedback, maintain continuous communication and report to the local education department to obtain guidance in learning to help them ( Digital Class, 2021).

#### 2.1.4 Parents engagement and family environment

Teachers and researchers have long known that children from some families do better in school than others from the same community. Overall, research found that learning in school was associated with parents' education and occupation, parents' social class and socioeconomic status and membership of a particular ethnicity. Sociological studies of socioeconomic status (often including parental education, parental occupation, and income) reveal correlations (Bloom, 2008). In recent years, Li (2004), a student in education in China, studied the relationship between parental involvement and students' learning motivation and academic performance. People's understanding of the relationship between family and school has changed with the change of the social conditions that affect family and school. People increasingly advocated that the separation between family and school should be shifted to a cooperation and communication between family and school. Research over the past few decades has shown that when families are effectively involved in schooling, schools, families, and students all benefit. Parental involvement has been demonstrated by extensive studies to be an important variable affecting children's education. More and more schools are examining the effectiveness of parental involvement and constantly encouraging parents to get more involved in school education. At present, most studies on parental involvement were conducted under a western cultural background, and some of the

studies on Chinese parental involvement only examined the situation of overseas Chinese immigrants or parents from Hong Kong and Taiwan.

The influence of parents' education level on children's academic performance and the factors that affect students' academic achievements are part of their natural environment. However, parents in such a family environment can improve students' performance (Roman, 2014). Parents can also benefit from guidance and counseling from school leaders to help improve student study at home. To allow students to achieve higher academic performance, some researchers hypothesized that student achievement of their goals is largely influenced by their parents' academic performance. Thus, (Akben-Selcuk & Altioek-Yilmaz, 2014) inferred that students with literate parents outperformed those with non-literate parents on standardized tests. This was because educated parents can share information with their children about schools (Mallett, 2016). and what is being learned. In addition, they were able to help their students in academic work and participate in school activities (Thompson et al., 2013). Therefore, parental education is important in predicting student performance, which is often pointed out in several research reports on student performance (Park et al., 2011). Among parents, mothers' higher education is reflected in students' math and reading scores as they place more hopes on their wards. He further asserted that the higher level of performance related behavior exhibited by the mother at home, and the more explicit insight into the child's performance was projected by the mother's explicit confidence and hope (Boi, 2020).

#### 2.1.5 Students' attitude

Student participation is generated through individual attitudes, thoughts, behaviors, and communication with others. Achievement at a certain level of thought, effort and feeling. Therefore, how their attitudes relate to their learning and how they relate to content, teachers and other learners (El-Sabagh, 2021).

Understanding student attitudes is important to support their achievement and interest in a particular subject. Various authors have variously defined attitudes (see reference by Majid et al., 2018). Attitude is one of the main determinants of human behavior. Individual attitudes strongly influence their love, hate and behavior. Attitude is a phenomenon acquired through learning, which guides individual behavior and causes subjectivity. Positive attitudes towards school subjects include willingness to participate in the curriculum, satisfaction by answering questions, acceptance of one's own worth and consent to a value being recognized (Majid et al., 2018).

Attitude includes rational cognition, emotional preference, and motor tendency, with certain consistency and stability. There is no right or wrong attitude, but positive, negative, and active or passive tendencies (Aiken, 1970).

Attitude is a learned tendency in which a person reacts either actively or passively to a particular object in response to changes in the external environment.

Attitudes affect individual likes and dislikes towards things and events and are expressed in the process of treating and dealing with things and events. About the structure of attitude, researchers generally agree with the ABC structure of attitude proposed by American social psychologists Rosenberg and Hoveland (1960), which includes three aspects: affective, behavioral and cognitive. Among them, cognitive factors emphasize the opinions and knowledge formed on specific things; emotional factors are the preference and evaluation of a particular person or thing; behavioral intention is the tendency based on cognition and emotion (Liu, 2021).

Student achievement depends on their attitude, which affects their interests and leads to active participation or negative resistance to learning behavior. A positive attitude can improve learning willingness and promote learning activities.

## 2.2 Related work

### 2.2.1 International research in online learning

Significant developments in telecommunications have made distance learning easy (McBrien et al., 2009). Most of the terms (online learning, open learning, web-based learning, computer-mediated learning, blended learning, m-learning, for example) have, in common, the skill to use a laptop connected to a net, that offers the action to learn from anywhere, anytime, in any style, with any means (Cojocariu et al., 2014). Online learning is defined as picking up experiences in synchronous or nonsynchronous environments using different devices (e.g., mobile phones, laptops, etc.) with internet access. In these environments, students can be anywhere (independent) to learn and interact with advisers and other students (Singh & Thurman, 2019).

#### Online Nation

Five Years of Growth in Online Learning serves as the fifth yearlong detail on the state of online learning in U.S. higher education. This period of study, like those for the preceding four years, is aimed at answering some fundamental questions about the nature and extent of online education. Supported by the Alfred P. Sloan Foundation and based on responses from more than 2,500 colleges and universities. The faculty acceptance of online education has been consistently cited as an important problem. For academic commanders since the first survey. Results from this year show no significant changes to this trend. Only one-in-three academic leaders directly believe their faculty accepts the value and authority of online schooling (Elaine & Jeff, 2008).

Due to its advantages, online learning has grown rapidly in many countries over the past decade, leading to educational changes as learners move from physical face-to-face classrooms to virtual classrooms (Aldhafeeri & Khan, 2016). Online learning provides students with a flexible learning environment regardless of their physical location and availability, increasing participation rates (Kim, 2020) (Bagriacik Yilmaz, 2019a). Second, online education provides a lower cost option for educational

institutions and students compared to in-person instruction (Khurana, 2016); (Kim, 2020); (Bagriacik Yilmaz, 2019b). In addition, many young children have begun to use digital technology in their home life, thus enhancing the transition to participating in online learning activities (Yelland, 2006).

Although, online or distance learning was seen as viable, practical option during COVID-19, there has been a lack of exploratory research into implementing online technology in primary school settings. This study will help fill this gap to a complete picture of online learning with young learners in China and the online learning experience of primary school students, teachers, and parents' perceptions during the pandemic in 2020 (Zhao et al., 2021).

### 2.2.2 Research in China context

From 2000 to 2005, in China, in the initial stage of online learning development, basic research was in the first place, followed by technical research and applied research. Since 2006, following the basic and technology research, researchers have paid more and more attention to the application of online learning, especially the rapid growth of teaching models, teaching strategies and educational applications. The number of papers, shows that technology and application research are the foci for current research, focusing on four aspects: supporting technology, social software, teaching strategy and applications. However, basic research and evaluation and management analysis were deficient, which is embodied in theoretical research, value research, evaluation systems and influencing factors. From the perspective of research content, theoretical research explores development paths and implementation schemes suitable for China's national conditions based on drawing lessons from foreign advanced experience, but most research focused on online learning modes and online learning strategies. Online learning related research has seen a significant increase since 2019.

If teachers actively express willingness and a friendly attitude to communicate and contact with parents, parents will be very willing to communicate with teachers (Pan, 2010). Parent engagement includes activities and behaviors that relate with and support children in ways that are interactive, strong-willed, and guided toward essential learning and emotional outcomes (Sheridan et al., 2011).

Family engagement contacts are progressively being accommodated in a few U.S. schools and can develop a specific culture and humidity in schools. Family engagement liaisons enact cultural brokering roles between families and the school community. Activities cultural brokers in some schools incorporate include developing welcoming school climates, fostering parent–parent relationships, developing a social network within the school and embedding family engagement outside the school environment and into the community (Ishimaru et al., 2016). In China, parents and

teachers often use WeChat to for communication and keeping track of what students are doing at school.

Today most people agree with the statement that "Education is the result of close cooperation and joint efforts among students, parents, teachers and the whole society. The process of education is not only in schools, but also in every area of the family and community. Only when these different stages and places are closely integrated and harmoniously integrated into one body can we achieve the best goal of education"(Zhou, 2003).



This material is reserved for educational use only, not allowed for commercial use.

Forbidden to modify the content, and cite the document when use.

## CHAPTER 3

### RESEARCH METHODOLOGY

This chapter describes: (1) study design, (2) participants, (3) research instruments, (4) procedure, (5) data collection, (6) data analysis.

#### 3.1 Study design

I decided to focus on the opinion of online learning on students, parents, and primary school teachers, also including their teacher role and parents' engagement during the COVID-19 Pandemic. Because most parents are concerned about their children's education.

The survey in this study investigated attitudes and parent engagement for primary school students in online learning during COVID-19. Three questionnaires (student attitudes, teacher roles, parent's engagements) were designed for different participants: actual questions (in the original Chinese with an English translation) are set out in Appendix A. Each questionnaire was divided into three parts.

**Part I, IV, VII:** The participants filled in basic information: gender, age, grade, place of residence, etc.

**Part II, V, VIII:** Used a Likert scale to investigate the attitudes of students, teacher roles, and parent engagement during online learning.

**Part III, VI, IX:** Two open ended questions to survey respondents' opinions.

The study used in primary school students in Beijing, China, who studied online at home between February 2020 and December 2022: during this period, complying with epidemic controls, the students sometimes studied at home and sometimes back at school. The open-ended questions were added to gain a deeper insight with different vision.

#### 3.2 Participants

From a total population of 4,200 primary school students in the Changping district, I randomly selected two schools and randomly selected 500 students from these two schools. Using the Taro Yamane formula. I needed to obtain 366 samples to offer a 95% confidence interval. So, to be precise, with 500 subjects, my results were at that 95.8% confidence level. From Taro-Yamane's formula:

$$n = N / (1 + N e^2)$$

where  $n$  is the required sample size;  $N$  is the population and  $e$  is the target margin of error. So, with  $N = 4200$ ,  $e = 0.042$ , the required sample size is

$$n = 4200 / (1 + 4200 \times 0.042^2) = 500$$

For teachers, these were approach 400 in the population and 182 were samples. Taro Yamane Formula required 200 samples at the 95% confidence interval, so, my confidence level was slight lower at 94.5%.

### 3.3 Research instruments

This study adopted a mixed method research design. The quantitative data were collected using a questionnaire with closed questions to survey the attitude of students, personal factors of teachers and parent involvement in online learning. Qualitative data was also collected to survey opinions of online learning with students, teachers, and parents' engagement with open-ended questions.

### 3.4 Procedure

The questionnaires were designed in English, but because it was not the participants' native language, the questionnaires were translated into Chinese to avoid misunderstanding and encourage appropriate responses.

Before the questionnaire was used, two Chinese teachers and one Thai professor were invited as experts. The Thai professor is good at English, they were asked to check the appropriateness of English to Chinese translations in the questionnaire. The data obtained was used to calculate the Item Objective Congruence index (IOC).

The congruence was computed according to the scale below.

+1 = certain that the question is congruent with themes of opinion with student attitude, teacher roles and parent engagements in online learning.

0 = uncertain that the question was congruent with themes,

-1 = certain that the question was NOT congruent with themes during online learning.

I completed the questionnaires in both Chinese and English and posted them on the Questionnaire star website (<https://www.wjx.cn/>). When statistical data was needed, I sent the link to the participants using WeChat.

### 3.5 Data collection

Actual data collection followed these steps: I began distributing questionnaires to respondents in 2022. All the respondents were pupils, their parents and teachers in Beijing public primary schools. Questionnaires were given to them through the Chinese social media WeChat. When they had free time, they were asked to fill out a questionnaire and return it. After collecting all questionnaires, I downloaded the file from questionnaire website, and then used Excel to input the data into a database and SPSS 29 for calculation.

### 3.6 Data analysis

Descriptive statistics - percentages, ranges, mean and standard deviations were computed: most distributions were found to be skewed (Shapiro-Wilk test), so that standard deviations just provided rough indications of variance. Quantitative data were analyzed from open-ended questions form and Qualitative data were analyzed by SPSS 29 software. The statistical methods used to analyze the personal data of respondents are frequency and percentage. Frequency, percentage, mean, and standard deviation were used to quantify students' online learning attitudes.

The questionnaire was collected for quantitative research, and the frequency, percentage, mean value, and standard deviation were statistically analyzed. The qualitative research and content analysis on the open-ended question contents to further answer the research questions.

The data obtained from the questionnaire were transformed into descriptive statistics including means and standard deviation (S.D.). The findings were analyzed based on the five-point Likert scale ranging from 1 as 'strongly disagree' to 2 as 'disagree,' 3 as 'Moderate', 4 as 'agree,' and 5 as 'strongly agree.' The following scale was employed to interpret the data and measure their agreement or disagreement with each questionnaire item.

**Table 3.1** Scales for interpreting quantitative data from questionnaires

Average Score Ranges	Levels of Agreement
4.51-5.00	Strongly Agree
3.51-4.50	Agree
2.51-3.50	Moderate
1.51-2.50	Disagree
1.00-1.50	Strongly Disagree

One-way ANOVA was used to determine whether there were any statistically significant differences between the means of three groups: I compared student age versus attitude and parent education background versus parent engagement. A t-test was used to compare teacher gender versus role.

## CHAPTER 4

### RESULTS

#### 4.1 Introduction

This chapter presents the results and discusses the data. Collected data, following Chapter 3, was used answer the research questions:

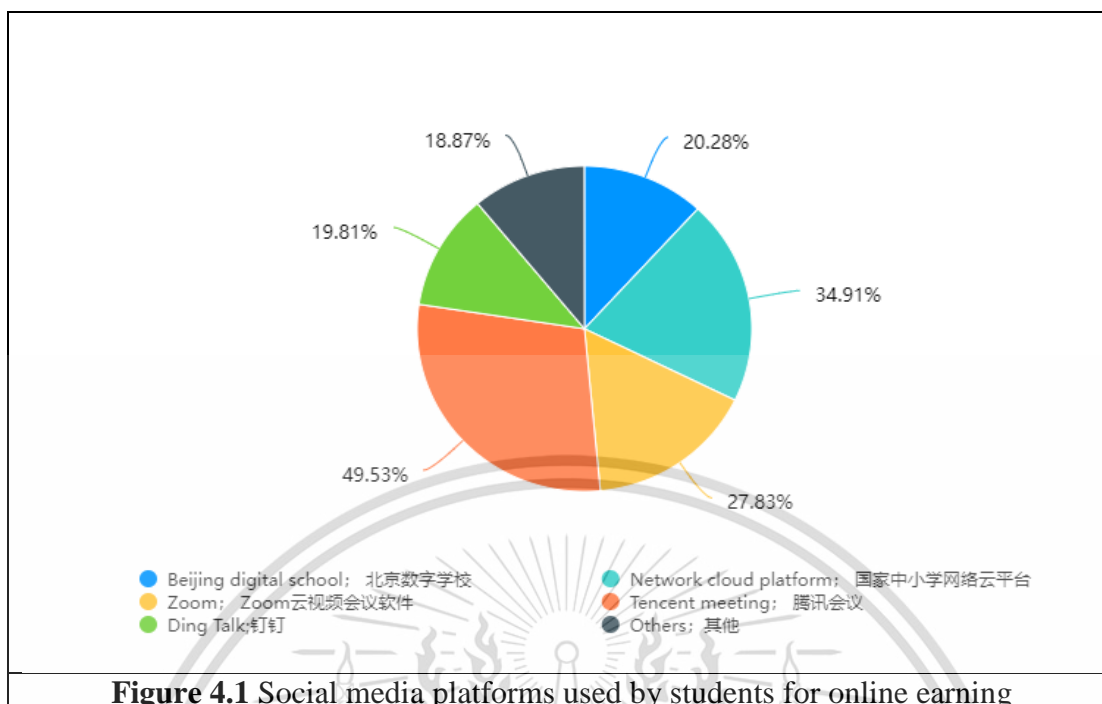
- (1) What attitudes do students have in primary school?  
Does student age affect attitudes?
- (2) What were teacher roles?  
Does gender effect on their roles?
- (3) What was the parent engagement with online learning?  
Was parent engagement affected by education level?

#### 4.2 Basic Demographics of Participants

Data from each questionnaire, participants' number, gender, count, and fraction were recorded.

**Table 4.1** Participant gender(n=500)

Item	Number	Gender	Count	Fraction
Students	212	Female	129	61%
		Male	83	39%
Teachers	182	Female	107	59%
		Male	75	41%
Parents	106	Female	71	67%
		Male	35	33%
<b>Total</b>	<b>500</b>		<b>500</b>	<b>100%</b>



**Figure 4.1** Social media platforms used by students for online learning

Figure 4.1 shows the platforms used by student; the pie chart show that Tencent meeting, at more than 49%, was the most popular online learning platform. However, four others were preferred by large groups of others (20% or more), so there was apparently little difference between the platforms in accessibility or ease of use.

It determined the online learning platforms which were used, there were many online learning tools available in the market in China. Users can choose their favorite and convenient tools to keep online learning.

### 4.3 Quantitative data

#### 4.3.1 Analysis of student attitudes

The students were divided into three groups based on their ages.

**Table 4.2** Student ages (n = 212)

Item	Number	Age	Frequency	Percentage
Students	212	6-8years	30	14%
		9-12years	103	49%
		Over12	79	37%
<b>Total</b>			<b>212</b>	<b>100%</b>

Table 4.2 shows that there were 212 student participants, most of them were 9-12years old, accounting for 49%.

**Table 4.3** One-way ANOVA comparing ages and attitudes of students (n=212)

ANOVA												
	N		$\bar{x}$	S.D.	Sum of Squares	Mean Square	F	df <sub>1</sub>	df <sub>2</sub>	Sig.	Post Hoc Tests	
Personal factors	6-8	30	3.2	1.1	Between Groups	4.94	2.47	5.48	2	209	0.005	
	9-12	103			Within Groups	94.10	0.45					6-8<9-12
	>12	79			Total	99.03						
Online vs classroom learning mode	6-8	30	3.2	1.1	Between Groups	0.88	0.44	1.38	2	209	0.255	
	9-12	103			Within Groups	67.16	0.32					No
	>12	79			Total	68.04						
Student attitude	6-8	30	3.3	1.1	Between Groups	0.45	0.22	0.48	2	209	0.618	
	9-12	103			Within Groups	96.78	0.46					No
	>12	79			Total	97.23						
Technology skills	6-8	30	3.3	1.1	Between Groups	0.52	0.26	0.57	2	209	0.569	
	9-12	103			Within Groups	96.32	0.46					No
	>12	79			Total	96.84						

Note: Distributions were highly skilled, so S.D. values should be considered only a weak indicator of variance.

Table 4.3 shows the ANOVA results conducted to determine the students' attitude in online learning during the pandemic, the first part of question items, it means to survey students' personal factors in online learning. personal factor (F=5.48) reported that the tasks were significantly ( $p = .005$ ). It fluctuates more between groups than within groups.

The second part of question items shows statistically significant differences in online VS classroom learning mode. between group ( $M=0.44$ ), within groups ( $M=0.32$ ), there was little fluctuation between and within groups.

The third part of question items, it was survey students' online learning attitude. The data shows the ANOVA results conducted to determine the students' attitude between the different age. A significant difference was found ( $F=0.48$ ,  $\text{sig}=0.618 > 0.05$ ), there is no significant between groups than within groups.

In the last section of the questionnaire, ANOVA was used to assess any differences in students' technology skills: the results -  $F=0.57$ ,  $\text{sig}=0.569 > 0.05$  – meant there was little difference between the age groups.

Significant differences were found in the post hoc tests, 6-8 years, 9-12 years and over 12 years. The 6-8 years result was attributed to the sensitivity of this age group, a foundational stage for students. These students lack independent learning skills; therefore, their personal factors affect their online learning. So that younger students had lower attitudes ( $\text{sig}=0.005$ ,  $p < 0.05$ ) with a 95% confidence interval. The other group comparisons were not significant ( $p > 0.05$ ).

#### 4.3.2 Findings from the questionnaires

Mean scores for the individual personal factor questions are set out in Table 4.4.

**Table 4.4** Student attitudes during online learning (n=212)

Question Items	$\bar{x}$	S.D.	Level of Agreement
<b>Personal factors Items</b>			
1. Lack of computer skills makes me uncomfortable during online classes	3.3	1.1	Moderate
2. I feel more comfortable to participate in online class discussions compared to classroom	3.1	1.1	Moderate
3. I find it difficult to understand and follow online classes	3.0	1.0	Moderate
4. I feel less anxious in online classes.	3.4	1.1	Moderate
5. I get easily distracted and have difficulty concentrating during online classes.	3.4	1.1	Moderate
6. I feel lazy and disinterested during online classes.	3.2	1.1	Moderate
7. Difficult to keep classes for longer duration during online classes	3.4	1.1	Moderate
8. I feel lack of motivation to take online classes.	3.0	1.1	Moderate
<b>Total</b>	<b>3.2</b>	<b>1.1</b>	<b>Moderate</b>

**Table 4.4** Student attitudes during online learning (n=212) (cont.)

<b>Online vs classroom learning mode items</b>			
9. Online classes are more effective than classroom mode	3.0	1.1	Moderate
10. Online classes are fun and interactive than classroom method	2.9	1.1	Moderate
11. Online learning is child-friendly	3.0	1.1	Moderate
12. Online learning helps to distract students from the pandemic	3.1	1.1	Moderate
13. Online learning helps me to engage with lessons	3.4	1.1	Moderate
14. Online learning is useless for us with special educational needs	3.0	1.1	Moderate
15. Online classes are more effective than classroom mode	3.0	1.1	Moderate
16. There is lack of interaction during online classes	3.5	1.1	Agree
17. Online classes are more convenient than classroom method	3.3	1.1	Moderate
18. Online classes save time.	3.4	1.1	Moderate
19. Online classes are less structured than classroom mode	3.2	1.1	Moderate
<b>Total</b>	<b>3.2</b>	<b>1.1</b>	<b>Moderate</b>
<b>Student attitude items</b>			
20. I enjoy using online platform for my studies	3.2	1.0	Moderate
21. I was interested in studying courses that use online learning	3.1	1.0	Moderate
22. I feel confident in using computers	3.5	1.1	Agree
23. I feel that online learning gives me the opportunity to acquire new knowledge	3.3	1.1	Moderate
24. I believe that online learning enhances my learning experience	3.2	1.1	Moderate
<b>Total</b>	<b>3.3</b>	<b>1.1</b>	<b>Moderate</b>

**Table 4.4** Student attitudes during online learning (n=212) (cont.)

<b>Technology skills items</b>				
25	Technology gives me access to wide range of learning materials.	3.4	1.0	Moderate
26	Technology keeps me connected to the courses I am enrolled in.	3.4	1.0	Moderate
27	Technology will help me to complete my work faster	3.3	1.1	Moderate
28	Technology makes learning creative.	3.5	1.1	Moderate
29	Technology will enable me to take control of my learning.	3.2	1.1	Moderate
30	Technology will help me to produce quality work.	3.3	1.0	Moderate
31	Technical issues disrupt the flow and pace of online classes.	2.8	1.0	Moderate
<b>Total</b>		<b>3.3</b>	<b>1.1</b>	<b>Moderate</b>

In Table 4.4, in the personal factors group, responses for all the factors were moderate; only item 7, “Difficult to keep classes for longer duration during online classes”, had a stronger response ( $\bar{x} = 3.4$ ). It showed students felt it more difficult to keep online classes for longer times than traditional classes.

In the second part of this questionnaire, online classes versus traditional classes mode, most respondents generally agreed (moderate response); only item 16, “There is lack of interaction during online classes” had a strong agreement ( $\bar{x} = 3.5$ ), this implied that online classes had limited interaction between students and teachers.

In the student attitude questions there was general agreement (moderate response). Only for item 22 “I feel confident in using computers” ( $\bar{x} = 3.5$ ), agreement was stronger.

The last section investigated student technology skills; again they generally agreed (moderate responses): this showed that students had similar technology skills. Only item 28 “Technology makes learning creative” showed significantly stronger agreement ( $\bar{x} = 3.5$ ). Thus, I concluded that there was little difference in technology skills between students of different ages.

## 4.3.3 Analyzes of Teachers' role

**Table 4.5** Teacher gender (n = 182)

Item	Number	Gender	Frequency	Percentage
Teachers	182	Female	107	59%
		male	75	41%
<b>Total</b>			<b>182</b>	<b>100%</b>

As expected, in primary schools, most teachers were female, like the situation in many other countries.

**Table 4.6** Gender with teachers' role T-test (n = 182)

Teacher role	Gender		Result							
	IV	N	$\bar{x}$	S.D.	Levene's Test		t	df	Sig.	
DV					F	Sig.				
Learning activity online teaching	male	75	182	3.7	0.9	0.43	0.51	0.1	180	0.46
	female	107	182	3.7	0.9					
Personal factors in online teaching	male	75	182	3.5	0.5	6	0.02	0	121	0.5
	female	107	182	3.5	0.8					

N = Number of teachers;  $\bar{x}$  = Mean; S.D. = standard deviation; Sig = at 0.05 level

Table 4.6 shows significant differences in teachers' personal factors in online teaching in online teaching with the teacher's gender, learning activity online teaching compare teacher gender, using Levene's test, (F=0.43), sig was 0.51, t-test P-value was also 0.46, i.e., Sig>0.05. Hence, teacher gender had no influence on learning activity in online teaching.

However, in personal factors in online teaching, for Levenne's test, sig = 0.02 < 0.05, for the t-test Sig was 0.5>0.05. Thus, gender had an impact on personal factors in online teaching.

**Table 4.7** Teacher role: mean ( $\bar{x}$ ) and standard deviation (S.D.) (n = 182)

Question Items	$\bar{x}$	S.D.	Level of Agreement
<b>Learning activity online teaching items</b>			
1. Lack of computer skills made it difficult for me to use the online teaching	3.7	1.2	Agree
2. Lack of supporting for pupils with special needs or disabilities	3.9	1.1	Agree
3. Lack of teacher-student interaction in online classes	4.0	1.1	Agree
4. Lack of use innovative teaching methods	3.5	1.2	Moderate
5. Lack of interest and involvement during online teaching	3.7	1.1	Agree
6. Lack of work satisfaction while teaching online	3.7	1.2	Agree
7. Lack of technical issues effected the flow and pace of online teaching	3.8	1.2	Agree
8. Lack of organized students to participate discussion and answer questions in online class	3.6	1.2	Agree
<b>Total</b>	<b>3.7</b>	<b>1.2</b>	<b>Agree</b>

**Table 4.7** Teacher role: mean ( $\bar{x}$ ) and standard deviation (S.D.) (n = 182) (cont.)

<b>Personal factors in online teaching items</b>			
9. It was my first experience with online teaching	3.3	1.4	Moderate
10. I had some experience with online teaching	3.3	1.2	Moderate
11. I haven't had any experience with online learning	3.1	1.2	Moderate
12. As a teacher, I think online teaching was flexible	3.3	1.1	Moderate
13. I think online classes help me to use innovative teaching methods	3.3	1.1	Moderate
14. I can use wide range of tools for online teaching	3.3	1.2	Moderate
15. I can give feedback on student progress in time	3.6	1.1	Agree
16. I can make the students want to cooperate with me	3.5	1.0	Moderate
17. It is difficult to keeping all pupils motivated and engaged	4.0	1.0	Agree
18. It was difficult to keep classes for longer duration during online classes	4.0	1.1	Agree
19. It is difficult to control group interaction during online classes	3.9	1.1	Agree
20. It is difficult to communicate with parents or caregivers	3.7	1.1	Agree
<b>Total</b>	<b>3.5</b>	<b>1.1</b>	<b>Agree</b>

Table 4.7 showed for learning activity online teaching, teachers generally agreed, the items mean was ( $\bar{x}$  =3.7). Many teachers' participants noted "lack of teacher-student interaction in online classes" ( $\bar{x}$ =4.0), the second problem was "Lack of support for pupils with special needs or disabilities" ( $\bar{x}$ =3.9).

In the next part, the table shows the result for teachers' personal factors in online teaching, responses for all the factors were agree. Item 17 and Item 18 had a strong agreement ( $\bar{x}$  =4.0) "It is difficult to keeping all pupils motivated and engaged". Many teachers felt that it was difficult to keep classes for longer times during online teaching. They were also difficult to keeping all pupils motivated and engaged in online teaching.

## 4.3.4 Analyses of parent's engagement

**Table 4.8** Parent education level (n=106)

Item	Number	Education background	Count	Percentage
Parents	106	College(diploma)	28	26%
		Bachelor	51	48%
		Master	22	21%
		Doctor	5	5%
<b>Total</b>			<b>106</b>	<b>100%</b>

Table 4.8 shows that a large proportion of primary school students' parents had a bachelor's degree or higher.

**Table 4.9** One-way ANOVA for parents' engagement (n = 106)

		ANOVA					
		Sum of Squares	Mean Square	F	df <sub>1</sub>	df <sub>2</sub>	Sig.
Parents' factors	Between Groups	5.95	1.98	7.64	3	102	<0.01
	Within Groups	26.48	0.26				
	Total	32.43					
Parents' engagement	Between Groups	2.59	0.86	2.23	3	102	0.09
	Within Groups	39.59	0.39				
	Total	42.18					

As the table 4.9 we can see, compare two groups of participants with differences education background. A one-way ANOVA was performed to compare the effect of four different education background parents, it revealed that there was a statistically significant difference in mean exam score between at least two groups ( $F(3, 102) = [7.64], p = 0.00$ ). P-values result was 0.00. Sig < 0.05 implied that parents education background influenced parent personal factors, for instance, care about their children's academic performance, physical and mental health.

Parent engagement data showed ( $F(3, 102) = [2.23], p = 0.09$ ). The P-values result was 0.09. Sig = 0.09 > 0.05 implied that parent education background did not influence parent engagement.

**Table 4.10** Multiple comparisons between parents' factor vs education background

Multiple Comparisons							
Dependent Variable	Education background		Mean Difference	Std. Error	Sig.	95% Confidence Interval	
						Lower	Upper
Scheffe	Diploma	Bachelor	0.10	0.12	0.87	-0.24	0.44
		Master	0.24	0.15	0.45	-0.17	0.65
		Doctor	-0.94*	0.25	0.00	-1.65	-0.24
	Bachelor	Diploma	-0.10	0.12	0.87	-0.44	0.24
		Master	0.14	0.13	0.78	-0.23	0.51
		Doctor	-1.05*	0.24	<i>ns</i>	-1.73	-0.37
	Master	Diploma	-0.24	0.15	0.45	-0.65	0.17
		Bachelor	-0.14	0.13	0.78	-0.51	0.23
		Doctor	-1.18*	0.25	0.00	-1.90	-0.47
	Doctor	Diploma	0.95*	0.25	<i>ns</i>	0.24	1.65
		Bachelor	1.05*	0.24	<i>ns</i>	0.37	1.73
		Master	1.18*	0.25	<i>ns</i>	0.47	1.90

\* Mean difference was significant at the 0.05 level.  
*ns* = not significant, <0.005

Table 4.10 shows significant differences in the multiple comparisons – diploma, bachelor, master and doctoral degrees. Doctoral degrees were significant, parents at this level favored engagement; therefore, their personal factors affected that engagement. Other education backgrounds had only minor effects ( $p > 0.05$ ).

**Table 4.11** Parent factors and engagement during online learning (n = 106)

Question Items	$\bar{x}$	S.D.	Level of Agreement
<b>Parents' factors items</b>			
1. Do you think your child should spend less time learning in person at school right now?	2.6	1.2	Moderate
2. Do you think your child should spend more time on learning	3.6	1.0	Agree
3. Are you satisfied with the way learning is structured at your child's school right now?	3.4	1.0	Moderate
4. Is it difficult for your child to use the distance learning tools (video calls, learning applications, etc.)?	3.3	1.0	Moderate
5. Are you confident in your ability to support your child's education during distance learning?	3.5	1.0	Agree
6. Are you confident that teachers can motivate students to learn in the current model?	3.5	1.0	Moderate
7. You can accompany your children to study every day	3.4	1.0	Moderate
8. You are care about your children's academic performance	4.2	0.9	Agree
9. You are care about your child's physical and mental health	4.5	0.8	Strongly agree
10. What is your attitude towards strengthening the cooperation between family and school?	4.2	0.9	Agree
11. Do you agree with the teacher's educational behavior?	3.8	0.9	Agree
12. Your opinion of the teachers' working methods is very good	3.6	0.9	Agree
<b>Total</b>	<b>3.6</b>	<b>0.9</b>	<b>Agree</b>

**Table 4.11** Parent factors and engagement during online learning (n = 106) (cont.)

This material is reserved for educational use only, not allowed for commercial use.

Forbidden to modify the content, and cite the document when use.

<b>Parents' engagement online learning items</b>			
13. You agree with "parental involvement in education"	4.2	0.7	Agree
14. Do you agree with parent school or parent committee establish in the child's school?	4.0	1.0	Agree
15. Do you think the main role of parental engagement in education is to promote children's learning?	4.0	1.0	Agree
16. Do you think the main role of parental engagement in education is to promote school management?	3.7	1.0	Agree
17. The way you get involved in your child's education is through daily family education	4.0	0.8	Agree
18. The way you get involved in your child's education is by talking to the teacher	3.7	1.0	Agree
19. The way you get involved in your child's education is participating in school-related activities with your child	3.6	1.0	Agree
20. You don't know much about your involvement in your child's education	2.7	1.1	Moderate
<b>Total</b>	<b>3.7</b>	<b>0.9</b>	<b>Agree</b>

Table 4.11 showed the result of parents' factors during online learning. From this part, total mean was ( $\bar{x}$  = 3.6), the level was agreed. The top 2 items, that had the highest level of agreement, were item 9 "You are care about your child's physical and mental health" ( $\bar{x}$  = 4.5), it was at a highest-level agreement than other items. and item 10 "What is your attitude towards strengthening the cooperation between family and school" ( $\bar{x}$  = 4.2). The majority of parents cared about those issues.

In the second sections, the overall mean score of the Parents' engagement was 3.7, the level was agreed. It also can be concluded that items 13 had a strongest response ( $\bar{x}$  = 4.2). That means most of the parents were agree with parental involvement in education, agree with parent school or parent committee establish in the child's school, the main role of parental engagement in education is to promote children's learning.

#### 4.4 Qualitative Research

##### 4.4.1 Open-ended questions on students' attitude

(1) How difficult or easy was it to use the distance learning technology (computer, tablet, video calls, learning applications, etc.)?

About half of the students thought it was easy to use the distance learning technology, on the other hand, primary school student has enough technology skills, it was good for their online learning. During the lock down, classes were suspended but

learning continued, online learning ensured that students complete their study tasks on time. With the support of technology, so that students can learn happily and efficiently.

#### 4.4.2 Open-ended questions on teachers' role

(1) Please describe what has been the hardest part of moving your classes online?

Most teacher thought that communication and interaction was the hardest part in online classes. The teachers could not see the students when they lecture to the camera. Without interaction, they did not know whether the students could understand and they could not give timely feedback. (Castro & Tumibay, 2021) found that in online teaching, teachers did not have the same time control class as face-to-face teaching, and students tended to ignore their teachers' guidance and misunderstand.

Schlossberg et al., (1989) noted that one of the keys to successful teaching lay in timely interaction between learners. Teachers should be able to obtain feedback from students in a timely manner and enable learners to continue to participate in an interactive process. In fact, interaction was the basic feature of establishing a connection between teachers and students. Teachers passed their own educational ideas, concepts, attitudes, and methods to students through interaction, and students assimilated and absorbed this knowledge and ideas better through interaction and then integrated it into their own knowledge structure.

#### 4.4.3 Open-ended questions of parents' engagement

(1) What do you think are the responsibilities of parent and teachers in the growth of your children?

Parents gave different answers, many parents thought guidance, supervision, and accompanying the children was important responsibilities. Children in grade one to three were from 6-8 years old. They needed parent supervision in online learning, they were not able to learn independently. According to (Dewanggi et al., 2012), independence builds on the mixed development of children's lives, intended to shape a better human being, because independence empowers children to become innovators, creators and future self-starters. It is a long-term process that needs to be developed from an early age.

Emerson et al., (2012) stated that parental supervision of children's learning activities depended on parental engagement to establish, not only about parents deciding to assist their children learning is also related to children's academic performance.

Novianti (2018) stated that parents need to spend more time with their children, to hear their stories and ideas: "Help your child to feel appreciated, understand their emotions, and as far as possible help your child solve the problems what they are facing." That's a great way to accompany with children.

## CHAPTER 5

### CONCLUSIONS

This chapter were present (1) Summary of the study, (2) Summary of the findings Conclusions, (3) Discussion, (4) Conclusion, (5) Recommendations, (6) Limitations.

#### 5.1 Summary of the study

##### 5.1.1 The objectives of the study:

This study aimed to explore the students' attitude, teachers' role, parents' engagement during online learning and online teaching. The objectives of this study are:

- (1) To survey student attitudes and compare student attitude vs age.
- (2) To study teacher roles and to find whether gender affected their roles.
- (3) To explore parents' engagement and to compare the effect of parents' education background.

##### 5.1.2 The research questions:

- (1) What attitudes do students have in primary school?  
Does student age affect attitudes?
- (2) What were teacher roles?  
Does gender effect on their roles?
- (3) What was the parent engagement with online learning?  
Was parent engagement affected by education level?

##### 5.1.3 Participants of the study

In this study, the participants were separated to three group, the first group was primary school students, they come from grade one to grade six, from six to twelve years old. The second group was primary school teachers, they teach math, English, Chinese, or physical. The last group was primary school students' parents.

##### 5.1.4 Research instruments

This research instruments were questionnaires. Three kinds of questionnaires can be used to different participants. Each of the questionnaire was divided into three parts: the participance basal background information, the participance personal factors and attitude towards online learning-teaching, open-ended questions to survey their own opinion focus on online learning and teaching.

### 5.1.5 The research procedures

Online learning: An E-learning environment, using platform obtain knowledge, skills. Make sure the learners' learning schedule on time in each semester.

Primary school students: First grade to six-grade students in public primary school in China, whose ages range from 6 to 13 years.

Teachers: The teachers were all from primary school, they were male and female teachers, and teach different subjects in public primary school in capital of China.

Parents: The primary school students' father, mother, grandparents, or guardian. They are responsible for their children in primary school in China, as well as for their learning affairs at homes during online learning period.

## 5.2 Summary of the findings

### 5.2.1 Demographic data of the participants

The study was conducted at a public primary school in Beijing Changping district of China. With 212 students, 6-8years were 30(14.15%), 9-12years were 103(48.58%), over 12years old were 79(37.26%). 182 teachers were including 107 females (58.79%), and 75 males (41.21%). with 106 parents, diploma's degree was 28(26.42%), bachelor's degree was 51(48.11%), master's degree was 22(20.75%), doctor's degree was 5(4.72%). The purpose of this study was to evaluate the opinions of online learning on students, parents, and teachers at primary school during the COVID-19 pandemic. the summary of data sources and analysis methods can be found in table 5.1.

**Table 5.1** Summary of data collection and data analysis used in this study

Research Questions	Sources of Data	Analysis Methods
1. What attitudes do students have in primary school? Does student age affect attitudes?	- Questionnaires for 212 primary students, they were from 6-8,9-12, over 12 years old in a public school	- Mean, S.D. -One-way ANOVA
2. Assess teacher role and the effect of teacher gender on their roles?	- Questionnaires for 182 teachers, they were female and male.	- Mean, S.D. -T-test
3. Was parent engagement affected by parent education background?	- Questionnaires for 102 parents, they were all have different education background	- Mean, S.D. -One-way ANOVA

### 5.2.2 The students' attitudes towards online learning

The findings revealed that there was the top item "There is lack of interaction during online classes". Connectivism learning theory takes teacher-student interaction

as the main learning form, and its interactive structure has changed from the original one-to-one, one-to-many interaction to many-to-many interaction; learners become producers of knowledge, and teachers become facilitators of learner interaction. Play the role of filtering or amplifying information, promoting pathfinding, curating, etc., and guiding the healthy development of the learning network.

The research team of Beijing Normal University found that in the initial stage of Connectivism learning, the curriculum community has the characteristics of traditional learning orientation, that is, the teacher is the core, and the teacher is the node with the highest influence in the interaction process. With the deepening of the interaction process, learners began to spontaneously form small groups, and teachers gradually retreated behind the scenes. Multiple core learners became the core nodes of each sub-community, and their network status and influence surpassed teacher nodes (远程教育研究中心, 2022).

The finding of revealed second items was “I feel confident in using computers”. The trend of social development is unstoppable, and only by actively adopting new technologies we cannot fall behind the Times. Jared Mason Diamond, an American professor of physiology, points out that different societies have different levels of acceptance of new technologies. As Western technology spreads, more innovative societies are using it to conquer their more conservative neighbors, and those that are more receptive to new technology tend to have an advantage. The same as teachers, who should have an open mind about the development of technology. Using technology by actively, teachers can effectively meet their own development needs. In fact, the powerful advantage of technology is not to replace teachers, but to realize the liberation of people from tedious work. Technology simplifies complex work, helps teachers to enrich teaching and obtain more information, and completes teaching work with high quality and efficiency(Zhang, 2019b).

### 5.2.3 The teachers' role in online teaching at primary school.

The findings revealed that the top item about teacher's personal factor was “It was my first experience with online teaching”. Online teaching during the epidemic was a major test for China's education system. Some teachers have rich teaching experience in traditional face-to-face class, but lack of experience in online teaching. Professor Yuan Zhenguo from East China Normal University believes that the layout of the education system in the country and the world will inevitably be reorganized, and the quality of teachers will inevitably be improved. The way of teaching and learning will inevitably change(Yuan, 2017).

The findings revealed that the second item is “lack of work satisfaction while taking online teaching”. Someone said that online teaching is both heaven and hell. If you teach very well, you will have a sense of accomplishment; if you teach poorly, you will feel upset. Online teaching was not simply putting face-to-face classes on the

internet. The traditional classroom teaching model is not acceptable. Teachers need to make full preparations for online teaching. In online teaching, the teachers should focus on teaching method. For example, Question-and-Answer section, let students join actively, answer questions, and help students keep concentrate in online class.

Hong et al., (2021) found that with the advent of COVID-19, teachers' satisfaction dropped and quickly fell into emotional exhaustion during online teaching. Furthermore, (Beames et al., 2021) study showed that the psychological status of Australian teachers was affected between September 2020 and October 2020. Numerous studies have shown that teacher satisfaction has declined with the outbreak of COVID-19, despite some factors that cannot be controlled (Li & Yu, 2022).

#### 5.2.4 The parents' engagement during online learning.

The finding revealed the top item of parents' personal factor was "You are care about your child's physical and mental health." Schools should provide training for parents and learners, so that they are familiar with new instructional model and theory of child psychology, to help children achieve the expected learning outcome.

Many studies have found that mental health can positively predict academic performance(Datu, 2018); (Park et al., 2011); (Xiang et al., 2017); (Ying nan Zhou & Chong-zeng BI, 2017), and that people with mental health have better academic performance; while some studies Poor mental health has been shown to be associated with higher academic achievement (Jhang, 2017); (Vaez & Laflamme, 2008). In addition, many studies have shown that mental health has no significant effect on academic performance(Marques et al., 2011);(魏 & 黄, 2011). Overall, despite studies of the mixed relationship between mental health status and academic performance, the purpose of this investigation was to determine whether mental health did indeed play a role in the context of the COVID-19 pandemic (J.-K. Wang et al., 2023).

### 5.3 Discussion

After collecting and analyzing the quantitative and qualitative data obtained from 212 students, 182 teachers and 106 parents. the findings revealed students age impact their personal factors, teachers' gender has impact on personal factors in online teaching. The parent's education background influences their engagement during online learning period. We discussion the kay finding in three main parts bases on research questions as follow:

#### 5.3.1 Discussion on student attitude and student age

The survey of a Chinese public primary school students who took online class during the COVID 19 pandemic. The study of student attitudes was not only beneficial for teacher understand their student learning outcomes, but also leads us to learn how to choose suited teach methods and teacher's role.

According to investigation we found that many students feel confident in using computer, online learning can help them to engage lessons. In addition, student attitude can have a powerful impact on learning behavior. It has been proved by many experimental studies, MacDougai and Smith found in an experiment as early as 1919 (cited in Zhang(2019a)) that a positive learning attitude can promote learning speed. In 1952, when carry summarized an experimental study, he pointed out that the different attitudes of male and female college students to problem solving directly affect the effect of problem solving (Zhang, 2019a).

Regarding student's age effect student attitude, compare 6-8years and 9-12 years old students, it indicated that there was significance different between three groups of participants.

### 5.3.2 Discussion on teacher's role and teacher's gender

The results showed that 59% participants were female teachers in this study. Research paid attention to gender differences in teachers stems from the imbalance in the gender ratio of teachers. Indian researcher, Sandrastacki believed that the academic performance of students was related to the female teachers in the classroom. Male and female teachers have different views on students' learning ability, and the classroom of female teachers was particularly beneficial to students' language learning. In 2006, Stanford University professor, Thomas (cited by Wang, 2015) found that the gender of teachers did have a certain impact on students' academic performance, that is, girls' grades more easily improved in classes with female teachers, while boys' learning abilities in language and other aspects was limited to a certain extent. Boys performed better than girls in female teachers' classrooms. At the same time, he found that students' interest in learning was also affected by teachers' gender factors. Female teachers were less likely to think that girls were not disciplined, and that boys were not paying enough attention in class. However, as cited by Wang (2015), Dee's views were questioned by Weaver, president of the American Education Association, who believed that teacher experience and the quality of textbooks were the main factors affecting student grades. In this regard, Dee emphasized that his conclusions should not be oversimplified, and he hoped that more scholars would pay attention to and devote themselves to research of this topic (Wang, 2015).

Research by (UNESCO Principal Regional Office for Asia and the Pacific, 2000) demonstrated that female teachers teaching children had better results than male teachers. Female teachers were described as more patient, compassionate, gentle and good at discussion with students (Stake & Katz, 1982). (Simpson & Erickson, 1983) also supported their finding, showing that female teachers gave students more verbal and non-verbal recognition than male teachers. (Carrington & Skelton, 2003) believed that a teaching career helped to break down stereotypes and prejudices, men who were

teachers may still face different issues, such as hostility and suspicion in their workplaces because teaching is still largely perceived as a female task.

On the other hand, gender impacted teacher behavior. (Antecol et al., 2015) found that female teachers may affect student learn out comes as they may have higher math anxiety (particularly in elementary schools) which may negatively influence students. In addition, female teachers may structure their classes differently, choose topics, and provide examples differently than male teachers.

### 5.3.3 Discussion on parent engagement and parent education background

In my study, parents confirmed that they agreed to participate and study their engagement. About 48% parent participants had bachelor's degree, just under half of the parent sample. In summary, numerous parents cared about their children's psychological health, academic performance and the cooperation with schools' management, parent education background influencing parent engagement.

That was consistent with Chinese studies, since the 1980s, Chinese researchers have studied parental engagement in education and scientific research gradually developed. However, there are obvious deficiencies in research on parental participation in education in China, both theoretically and empirically: for example, there were many studies focusing on parent engagement and children's performance, but there a lack of research on children's personality, life, and psychology, which are closely related to children's academic achievement, remains. In addition, researchers should also focus on home-school cooperation to create a harmonious and pleasant learning environment for children (Pan, 2010).

Andersson (2002) identified the negative factors in the family, such as illiteracy, low involvement in the children's school, low socioeconomic status and lack of time for the children, which are the main causes of student failure at school. (Howard, 2004) revealed that student socialization and learn outcome on tests were not fully correlated with parental educational status, but student tours and home tutoring facilities contribute very positively. Parents' education can explain children's education because parents and children's education are closely related. Parental educational achievements tend to enhance positive behavior in student learning. The level of confidence of parents was related to their mastery of certain cognitive skills and the previous general educational experience (Idris et al., 2020).

## 5.4 Conclusion

The purpose of this study was to investigate student attitude, teacher's role, parent engagement, the quantitative and qualitative data was both used. In conclusion, it can be issued the opinion of online learning on students, parents, and teachers at primary school during the COVID-19 pandemic.

Concerning the primary school student attitude towards online learning, the results of questionnaire should that most of students agreed that it is difficult to keep classes for longer duration during online classes, on the other hand, online classes can save time than traditional classes. To survey student's IT skill, most of them feel confident in using computer. Moreover, technology makes learning creative.

Concerning the teacher's role in online teaching, the result indicated that many teachers consider it was lack of teacher- student interaction in online classes, and also difficult to keeping all pupils motivated. It means that online teaching also requires innovative teaching methods.

Related to parent engagement based on learning at home, the result of the questionnaire indicated that majority parent care about your child's physical and mental health, most of parent agree with "parental involvement in education"

## **5.5 Recommendations**

### **5.5.1 Recommendations for implementing.**

Due to the reality of this research was conducted with small group of participants, the results cannot be generalized to represent all Chinese primary school students, teachers, and parents' perceptions towards students' attitude, teachers' roles, and parents' engagement. These findings need to be validated with different participant groups, student learning attitudes, teacher roles and parent involvement during online classes.

### **5.5.2 Recommendations for further study**

In addition, further research should investigate the various roles that teachers may play in constructivism to improve students' learning attitudes and find ways to cope with them. Finding differences between students and teachers and find out how to improve student awareness of the use of social media, technique or online learning platforms for learning percept, especially self-directed learning.

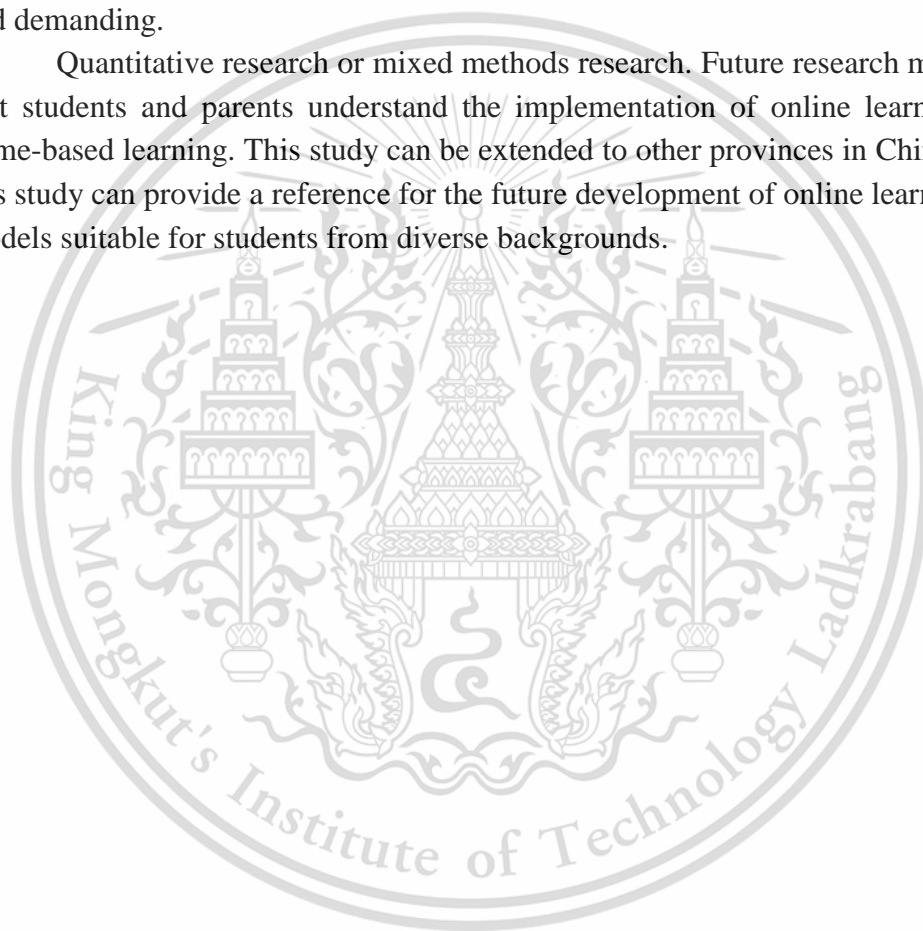
This study only used questionnaires as the main instrument, thus it did not cover all perspectives of the participants. Further research should use semi-structured interviews to find the parent engagement in different way.

I used survey research to investigate primary school student attitudes, focused on online learning during the COVID-19 pandemic, maybe the younger students could not express their ideas in open-ended questions. Further study should observe the participants or use depth interviews and experiment, but also evaluate student attitudes towards online learning from multiple levels and perspectives.

## 5.6 Limitations

This study used qualitative research and quantitative research, designed three questionnaires with closed questions and open-ended questions, explore the primary school online classroom, students' learning attitude, teachers' role in online teaching, parents' participation in children's home learning, combined with the above three points of personal views and opinions. During the COVID-19 pandemic in 2020, this study, like all studies, has limitations. This study is a small-scale survey conducted among primary schools with online teaching, students, teachers, and parents, in a public primary school in China. To this end, future research needs to be more comprehensive and demanding.

Quantitative research or mixed methods research. Future research may address that students and parents understand the implementation of online learning during home-based learning. This study can be extended to other provinces in China. Finally, this study can provide a reference for the future development of online learning course models suitable for students from diverse backgrounds.



## REFERENCES

- Abid, T., Zahid, G., Shahid, N., & Bukhari, M. (2021). Online Teaching Experience during the COVID-19 in Pakistan: Pedagogy–Technology Balance and Student Engagement. *Fudan Journal of the Humanities and Social Sciences*, *14*(3), 367–391. <https://doi.org/10.1007/s40647-021-00325-7>
- Aiken, L. R. (1970). Attitudes Toward Mathematics. *Review of Educational Research*, *40*(4), 551–596. <https://doi.org/10.3102/00346543040004551>
- Akben-Selcuk, E., & Altiok-Yilmaz, A. (2014). Financial Literacy among Turkish College Students: The Role of Formal Education, Learning Approaches, and Parental Teaching. *Psychological Reports*, *115*(2), 351–371. <https://doi.org/10.2466/31.11.PR0.115c18z3>
- Aldhafeeri, F. M., & Khan, B. H. (2016). Teachers' and Students' Views on E-Learning Readiness in Kuwait's Secondary Public Schools. *Journal of Educational Technology Systems*, *45*(2), 202–235. <https://doi.org/10.1177/0047239516646747>
- Anderson, T. (Ed.). (2008). *The theory and practice of online learning* (2nd ed). AU Press.
- Andersson, G. (2002). Children's experience of family disruption and family formation: Evidence from 16 FFS countries. *Demographic Research*, *7*, 343–364. <https://doi.org/10.4054/DemRes.2002.7.7>
- Antecol, H., Eren, O., & Ozbeklik, S. (2015). The Effect of Teacher Gender on Student Achievement in Primary School. *Journal of Labor Economics*, *33*(1), 63–89. <https://doi.org/10.1086/677391>
- Bagriacik Yilmaz, A. (2019a). Distance and Face-To-Face Students' Perceptions Towards Distance Education: A Comparative Metaphorical Study. *Turkish Online Journal of Distance Education*, *20*(1), 191–207. <https://doi.org/10.17718/tojde.522705>
- Bagriacik Yilmaz, A. (2019b). Distance and Face-To-Face Students' Perceptions Towards Distance Education: A Comparative Metaphorical Study. *Turkish Online Journal of Distance Education*, *20*(1), 191–207. <https://doi.org/10.17718/tojde.522705>
- Beames, J., Christensen, H., & Werner-Seidler, A. (2021). School teachers: The forgotten frontline workers of Covid-19. *Australasian Psychiatry*, *29*, 103985622110061. <https://doi.org/10.1177/10398562211006145>
- Bloom, B. (2008). The New Direction in Educational Research: Alterable Variables. *Asia Pacific Journal of Education - ASIA PAC J EDUC*, *6*, 1–6. <https://doi.org/10.1080/02188798408548567>

## REFERENCES (cont.)

- Boi, B. L. (2020). *The influence of home environment on learning achievements among students' in public day secondary schools in Mbulu town council-Tanzania*. <http://repository.udom.ac.tz/handle/20.500.12661/2662>
- Carrington, B., & Skelton, C. (2003). Re-thinking 'role models': Equal opportunities in teacher recruitment in England and Wales. *Journal of Education Policy*, 18(3), 253–265. <https://doi.org/10.1080/026809303005573>
- Castro, M. D. B., & Tumibay, G. M. (2021). A literature review: Efficacy of online learning courses for higher education institution using meta-analysis. *Education and Information Technologies*, 26(2), 1367–1385. <https://doi.org/10.1007/s10639-019-10027-z>
- Chen, Y. H., & Keng, C. J. (2019). Utilizing the Push-Pull-Mooring-Habit framework to explore users' intention to switch from offline to online real-person English learning platform. *Internet Research*, 29(1), 167–193. <https://doi.org/10.1108/IntR-09-2017-0343>
- Class, D. (2021, April 20). How the pandemic changed the role of teachers? - Digital Class. *Best Blogs & Insights From Digital Class E-Learning Marketplace*. <https://www.digitalclassworld.com/blog/how-the-pandemic-changed-the-role-of-teachers/>
- Cojocariu, V.-M., Lazar, I., Nedeff, V., & Lazar, G. (2014). SWOT Anlysis of E-learning Educational Services from the Perspective of their Beneficiaries. *Procedia - Social and Behavioral Sciences*, 116, 1999–2003. <https://doi.org/10.1016/j.sbspro.2014.01.510>
- Datu, J. A. D. (2018). Flourishing is Associated with Higher Academic Achievement and Engagement in Filipino Undergraduate and High School Students. *Journal of Happiness Studies*, 19(1), 27–39. <https://doi.org/10.1007/s10902-016-9805-2>
- Dewanggi, M., Hastuti, D., & Hernawati, N. (2012). PENGASUHAN ORANG TUA DAN KEMANDIRIAN ANAK USIA 3-5 TAHUN BERDASARKAN GENDER DI KAMPUNG ADAT URUG. *Jurnal Ilmu Keluarga & Konsumen*, 5(1), Article 1. <https://doi.org/10.24156/jikk.2012.5.1.19>
- Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. *Journal of Educational Technology Systems*, 49(1), 5–22. <https://doi.org/10.1177/0047239520934018>
- Elaine, A., & Jeff, S. (2008). *Staying the Course—Online Education in the United States*.

## REFERENCES (cont.)

- El-Sabagh, H. A. (2021). Adaptive e-learning environment based on learning styles and its impact on development students' engagement. *International Journal of Educational Technology in Higher Education*, 18(1), 53.  
<https://doi.org/10.1186/s41239-021-00289-4>
- Emerson, D. L., Fear, J., Fox, D. S., & Sanders, E. (2012). *Parental engagement in learning and schooling: Lessons from research*.
- Garbe, A., Ogurlu, U., Logan, N., & Cook, P. (2020). Parents' Experiences with Remote Education during COVID-19 School Closures. *American Journal of Qualitative Research*, 4(3). <https://doi.org/10.29333/ajqr/8471>
- Ghanbari, N., & Nowroozi, S. (2021). The practice of online assessment in an EFL context amidst COVID-19 pandemic: Views from teachers. *Language Testing in Asia*, 11(1), 27. <https://doi.org/10.1186/s40468-021-00143-4>
- Helen. (2015, August). 韩愈《师说》英文版. Language Tips.  
[https://language.chinadaily.com.cn/2015-08/13/content\\_21584248.htm](https://language.chinadaily.com.cn/2015-08/13/content_21584248.htm)
- Hong, X., Liu, Q., & Zhang, M. (2021). Dual Stressors and Female Pre-school Teachers' Job Satisfaction During the COVID-19: The Mediation of Work-Family Conflict. *Frontiers in Psychology*, 12, 691498.  
<https://doi.org/10.3389/fpsyg.2021.691498>
- Howard, N. M. (2004). *PEER INFLUENCE IN RELATION TO ACADEMIC PERFORMANCE AND SOCIALIZATION AMONG ADOLESCENTS: A LITERATURE REVIEW*.
- Hyseni Duraku, Z., & Hoxha, L. (2020). *The impact of COVID-19 on education and on the well-being of teachers, parents, and students: Challenges related to remote (online) learning and opportunities for advancing the quality of education*.
- Idris, M., Hussain, S., & Ahmad, N. (2020). *Relationship between Parents' Education and their children's Academic Achievement*. 7, 82–92.  
[https://doi.org/10.46662/jass-vol7-iss2-2020\(82-92\)](https://doi.org/10.46662/jass-vol7-iss2-2020(82-92))
- Ishimaru, A. M., Torres, K. E., Salvador, J. E., Lott II, J., Williams, D. M. C., & Tran, C. (2016). Reinforcing deficit, journeying toward equity: Cultural brokering in family engagement initiatives. *American Educational Research Journal*, 53, 850–882. <https://doi.org/10.3102/0002831216657178>
- Jhang, F.-H. (2017). Economically Disadvantaged Adolescents' Self-Concept and Academic Achievement as Mediators between Family Cohesion and Mental Health in Taiwan. *International Journal of Mental Health and Addiction*, 15(2), 407–422. <https://doi.org/10.1007/s11469-017-9737-z>

## REFERENCES (cont.)

- Khurana, C. (2016). *Exploring the role of multimedia in enhancing social presence in an asynchronous online course* [Rutgers University - Graduate School - New Brunswick]. <https://doi.org/10.7282/T3N018Q3>
- Kim, J. (2020). Learning and Teaching Online During Covid-19: Experiences of Student Teachers in an Early Childhood Education Practicum. *International Journal of Early Childhood*, 52(2), 145–158. <https://doi.org/10.1007/s13158-020-00272-6>
- Li, M., & Yu, Z. (2022). Teachers' Satisfaction, Role, and Digital Literacy during the COVID-19 Pandemic. *Sustainability*, 14, 1121. <https://doi.org/10.3390/su14031121>
- Liu, Z. (2021). Investigation of College Students' Learning Attitude towards Online Learning During the COVID-19. *Journal of Open Learning*.
- Majid, R. A., Abdullah, M., Bais, B., Bahri, N. S., Mokhtar, M. H., & Bahari, S. A. (2018). Relationship between Students' Attitudes in Space Science with Their Achievements in the Field. *Creative Education*, 9(14), Article 14. <https://doi.org/10.4236/ce.2018.914169>
- Mallett, C. A. (2016). The School-to-Prison Pipeline: A Critical Review of the Punitive Paradigm Shift. *Child and Adolescent Social Work Journal*, 33(1), 15–24. <https://doi.org/10.1007/s10560-015-0397-1>
- Marques, S. C., Pais-Ribeiro, J. L., & Lopez, S. J. (2011). The Role of Positive Psychology Constructs in Predicting Mental Health and Academic Achievement in Children and Adolescents: A Two-Year Longitudinal Study. *Journal of Happiness Studies*, 12(6), 1049–1062. <https://doi.org/10.1007/s10902-010-9244-4>
- McBrien, J. L., Cheng, R., & Jones, P. (2009). Virtual Spaces: Employing a Synchronous Online Classroom to Facilitate Student Engagement in Online Learning. *The International Review of Research in Open and Distributed Learning*, 10(3). <https://doi.org/10.19173/irrodl.v10i3.605>
- Novianti, R. (2018). ORANG TUA SEBAGAI PEMERAN UTAMA DALAM MENUMBUHKAN RESILIENSI ANAK. *Jurnal Educhild : Pendidikan Dan Sosial*, 7(1), Article 1. <https://doi.org/10.33578/jpsbe.v7i1.5101>
- Nunan, D. (1993). From Learning-Centeredness to Learner-Centeredness. *Applied Language Learning*, 4, 1–18.
- Park, H., Byun, S., & Kim, K. (2011). Parental Involvement and Students' Cognitive Outcomes in Korea: Focusing on Private Tutoring. *Sociology of Education*, 84(1), 3–22. <https://doi.org/10.1177/0038040710392719>

## REFERENCES (cont.)

- Roman, M. D. (2014). Students' Failure in Academic Environment. *Procedia - Social and Behavioral Sciences*, *114*, 170–177.  
<https://doi.org/10.1016/j.sbspro.2013.12.679>
- Rosenberg, M. J., & Hovland, C. I. (1960). Cognitive, Affective and Behavioral Components of Attitudes. In *Attitude Organization and Change: An Analysis of Consistency among Attitude Components*. Yale University Press.
- Schlossberg, N. K., Lynch, A. Q., & Chickering, A. W. (1989). *Improving Higher Education Environments for Adults: Responsive Programs and Services from Entry to Departure*. Wiley.
- Schmeck, R. R. (Ed.). (1988). *Learning Strategies and Learning Styles*. Springer US.  
<https://doi.org/10.1007/978-1-4899-2118-5>
- Sheridan, S. M., Knoche, L. L., Kupzyk, K. A., Edwards, C. P., & Marvin, C. A. (2011). A randomized trial examining the effects of parent engagement on early language and literacy: The getting ready intervention. *Journal of School Psychology*, *49*(3), 361–383. <https://doi.org/10.1016/j.jsp.2011.03.001>
- Simpson, A. W., & Erickson, M. T. (1983). Teachers' Verbal and Nonverbal Communication Patterns as a Function of Teacher Race, Student Gender, and Student Race. *American Educational Research Journal*, *20*(2), 183–198.  
<https://doi.org/10.3102/00028312020002183>
- Singh, V., & Thurman, A. (2019). How Many Ways Can We Define Online Learning? A Systematic Literature Review of Definitions of Online Learning (1988-2018). *American Journal of Distance Education*, *33*(4), 289–306.  
<https://doi.org/10.1080/08923647.2019.1663082>
- Stake, J. E., & Katz, J. F. (1982). Teacher–pupil relationships in the elementary school classroom: Teacher-gender and pupil-gender differences. *American Educational Research Journal*, *19*(3), 465–471.  
<https://doi.org/10.2307/1162726>
- Thompson, L. J., Clark, G., Walker, M., & Whyatt, J. D. (2013). 'It's just like an extra string to your bow': Exploring higher education students' perceptions and experiences of extracurricular activity and employability. *Active Learning in Higher Education*, *14*(2), 135–147. <https://doi.org/10.1177/1469787413481129>
- UNESCO Principal Regional Office for Asia and the Pacific. (2000). *Increasing the number of women teachers in rural schools: A synthesis of country case studies: South Asia*. UNESCO Principal Regional Office for Asia and the Pacific. <https://unesdoc.unesco.org/ark:/48223/pf0000122720>

## REFERENCES (cont.)

- Vaez, M., & Laflamme, L. (2008). Experienced stress, psychological symptoms, self-rated health and academic achievement: A longitudinal study of Swedish university students. *Social Behavior and Personality: An International Journal*, 36, 183–196. <https://doi.org/10.2224/sbp.2008.36.2.183>
- Wang, J.-K., Xue, H.-Q., & Wu, X.-F. (2023). Mental health and academic achievement among Chinese adolescents during COVID-19 pandemic: The mediating role of self-regulation learning. *Social Psychology of Education*. <https://doi.org/10.1007/s11218-023-09772-4>
- Wang, X. (2015, November 29). 小学教师课堂教学行为性别差异及研究.pdf 文档全文免费阅读、在线看. 原创力文档知识共享平台. <https://max.book118.com/html/2015/1129/30405299.shtm>
- Wang, Y. (2021, August 31). *China has over 1B internet users: CNNIC statistical report- China.org.cn*. China Internet Network Information Center. [http://www.china.org.cn/china/2021-08/31/content\\_77724335.htm](http://www.china.org.cn/china/2021-08/31/content_77724335.htm)
- Xiang, M., Gu, X., Jackson, A., Zhang, T., Wang, X., & Guo, Q. (2017). Understanding adolescents' mental health and academic achievement: Does physical fitness matter? *School Psychology International*, 38(6), 647–663. <https://doi.org/10.1177/0143034317717582>
- Yang, N.-D. (1998). Exploring a new role for teachers: Promoting learner autonomy. *System*, 26(1), 127–135. [https://doi.org/10.1016/S0346-251X\(97\)00069-9](https://doi.org/10.1016/S0346-251X(97)00069-9)
- Yelland, N. (2006). *Shift to the Future: Rethinking Learning with New Technologies in Education*. Routledge. <https://doi.org/10.4324/9780203961568>
- Ying nan Zhou & Chong-zeng BI. (2017, June). *Impact of Self-control on Academic Achievement for Primary and Middle School Students: The Mediating Role of Academic Possible Selves and Mental Health—CNKI [Southwest University]*. Chinese Journal of Clinical Psychology. <http://www.cnki.net/kcms/doi/10.16128/j.cnki.1005-3611.2017.06.030.html>
- Yuan, Z. (2017, August 15). 袁振国：教育正在悄悄发生的三大变化！引发学校、教学内容、教育手段的联动重组. [https://www.sohu.com/a/164859240\\_372509](https://www.sohu.com/a/164859240_372509)
- Zhang. (2019a, December 31). 学习态度的重要性. SOHU.com. [https://www.sohu.com/a/www.sohu.com/a/363834266\\_120265617](https://www.sohu.com/a/www.sohu.com/a/363834266_120265617)
- Zhang, Y. (2019b, August 20). 人工智能时代的教师角色再造-清华大学教育研究 [Tsinghua]. <http://tje.ioe.tsinghua.edu.cn/oa/DArticle.aspx?type=view&id=20190407>

## REFERENCES (cont.)

- Zhao, L., Thomas, P., & Zhang, L. (2021). Do our children learn enough in Sky Class? A case study: online learning in Chinese primary schools in the COVID era March to May 2020. *Smart Learning Environments*, 8(1), 35.  
<https://doi.org/10.1186/s40561-021-00180-9>
- Zhou, X. (2003). 谈中美家长参与教育的差异-【维普期刊官网】-中文期刊服务平台. 维普资讯.  
[http://qikan.cqvip.com/Qikan/Article/Detail?id=7681960&from=Qikan\\_Article\\_Detail\\_Detail](http://qikan.cqvip.com/Qikan/Article/Detail?id=7681960&from=Qikan_Article_Detail_Detail)
- Zhu, H., Wei, L., & Niu, P. (2020). The novel coronavirus outbreak in Wuhan, China. *Global Health Research and Policy*, 5(1), 6. <https://doi.org/10.1186/s41256-020-00135-6>
- 教育行业数据分析: 2020Q1 中国直播形式的中小学网络课程占比为 83%-艾媒网 . (2020, April 1). Iimedia.Cn. <https://www.iimedia.cn/c1061/70487.html>
- 远程教育研究中心. (2022, September 29). 联通主义学习中的教学交互规律与研究新范式 | “‘互联网+’时代的教育改革与创新管理研究”课题研究专报第 7 期. 微信公众平台.  
[http://mp.weixin.qq.com/s?\\_\\_biz=MzA4MjI4NDg4OQ==&mid=2247490617&idx=1&sn=8ba8951cc4a9602af4ec00ae04f1d3d9&chksm=9f89440fa8fec192cb60afe74e279c120e23b87a6be6ed10dd02b126d2d57edd2ae23c3a6b6#rd](http://mp.weixin.qq.com/s?__biz=MzA4MjI4NDg4OQ==&mid=2247490617&idx=1&sn=8ba8951cc4a9602af4ec00ae04f1d3d9&chksm=9f89440fa8fec192cb60afe74e279c120e23b87a6be6ed10dd02b126d2d57edd2ae23c3a6b6#rd)
- 魏琦芳, & 黄毅志. (2011). 學業成就與心理健康因果順序的貫時性分析: 以 TEPS 資料做分析. *中華心理衛生學刊*, 24(1), 97-130.  
[https://doi.org/10.30074/FJMH.201103\\_24\(1\).0004](https://doi.org/10.30074/FJMH.201103_24(1).0004)

## APPENDIX

Appendix A: Actual Questionnaire Used

Appendix B: List of experts

Appendix C: IOC Validation



This material is reserved for educational use only, not allowed for commercial use.

Forbidden to modify the content, and cite the document when use.

## APPENDIX A

### Actual Questionnaire Used

#### A.1 Students' attitudes

This questionnaire was designed to survey the attitudes of students, the response will be treated in strict confidence and used for academic purposes only. Please answer all questions truthfully and don't worry about your answers being different from others' because there is no standard answer.

本问卷意在调查学生的态度，答案将严格保密，仅用于论文研究。请如实回答所有问题，不要担心你的答案与别人的不同，因为没有标准答案。

#### Part I: Respondent's demographic profile (2 questions)

Directions: Please mark a mark (√) in the box or fill in the blank of each item.

说明：请在方框内打勾(√)

1. Age:年龄:	
<input type="checkbox"/> 6-8; 6至8岁	<input type="checkbox"/> 9-12; 9至12岁
<input type="checkbox"/> over 12; 12岁以上	
2. Which platform do you usually use during online learning? 你通常用什么平台上网课?	
<input type="checkbox"/> Beijing digital school; 北京数字学校	<input type="checkbox"/> Network cloud platform; 国家中小学网络云平台
<input type="checkbox"/> Zoom; Zoom 云视频会议软件	<input type="checkbox"/> Tencent meeting; 腾讯会议
<input type="checkbox"/> Ding Talk;钉钉	<input type="checkbox"/> Others; 其他

## Part II: Respondents' the attitude of online learning (31 questions)

Directions: Please mark a mark (√) in the box for the answer which expresses your opinion.

说明：请在方框内打勾 (√) 。

5= Strongly Agree, 4= Agree, 3= Moderate, 2= Disagree, 1= Strongly Disagree

5=非常同意，4=同意，3=一般，2=不同意，1=非常不同意

<b>Personal factors (1-8)</b>					
个人因素					
<b>Statement</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
1. Lack of computer skills makes me uncomfortable during online classes. 缺乏计算机技能让我在上网课时感到不舒服					
2. I feel more comfortable to participate in online class discussions compared to classroom 与课堂讨论相比，我更愿意参与在线课堂讨论					
3. I find it difficult to understand and follow online classes 我发现上网课时很难理解也跟不上节奏					
4. I feel less anxious in online classes. 我在网上上课时，感到不是很焦虑。					
5. I get easily distracted and have difficulty concentrating during online classes. 我很容易分心，在上网课时很难集中注意力。					
6. I feel lazy and disinterested during online classes. 我在上网课时感到困倦缺乏兴趣					
7. Difficult to keep classes for longer duration during online classes. 在上网课时，很难长时间持续听课。					
8. I feel lack of motivation to take online classes. 我觉得缺乏动力去上网络课程。					

<b>Online v/s classroom learning mode (1-11)</b> 在线 v/s 课堂学习模式					
1. Online classes are more effective than classroom mode 上网课比线下课程更有效果					
2. Online classes are fun and interactive than classroom method 线上课程比线下课程更有趣					
3. Online learning is child-friendly 在线学习是对孩子友好的					
4. Online learning helps to distract students from the pandemic 在线学习有助于分散学生对疫情的注意力					
5. Online learning helps me to engage with lessons 在线学习帮助我参与课程学习					
6. Online learning is useless for us with special educational needs 对于有特殊教育需求的我们来说，在线学习没有用					
7. Online classes are more effective than classroom mode 线上课堂比在传统教室学习更有效果					
8. There is lack of interaction during online classes 线上课堂缺乏互动性					
9. Online classes are more convenient than classroom method 线上课堂比在传统教室里学习更方便					
10. Online classes save time. 在线课程节约时间。					
11. Online classes are less structured than classroom mode 网络课程的结构不如线下教学模式					
<b>Students' attitude during online learning (1-5)</b> 在线课程中学生的态度					
1. I enjoy using online platform for my studies 我喜欢使用网络平台学习					
2. I was interested in studying courses that use online learning 我对线上课程很感兴趣					
3. I feel confident in using computers 我对使用电脑很有信心					
4. I feel that online learning gives me the opportunity to acquire new knowledge 我感觉在线学习给了我机会去获得新知识					
5. I believe that online learning enhances my learning experience 我相信在线学习可以提高我的学习经验					

<b>Technology skills (1-7)</b> 技术技能					
1. Technology gives me access to wide range of learning materials. 科技让我接触到广泛的学习材料。					
2. Technology keeps me connected to the courses I am enrolled in. 科技让我与我所选修的课程保持联系。					
3. Technology will help me to complete my work faster 科技将帮助我更快地完成工作					
4. Technology makes learning creative. 技术使学习具有创造性					
5. Technology will enable me to take control of my learning. 科技将使我能够掌控我的学习					
6. Technology will help me to produce quality work. 技术将帮助我完成高质量的学习工作					
7. Technical issues disrupt the flow and pace of online classes. 技术问题扰乱了在线课程的流程和节奏。					

### **Part III Respondents' opinions on online learning**

1. How difficult or easy is it to use the distance learning technology (computer, tablet, video calls, learning applications, etc.)?

使用远程学习技术（电脑、平板电脑、视频通话、学习应用等）的难易程度如何？

2. Are there adults at your school you can go to for help if you need it right now?

如果你现在需要帮助，你的学校有成年人可以帮助你吗？

## A.2 Teachers' role

This questionnaire was designed to investigate teacher role in online teaching. Please fill in the blanks carefully according to the actual situation, your answer is for research purposes only, not privacy involved.

### Part IV: Respondent's demographic profile for teachers (1 questions)

Directions: Please mark a mark (√) in the box or fill in the blank of each item.

1. Gender: 性别	
<input type="checkbox"/> male; 男士	<input type="checkbox"/> female; 女士

### Part V: Survey items on teachers' role during online classes. (20 questions)

5= Strongly Agree, 4= Agree, 3= Moderate, 2= Disagree, 1= Strongly Disagree

5=非常同意, 4=同意, 3=一般, 2=不同意, 1=非常不同意

Learning activity online teaching (1-8) 在线教学中的学习活动					
statements	5	4	3	2	1
1. Lack of computer skills makes it difficult for me to use the online teaching; 计算机技能的缺乏导致线上教学难以实施					
2. Lack of Supporting pupils with special needs or disabilities; 在线教学模式难以满足有特殊需求的学生					
3. lack of teacher- student interaction in online classes 线上课程缺少师生互动					
4. Lack of use innovative teaching methods; 在线难以实现创新的教学方法					
5. Lack of interest and involvement during online teaching 线上课程使学生缺乏兴趣和参与意识					
6. lack of work satisfaction while taking online teaching 线上教学使教师缺乏工作成就感					
7. Lack of technical issues effect the flow and pace of online teaching 技术问题影响了在线教学的进程和速度					
8. lack of organize students to participate discussion and answer questions in online class 网络课堂无法组织学生参与讨论和回答问题					

<b>Personal factors in online teaching (1-12)</b>					
网络教学中的个人因素					
1. It was my first experience with online teaching 这是我第一次线上教学					
2. I had some experience with online teaching 我有一些线上教学的经验					
3. I haven't had any experience with online learning 我没有线上教学的经验					
4. As a teacher, I think online teaching was flexibility 作为一名老师, 我认为在线教学很灵活					
5. I think online classes help me to use innovative teaching methods 我认为在线教学能帮我灵活运用创新的教学方法。					
6. I can use wide range of tools for online teaching 我能广泛运用教学工具实行线上教学					
7. I can give feedback on students' progress in time 对于学生的进步我能及时给与反馈					
8. I can make the students want to cooperate with me 我能使学生与我合作					
9. It is difficult to keeping all pupils motivated and engaged 让所有的学生保持学习动机和参与度有点难					
10. It is difficult to keep classes for longer duration during online classes 让学生长时间上网课有点难					
11. It is difficult to control group interaction during online classes 在网课期间, 很难控制学生群体间的互动。					
12. It is difficult to communicate with parents/caregivers 很难和和学生家长或监护人保持沟通交流。					

## Part VI: Respondents' opinions on online teaching

1. Please describe what has been the hardest part about moving your classes online?

请描述一下你的在线教学最难的部分是什么？

2. What were your caring about online teaching?

你对在线教学关心的是什么？



### A.3 Parent's engagements

Parents' cooperation with schools and participation in children's education play an extremely important role in children's growth and development. The purpose of this questionnaire is to understand the involvement of parents in their children's education, and the results are for academic research purposes only. There is no name and no right or wrong question, you just need to fill in the questionnaire according to your opinion ("√" after parentheses). Your opinion is very important for our research. Please fill it in carefully. Be careful not to miss the question. Thank you for your support and assistance in this study!

#### Part VII: Respondent's demographic profile (1 questions)

Directions: Please mark a mark (√) in the box or fill in the blank of each item.

1. Education background: 教育背景	
<input type="checkbox"/> College; 大专	<input type="checkbox"/> Bachelor, 本科
<input type="checkbox"/> Master; 硕士	<input type="checkbox"/> Dr; 博士

**Part VIII: Survey items on respondents' family engagement toward online learning. (20 questions)**

Directions: Please mark a mark (√) in the box for the answer which expresses your opinion.

5= Strongly Agree, 4= Agree, 3= Moderate, 2= Disagree, 1= Strongly Disagree

5=非常同意, 4=同意, 3=一般, 2=不同意, 1=非常不同意

<b>Parents' factors (1-12)</b> 父母的因素					
<b>Statements</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
1. Do you think your child should spend less time learning in person at school right now? 您认为现在孩子应该少花时间在學校学习吗?					
2. Do you think your child should spend more time on learning 您认为您的学生愿意投入更多的时间学习吗?					
3. Are you satisfied with the way learning is structured at your child's school right now? 您对孩子在校的学习方式满意吗?					
4. Is it difficult for your child to use the distance learning tools (video calls, learning applications, etc.)? 您的孩子使用远程学习工具有困难吗?					
5. Are you confident in your ability to support your child's education during distance learning? 您是否有信心在远程教育中支持您孩子的教育?					
6. Are you confident that teachers can motivate students to learn in the current model? 您对教师在现有模式下能激励学生学习有信心吗?					
7. You can accompany your children to study every day 您每天都陪伴孩子学习					
8. You are care about your children's academic performance 您关心孩子的学习成绩					
9. You are care about your child's physical and mental health 您关注孩子的身心健康					
10. What is your attitude towards strengthening the cooperation between family and school? 您对加强家庭和學校之间的合作是什么态度					
11. Do you agree with the teacher's educational behavior? 你同意老师的教育行为吗?					
12. Your opinion of the teachers' working methods is very good 您认为老师的教学方法非常好					

<b>Parents' engagement online learning (1-8)</b> 家长参与在线学习的情况					
<b>Statements</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
1. You agree with "parental involvement in education" 你同意家长参与孩子的教育					
2. Do you agree with parent school or parent committee establish in the child's school? 您同意您孩子的学校建立家长学校或者家委会吗?					
3. Do you think the main role of parental engagement in education is to promote children's learning? 您认为家长参与的主要角色是能促进孩子的学习吗?					
4. Do you think the main role of parental engagement in education is to promote school management? 您认为家长参与的主要角色是促进学校管理吗?					
5. The way you get involved in your child's education is through daily family education 你参与孩子的学习是通过日常家庭教育					
6. The way you get involved in your child's education is by talking to the teacher 您参与孩子教育的方式是通过和老师交谈的方式					
7. The way you get involved in your child's education is participating in school-related activities with your child 您参与孩子教育的方式是通过参加学校的活动					
8. You don't know much about your involvement in your child's education 您不太清楚参与您孩子的教育					

### **Part IX: Respondents' opinions on parent engagement**

1. What is working well with your child's education that you would like to see continued?

您希望孩子的教育中哪些方面发挥了良好的作用?

2. What do you think are the responsibilities of parents and teachers in the growth of children?

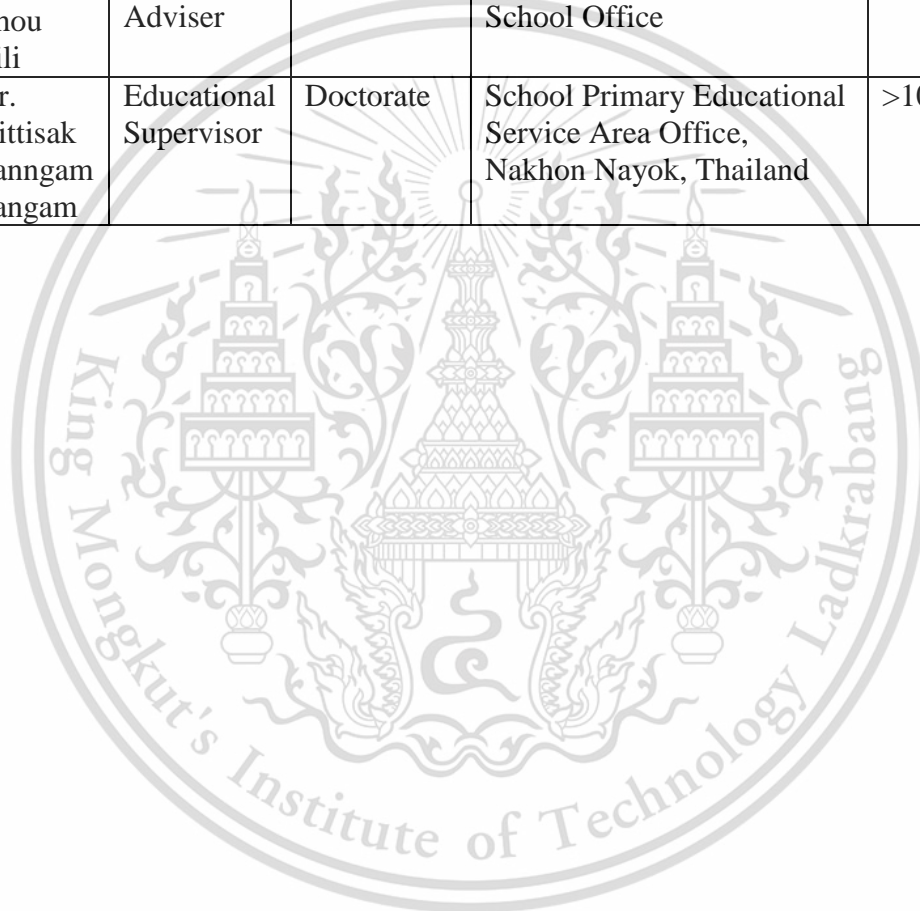
您认为父母和老师孩子的成长过程中有什么责任?

## APPENDIX B

### LIST OF EXPERTS

The experts used to assess the item, Index of Congruency, were:

Name	Position	Qualify	School	Years experience
权超男 Quan Chaonan	Chinese Teacher	Bachelor	Beijing Public Primary School Office	7
周丽丽 Zhou Lili	Class Adviser	aster	Beijing Public Primary School Office	10
Dr. Kittisak Pangam Pangam	Educational Supervisor	Doctorate	School Primary Educational Service Area Office, Nakhon Nayok, Thailand	>10?



This material is reserved for educational use only, not allowed for commercial use.

Forbidden to modify the content, and cite the document when use.



No.

School of Industrial Education and Technology  
King Mongkut's Institute of Technology Ladkrabang  
1 Chalongkrung Soi 1, Ladkrabang District,  
Bangkok 10520, Thailand

May 27 , 2022

Dear Mrs. Quan Chaonan

Ms. Min Zhang, student ID 63603115, a master's degree student in Master of Science Program in Technology-Enhanced Learning and Innovation, King Mongkut's Institute of Technology Ladkrabang is working on a thesis title "Opinions of Online Learning on Students, Parents and Teachers of Primary School During the Covid-19 Pandemic" with Asst. Prof. Dr. Kanyarat Sriwisathiyakun as thesis advisor.

The School of Industrial Education and Technology acknowledged on your professional competence in regarding field, the faculty would like to invite you as a senior expert to evaluate on accuracy and appropriate of the content on questionnaires (IOC Checking). The recommendations and reviews from your assessment will be beneficial to the completeness of Ms. Min Zhang's research.

Please consider on this invitation, the faculty is looking forward and most appreciated for your kind acceptance.

Yours Sincerely,

(Assistant Professor Dr. Worapong Pairindra)

ผู้ช่วยคณบดีฝ่ายวิชาการ ปฏิบัติการแทนคณบดี

2022/05/27 Time 10:49:42 Non-PKI Server Sign-L.N

Signature Code : QwAzA-EEAMw-BCADA-ANQBB



No.

School of Industrial Education and Technology  
King Mongkut's Institute of Technology Ladkrabang  
1 Chalongkrung Soi 1, Ladkrabang District,  
Bangkok 10520, Thailand

May 27 , 2022

Dear Mrs. Zhou Lili

Ms. Min Zhang, student ID 63603115, a master's degree student in Master of Science Program in Technology-Enhanced Learning and Innovation, King Mongkut's Institute of Technology Ladkrabang is working on a thesis title "Opinions of Online Learning on Students, Parents and Teachers of Primary School During the Covid-19 Pandemic" with Asst. Prof. Dr. Kanyarat Sriwisathiyakun as thesis advisor.

The School of Industrial Education and Technology acknowledged on your professional competence in regarding field, the faculty would like to invite you as a senior expert to evaluate on accuracy and appropriate of the content on questionnaires (IOC Checking). The recommendations and reviews from your assessment will be beneficial to the completeness of Ms. Min Zhang's research.

Please consider on this invitation, the faculty is looking forward and most appreciated for your kind acceptance.

Yours Sincerely,

(Assistant Professor Dr. Worapong Pairindra)

ผู้ช่วยคณบดีฝ่ายวิชาการ ปฏิบัติการแทนคณบดี

2022/05/27 Time: 10:50:16 Non-PKI Server Sign-LN

Signature Code: RgAyA-EEARA-BBADc-ANwA3



No.

School of Industrial Education and Technology  
King Mongkut's Institute of Technology Ladkrabang  
1 Chalongkrung Soi 1, Ladkrabang District,  
Bangkok 10520, Thailand

May 27 , 2022

Dear Dr. Kittisak Panngam

Ms. Min Zhang, student ID 63603115, a master's degree student in Master of Science Program in Technology-Enhanced Learning and Innovation, King Mongkut's Institute of Technology Ladkrabang is working on a thesis title "Opinions of Online Learning on Students, Parents and Teachers of Primary School During the Covid-19 Pandemic" with Asst. Prof. Dr. Kanyarat Sriwisathiyakun as thesis advisor.

The School of Industrial Education and Technology acknowledged on your professional competence in regarding field, the faculty would like to invite you as a senior expert to evaluate on accuracy and appropriate of the content on questionnaires (IOC Checking). The recommendations and reviews from your assessment will be beneficial to the completeness of Ms. Min Zhang's research.

Please consider on this invitation, the faculty is looking forward and most appreciated for your kind acceptance.

Yours Sincerely,

(Assistant Professor Dr. Worapong Pairindra)

ผู้ช่วยคณบดีฝ่ายวิชาการ ปฏิบัติการแทนคณบดี

2022/05/27 Time 10:50:40 Non-PKI Server Sign-EN

Signature Code : NgASA-DgAQw-BCAEM-AMgBE

## APPENDIX C

### IOC Validation

#### Description:

This Questionnaire is part of a study satisfaction with students' attitudes, Teacher's roles, Parent's engagements of primary school during the Covid-19 pandemic. Your responses are valuable and considered highly confidential.

#### Direction:

Read through the test questions in this form. Please indicate the degree to which each item is congruent with the objective of this study. If you have any comments on the congruence of each question, please record them in the space provided. Tick (✓) to rate the congruence according to the scale below.

+1 = certain that the question is congruent with themes of opinions with Students' attitude, Teacher's roles, Parent's engagements in online learning.

0 = uncertain that the question is congruent with themes of opinions with Students' attitude, Teacher's roles, Parent's engagements in online learning.

-1 = certain that the question is NOT congruent with themes of opinions with Students' attitude, Teacher's roles, Parent's engagements during online learning

In the tables below, the original questions are listed (with the original Chinese and an English translation) in the first two columns. Expert scores appear in the 'Experts' column for the three experts. The  $\Sigma^R$  column sums the experts' scores. The computed IOC appears in the next column. The 'Result' (**Res**) column contains a flag 'used' to indicate that the question was used in the survey or 'not used' to flag rejected questions.

## C.1 Questionnaire for students

No	Question items	Experts			$\Sigma^R$	IOC	Res
		1	2	3			
<b>Personal factors (1-8)</b> 个人因素							
1.	Lack of computer skills makes me uncomfortable during online classes 缺乏计算机技能让我在上网课时感到不舒服	+1	+1	+1	3	1.00	used
2.	I feel more comfortable to participate in online class discussions compared to classroom 与课堂讨论相比，我更愿意参与在线课堂讨论	0	+1	+1	2	0.67	used
3.	I find it difficult to understand and follow online classes 我发现上网课时很难理解也跟不上节奏	+1	+1	+1	3	1.00	used
4.	I feel less anxious in online classes. 我在网上上课时，感到不是很焦虑。	+1	+1	+1	3	1.00	used
5.	I get easily distracted and have difficulty concentrating during online classes. 我很容易分心，在上网课时很难集中注意力。	+1	+1	+1	3	1.00	used
6.	I feel lazy and disinterested during online classes. 我在上网课时感到困倦缺乏兴趣	+1	+1	+1	3	1.00	used
7.	Difficult to keep classes for longer duration during online classes. 在上网课时，很难长时间持续听课。	0	+1	+1	2	0.67	used
8.	I feel lack of motivation to take online classes. 我觉得缺乏动力去上网络课程。	0	+1	+1	2	0.67	used

<b>Online v/s classroom learning mode (1-11)</b> <b>在线 v/s 课堂学习模式</b>							
1.	Online classes are more effective than classroom mode 上网课比线下课程更有效果	+1	+1	+1	3	1.00	used
2.	Online classes are fun and interactive than classroom method 线上课程比线下课程更有趣	+1	+1	+1	3	1.00	used
3.	Online learning is child-friendly 在线学习是对孩子友好的	+1	+1	+1	3	1.00	used
4.	Online learning helps to distract students from the pandemic 在线学习有助于分散学生对疫情的注意力	+1	+1	+1	3	1.00	used
5.	Online learning helps me to engage with lessons 在线学习帮助我参与课程学习	+1	+1	+1	3	1.00	used
6.	Online learning is useless for us with special educational needs 对于有特殊教育需求的我们来说，在线学习没有用	+1	+1	+1	3	1.00	used
7.	Online classes are more effective than classroom mode 线上课堂比在传统教室教学更有效果	+1	+1	+1	3	1.00	used
8.	There is lack of interaction during online classes 线上课堂缺乏互动性	+1	+1	+1	3	1.00	used
9.	Online classes are more convenient than classroom method 线上课堂比在传统教室教学更方便	+1	+1	+1	3	1.00	used
10.	Online classes save time. 在线课程节约时间。	0	+1	+1	2	0.67	used
11.	Online classes are less structured than classroom mode 网络课程的结构不如线下教学模式	0	+1	+1	2	0.67	used

<b>Students' attitude during online learning (1-5)</b>							
在线课程中学生的态度							
1.	I enjoy using online platform for my studies 我喜欢使用网络平台学习	0	+1	+1	2	0.67	used
2.	I was interested in studying courses that use online learning 我对线上课程很感兴趣	0	+1	+1	2	0.67	used
3.	I feel confident in using computers 我对使用电脑很有信心	+1	+1	+1	3	1.00	used
4.	I feel that online learning gives me the opportunity to acquire new knowledge 我感觉在线学习给了我机会去获得新知识	+1	+1	+1	3	1.00	used
5.	I believe that online learning enhances my learning experience 我相信在线学习可以提高我的学习经验	+1	+1	+1	3	1.00	used
<b>Technology skills (1-7)</b>							
技术技能							
1.	Technology gives me access to wide range of learning materials. 科技让我接触到广泛的学习材料。	+1	+1	+1	3	1.00	used
2.	Technology keeps me connected to the courses I am enrolled in. 科技让我与我所选修的课程保持联系。	+1	+1	+1	3	1.00	used
3.	Technology will help me to complete my work faster 科技将帮助我更快地完成工作	+1	+1	+1	3	1.00	used
4.	Technology makes learning creative. 技术使学习具有创造性	+1	+1	+1	3	1.00	used
5.	Technology will enable me to take control of my learning. 科技将使我能够掌控我的学习	+1	+1	+1	3	1.00	used
6.	Technology will help me to produce quality work. 技术将帮助我完成高质量的学习工作	+1	+1	+1	3	1.00	used
7.	Technical issues disrupt the flow and pace of online classes. 技术问题扰乱了在线课程的流程和节奏。	+1	+1	+1	3	1.00	used

## C.2 Open ended questions:

1. How difficult or easy is it to use the distance learning technology (computer, tablet, video calls, learning applications, etc.)?

使用远程学习技术（电脑、平板电脑、视频通话、学习应用等）的难易程度如何？

2. Are there adults at your school you can go to for help if you need it right now? 如果你现在需要帮助，你的学校有成年人可以帮助你吗？



### C.3 Questionnaire for teachers:

No	Question items	Experts			$\Sigma^R$	IOC	Res
		1	2	3			
<b>Learning activity online teaching (1-8)</b> 在线教学中的学习活动							used
1.	Lack of computer skills makes it difficult for me to use the online teaching. 计算机技能的缺乏导致线上教学难以实施	+1	+1	+1	3	1.00	used
2.	Lack of Supporting pupils with special needs or disabilities. 在线教学模式难以满足有特殊需求的学生	+1	+1	+1	3	1.00	used
3.	lack of teacher- student interaction in online classes 线上课程缺少师生互动	+1	+1	+1	3	1.00	used
4.	Lack of use innovative teaching methods ; 在线教学难以实现创新的教学方法	+1	+1	+1	3	1.00	used
5.	Lack of interest and involvement during online teaching 线上课程使学生缺乏兴趣和参与意识	+1	+1	+1	3	1.00	used
6.	lack of work satisfaction while taking online teaching 线上教学使教师缺乏工作成就感	0	+1	+1	2	0.67	used
7.	Lack of technical issues effect the flow and pace of online teaching. 技术问题影响了在线教学的进程和速度	+1	+1	+1	3	1.00	used
8.	lack of organize students to participate discussion and answer questions in online class. 网络课堂无法组织学生参与讨论和回答问题	+1	+1	+1	3	1.00	Used

<b>Personal factors in online teaching (1-12)</b> 网络教学中的个人因素								
1.	It was my first experience with online teaching. 这是我第一次线上教学	+1	+1	+1	3	1.00	used	
2.	I had some experience with online teaching. 我有一些线上教学的经验	+1	+1	+1	3	1.00	used	
3.	I haven't had any experience with online learning. 我没有线上学习的经验	+1	+1	+1	3	1.00	used	
4.	As a teacher, I think online teaching was flexibility. 作为一名老师, 我认为在线教学很灵活	+1	+1	+1	3	1.00	used	
5.	I think online classes help me to use innovative teaching methods. 我认为在线教学能帮我灵活运用创新的教学方法。	+1	+1	+1	3	1.00	used	
6.	I can use wide range of tools for online teaching. 我能广泛运用教学工具实行线上教学	+1	+1	+1	3	1.00	used	
7.	I can give feedback on students' progress in time 对于学生的进步我能及时给与反馈	+1	+1	+1	3	1.00	used	
8.	I can make the students want to cooperate with me. 我能使学生与我合作	+1	+1	+1	3	1.00	used	
9.	It is difficult to keeping all pupils motivated and engaged. 让所有的学生保持学习动机和参与度有点难	+1	+1	+1	3	1.00	used	
10.	It is difficult to keep classes for longer duration during online classes. 让学生长时间上网课有点难	+1	+1	+1	3	1.00	used	
11.	It is difficult to control group interaction during online classes. 在网课期间, 很难控制学生群体间的互动。	+1	+1	+1	3	1.00	used	
12.	It is difficult to communicate with parents/caregivers. 很难和和学生家长或监护人保持沟通交流。	+1	+1	+1	3	1.00	used	

#### C.4 Open ended questions:

1. Please describe what has been the hardest part about moving your classes online?  
请描述一下你的在线教学最难的部分是什么?

2. What were your caring about online teaching?  
你对在线教学关心的是什么



### C.5 Questionnaire for Parents engagements

No	Question items	Experts			$\Sigma^R$	IOC	Res
		1	2	3			
<b>Parents' factors (1-12)</b> <b>父母的因素</b>							
1.	Do you think your child should spend less time learning in person at school right now? 您认为现在孩子应该少花时间在学校的学习吗?	+1	+1	+1	3	1.00	used
2.	Do you think your child should spend more time on learning? 您认为您的学生愿意投入更多的时间学习吗?	+1	+1	+1	3	1.00	used
3.	Are you satisfied with the way learning is structured at your child's school right now? 您对孩子在校的学习方式满意吗?	+1	+1	+1	3	1.00	used
4.	Is it difficult for your child to use the distance learning tools (video calls, learning applications, etc.)? 您的孩子使用远程学习工具有困难吗?	+1	+1	+1	3	1.00	used
5.	Are you confident in your ability to support your child's education during distance learning? 您是否有信心在远程教育中支持您孩子的教育?	+1	+1	+1	3	1.00	used
6.	Are you confident that teachers can motivate students to learn in the current model? 您对教师在现有模式下能激励学生学习有信心吗?	+1	+1	+1	3	1.00	used
7.	You can accompany your children to study every day 您每天都陪伴孩子学习	+1	+1	+1	3	1.00	used
8.	You are care about your children's academic performance. 您关心孩子的学习成绩	+1	+1	+1	3	1.00	used
9.	You are care about your child's physical and mental health. 您关注孩子的身心健康	+1	+1	+1	3	1.00	used
10.	What is your attitude towards strengthening the cooperation between family and school? 您对加强家庭和学校的合作是什么态度?	+1	+1	+1	3	1.00	used
11.	Do you agree with the teacher's educational behavior? 你同意老师的教育行为吗?	+1	+1	+1	3	1.00	used
12.	Your opinion of the teachers' working methods is very good. 您认为老师的教学方法非常好	+1	+1	+1	3	1.00	used

<b>Parents' engagement online learning (1-8)</b> 家长参与在线学习的情况							
1.	You agree with "parental involvement in education" 你同意家长参与孩子的教育	0	+1	+1	2	0.67	used
2.	A parent school or parent committee has been established in the child's school 您孩子的学校已经建立了家长学校或者家委会	0	0	0	0	0	unus ed
	2. Do you agree with parent school or parent committee establish in the child's school? 您同意您孩子的学校建立家长学校或者家委会吗						
3.	Do you think the main role of parental engagement in education is to promote children's learning? 您认为家长参与的主要角色是能促进孩子的学习吗?	+1	+1	+1	3	1.00	used
4.	Do you think the main role of parental engagement in education is to promote school management? 您认为家长参与的主要角色是促进学校管理吗?	+1	+1	+1	3	1.00	used
5.	The way you get involved in your child's education is through daily family education. 你参与孩子的学习是通过日常家庭教育	+1	+1	+1	3	1.00	used
6.	The way you get involved in your child's education is by talking to the teacher. 您参与孩子教育的方式是通过和老师交谈的方式	+1	+1	+1	3	1.00	used
7.	The way you get involved in your child's education is participating in school-related activities with your child. 您参与孩子教育的方式是通过参加学校的活动	+1	+1	+1	3	1.00	used
8.	You don't know much about your involvement in your child's education. 您不太清楚参与您孩子的教育	+1	+1	+1	3	1.00	used

### C.6 Open ended questions:

1. What is working well with your child's education that you would like to see continued?

您希望孩子的教育中哪些方面发挥了良好的作用?

2. What do you think are the responsibilities of parents and teachers in the growth of children?

您认为父母和老师孩子的成长过程中有什么责任?



## AUTHOR BIOGRAPHY

<b>Author:</b>	Mrs. Min Zhang
<b>Degree:</b>	Master of Science
<b>Date of Birth:</b>	04 <sup>th</sup> February 1986
<b>Place of Birth:</b>	Zhengyang, Henan Province, China

### **Undergraduate and Graduate Education:**

Master of Science in technology enhance learning and innovation,  
King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand 2023

Bachelor of arts in English,  
Peking University, 2020

Industry & Business Administration  
BeiJing Geely University, 2005-2009

**Major:** Technology enhance learning and innovation

### **Work Experiences:**

2015-2022: East & West International Education, China

### **Presentations and Publications:**

Min Zhang, Dr. Kanyarat Sriwisathiyakun, Dr John Morris (2023). The Attitude of Primary Chinese Students Toward Online Learning During the COVID-19 Pandemic. International Conference 19<sup>th</sup> Developing Real-Life Learning Experiences: Creative Innovation for Sustainable Goals (CISDGs). June 16, 2023.