

**A Qualitative Study of Online, Blended, and
Hybrid Learning Protocols for University
Students during the Pandemic Period**

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ABSTRACT

The global COVID-19 pandemic has prompted a significant shift in the educational landscape, with many universities transitioning to online and hybrid learning models. This study aimed to explore the challenges and benefits experienced by Chinese university students during the distance learning period of the pandemic and the subsequent shift back to face-to-face learning. A qualitative research approach was employed, involving in-depth interviews with nine Chinese university students, representing a range of academic disciplines, ages, and both genders. The participants were enrolled in urban universities and had experienced online, hybrid, and face-to-face learning models during the pandemic. Thematic analysis was used to analyse the interview transcripts, revealing key themes related to flexibility, communication, social isolation, motivation, technological issues, and personal preferences for different learning models. The results indicate that while online and hybrid learning models provided some benefits, such as increased flexibility and time management, they also posed significant challenges related to communication, social isolation, motivation, and technological issues. Additionally, there was considerable variation in students' preferences for different learning models, highlighting the importance of providing flexibility and personalized support to address individual needs. The findings of this study have important implications for university policy and suggest directions for future research.

Keywords: *COVID-19, online learning, hybrid learning, face-to-face learning, Chinese university students, challenges, benefits, qualitative research.*

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1 INTRODUCTION

1.1 BACKGROUND AND CONTEXT

With the advent of the internet and advancements in digital technologies, the education landscape has been witnessing a paradigm shift towards more flexible modes of learning, including in the use of specific tools and technologies (Selwyn, 2012). The traditional face-to-face model of instruction has been supplemented, and in some cases replaced, by various forms of distance learning, notably online, blended, and hybrid learning. Online learning, often synonymous with e-learning, refers to the education that occurs through a digital platform, where geographical and temporal constraints are minimal. (Concannon, Flynn and Campbell, 2005) Over the years, online learning has gained momentum due to its ability to cater to a diverse student population, providing accessibility, flexibility, and a vast repository of resources at the learner's disposal (Concannon, Flynn and Campbell, 2005).

Blended and hybrid learning, however, seek to capitalise on the best of both online and traditional learning. Blended learning is an educational program where a student learns, at least in part, through online delivery of content and instruction with some element of control over time, place, path, or pace (Saichaie, 2020). Meanwhile, hybrid learning typically implies a more deliberate integration of online and face-to-face instruction, with the online component often serving as a replacement, rather than an addition, to traditional in-person teaching (Saichaie, 2020). While the benefits and drawbacks of these approaches are multiple, “educators agree that this approach has the opportunity to provide personalised instruction with some element of student control over path, pace, time, and place” (O’Byrne and Pytash, 2015:137). At the same time, there is a need to understand how these spaces can protect students and promote learning on a deeper level (O’Byrne and Pytash, 2015).

Prior to the COVID-19 pandemic, these alternative modes of learning were gaining recognition for their potential in creating more engaging, personalised, and accessible educational experiences. However, the global health crisis has transformed them from a supplementary form of education into a necessary and ubiquitous modality (Bozkurt, 2022). The pandemic forced universities worldwide to close their physical campuses and shift to emergency remote teaching, making online and hybrid learning the “new normal” (Bozkurt,

2022). The speed and scale of this transition were unprecedented, leading to a variety of experiences for both educators and learners. This emergency shift has prompted critical discussion on the effectiveness, opportunities, challenges, and long-term implications of these learning protocols (Sumandiyar et al., 2021).

This sudden digital transformation where there has been a development of new technologies has created a unique context to investigate the operationalisation, effectiveness, and future of online, blended, and hybrid learning protocols. The broad range of experiences and rapid developments during the pandemic have not been thoroughly explored in existing literature, which underscores the need for this study. There has been little comparative research into the way that students feel about these protocols as they were experienced during the pandemic, particularly in these latter stages where students are likely to have experienced multiple types of technology-enabled learning in addition to those that they have experimented with and used in their personal learning (Sahu, 2020).

1.2 PROBLEM STATEMENT

The pandemic was a rapid transition to online learning, but there has been less insight into the transition back to face-to-face learning and how students felt about blended and hybrid approaches in their education. As blended and hybrid learning is becoming more popular, there is a need to ensure that students are receiving the education that they deserve when using these technologies (Yang, 2020). Despite this, there are few examples in the literature that attempt to understand how students themselves perceive and conceptualise these approaches to education, particularly during the observed stress of the pandemic (Sahu, 2020). There is a need to understand how these benefits and drawbacks are understood by these students to create structure and protocol for online-only, hybrid, and blended learning models moving forward to ensure that students get the best possible education (O'Byrne and Pytash, 2015).

1.3 AIMS AND OBJECTIVES

Based on the above context and problem statement, the following aims and objectives were developed:

- To synthesise the current known literature on the effects of COVID-19 on the education of Chinese university students
- To understand the benefits and drawbacks of online-only, hybrid, and blended learning models from the perspectives of the students
- To analyse whether there are any benefits to online-only, hybrid, and blended learning models that can be implemented in the post-pandemic period
- To evaluate the findings from interviews with Chinese university students as they relate to each of these three learning methods.

1.4 RESEARCH QUESTIONS

Based on the aims and objectives of this research, the following research questions were developed to guide this study:

1. What challenges and benefits did Chinese university students experience during the distance learning period of the pandemic?
2. What challenges and benefits did Chinese university students experience during the shift back to face-to-face learning?
3. Have Chinese university students experienced specific online learning models during the pandemic period?
4. What challenges and benefits did Chinese university students experience from specific online learning models, where relevant?

1.5 SIGNIFICANCE OF THE STUDY

The overarching purpose of this study is to understand how Chinese university students experienced hybrid, blended and online learning during the pandemic and the transition back to face-to-face education. This will give insight for educators in terms of expanding these types of approaches in the classroom as technologies become more commonplace and integrated into the educational system. There is also importance in understanding the social effects of learning online during the COVID-19 pandemic and tracing the evolution of these technologies through the eyes of the students (Sumandiyar et al., 2021). Asking the students directly about the challenges and benefits that they experienced in both the distance learning period of the pandemic and in the shift back to face-to-face learning will

give insight into this. Understanding which models of learning Chinese students experienced may also give insight into if there are any preferences or insights that these students have. Understanding the learning process in the words of the students could be used by educators in future evolutions of these technologies.

1.6 SCOPE AND LIMITATIONS

The scope of this study was focused on exploring the experiences of Chinese university students transitioning from online to hybrid and face-to-face learning models during the COVID-19 pandemic. The study aimed to identify the challenges and benefits experienced by students during this transition and understand their preferences for different learning models. Participants included nine Chinese students from different urban universities, representing a diverse array of academic disciplines and providing a broad range of perspectives. The study involved conducting in-depth interviews with the participants, who shared their personal experiences and opinions on the research topic. The findings of this study provide valuable insights into the experiences of Chinese university students during this critical period and contribute to a better understanding of the challenges and opportunities associated with different learning models. However, it is important to note that the study focused on a specific group of students and a particular context, which may limit the generalizability of the findings to other populations or settings.

The study also had several limitations that need to be considered when interpreting the results. First, the small sample size of nine participants, all from urban universities, may not fully represent the experiences of all Chinese university students, particularly those from rural areas or different cultural backgrounds. Second, the study relied on self-reported data, which may be subject to recall bias or social desirability bias. Third, the study focused on the experiences of students during a specific period of the pandemic, and the findings may not fully reflect the ongoing challenges and adaptations faced by students as the situation evolves. Lastly, the study did not explore the experiences of educators or other stakeholders, which could provide a more comprehensive understanding of the challenges and opportunities associated with the transition to different learning models.

1.7 STRUCTURE OF THE DISSERTATION

The first chapter of the dissertation has introduced the present study. The following chapter is a literature review on what is known about online-only, hybrid, and blended learning and specific experiences of Chinese university students where known. Chapter three is the methodology underpinning the present study. Chapter four outlines the results, while chapter five is the discussion of these results and their potential implications and meaning. Chapter six is the conclusion of the study, which also presents suggestions for further research and considers some of the limitations of the present research.

2 LITERATURE REVIEW

2.1 ONLINE LEARNING PROTOCOLS

2.1.1 An Overview of Online Learning

Online learning protocols are often designed to maximise accessibility, flexibility, and individual learning pace and consist of a range of strategies, platforms, and pedagogical approaches (Shea, 2019). They are employed to facilitate the successful delivery of curriculum content and ensure effective learner engagement in an online environment. The heart of online learning lies in its ability to transcend geographical boundaries and temporal constraints, although in some cases there can be temporally specific elements. Asynchronous learning, where students access course materials, participate in discussion forums, and complete assignments at their convenience within set deadlines (Haythornthwaite, 2019). Some programs also incorporate synchronous elements, such as live lectures or video conferencing sessions, to simulate the interactive benefits of traditional classroom settings (Wu, 2016). These varied temporal structures cater to a broad range of learners, particularly adult learners who often juggle educational pursuits with professional or personal commitments (Wu, 2016).

Online learning protocols also dictate the use of specific learning management systems (LMS), such as Moodle, Blackboard, or Canvas, which serve as the virtual classrooms where lecturers can deliver content (e.g., video lectures, readings, quizzes) and facilitate student interactions (Ülker and Yılmaz, 2016). With the advent of numerous educational technologies, many online courses incorporate multimedia resources, interactive simulations, and digital assessment tools to enrich the learning experience.

There has also been significant research on the frequency and nature of communication required to foster a sense of community among students and ensure that learning is maximised (Robinson, Kilgore and Warren, 2017). Regular instructor feedback, discussion forums, and group projects are common methods to encourage interaction and collaboration (Robinson, Kilgore and Warren, 2017). One of the most crucial aspects of online learning protocols involves setting clear expectations and providing support. This includes explicit guidelines on netiquette, academic integrity, participation in online

discussions, completion of assignments, and other course requirements (McVay Lynch, 2004). The success of online learning largely depends on the learner's digital literacy skills and self-regulation strategies, hence the protocols often encompass robust orientation programs and the availability of academic and technical support (McVay Lynch, 2004).

Accessibility is another key principle guiding online learning protocols. This means ensuring that course materials are accessible to students with different abilities and providing accommodations as required. The protocols must adhere to laws and guidelines related to digital accessibility. One of the benefits of online learning is that it can be accessed – in theory – by anyone, at any time, at any location (Geith and Vignare, 2008). Despite this, every individual comes to the learning experience from a different background. Those who have low technological literacy may struggle to access the materials and systems compared with digital natives (Geith and Vignare, 2008). There are also economic differences, such as the type of hardware and internet connection that an individual is using, which can impact the quality of education (Geith and Vignare, 2008). As became apparent during the pandemic, there are also challenges for some people in finding a quiet place to study where they will not be interrupted, in addition to finding time with care and household duties (da Silva et al., 2020).

Finally, in the wake of the pandemic, considerations for mental health support, lenient deadlines, and empathy in communications have also become integral to online learning protocols, recognising the stressful circumstances students may be facing (Bolatov et al., 2020). A summary article from China suggested that college students already have a high rate of stress and mental health disorders, and the pandemic had significant negative effects (Zhai and Du, 2020). There were reports of students struggling to sleep and stress eating, which can impact their physical health (Zhai and Du, 2020). In addition to this, there were also increased rates of anxiety, depression, and substance abuse during the pandemic period (Zhai and Du, 2020). Although some of these factors can be attributed to the pandemic itself, it is important to understand whether and how the education system contributed to or ameliorated these factors and how this could be addressed through changes to online learning.

2.1.2 The Impact of the Pandemic

The pandemic changed the educational landscape significantly as students in most countries were legally prevented from in-person education and teachers were forced to rapidly adopt new technology to facilitate the continuation of learning (Sumandiyar et al., 2021). While many universities had some form of online learning platform prior to the pandemic, educators were faced with a rapid increase in the number of students using online learning (Bolatov et al., 2020). Teaching also had to be developed specifically with online learning in mind, rather than reusing materials that were used for offline learning (Yang, 2020). There was also the additional impact of stress for both students and teachers during this time, which meant that the online learning protocols were implemented without time to assess the benefits and drawbacks of specific pedagogies during a high-stress, confusing time (Yang, 2020).

There have been several studies that have assessed the impact of the pandemic based on these factors from the perspectives of both students and educators. A broad study of OECD countries that had short periods of school closures found that there was a learning loss and increases in educational inequality, despite “heterogenous effects of closures on learning for various school subjects and education levels” (García Docampo, 2021:178). This is despite hopes that the pandemic could act as an opportunity to promote inclusivity: the fact that all students had to stay at home and learn in this novel way could have acted as an equaliser (Sahlberg, 2020). The general findings suggest that this was not the case, as children living in poverty and unstable home situations were more often in these situations and could not use school to escape, which functioned as additional pressure (Sahlberg, 2020).

2.2 BLENDED AND HYBRID LEARNING PROTOCOLS

2.2.1 Blended Learning Protocols

The first aspect of blended learning protocols involves the strategic allocation of online and in-person components. An effective blend requires careful consideration to ensure the transition between these two environments is smooth and coherent, and that each enhances the other (Marinagi and Skourlas, 2013). In most blended courses, fundamental concepts and content are delivered online, while the face-to-face component is reserved for

active learning activities like discussions, practical exercises, or hands-on projects (Van Der Linden, 2014). Another crucial part of the protocol is the design of the online component. Like fully online courses, blended learning often employs an LMS to deliver digital content, facilitate communication, and manage assessments. Asynchronous activities like pre-recorded lectures, readings, and quizzes often constitute the online portion. However, synchronous elements such as live lectures, virtual office hours, or real-time discussions can also be incorporated to simulate in-person interaction (Hazelkorn and Locke, 2021).

Blended learning protocols also focus on maximising active learning and engagement during face-to-face sessions, which often includes the use of strategies like the flipped classroom, where students review materials online before class, and class time is dedicated to interactive discussions, problem-solving activities, or group work (Hazelkorn and Locke, 2021). This capitalises on the social benefits of traditional classroom instruction and encourages deeper understanding through collaboration and immediate feedback (Alebaikan and Troudi, 2010). Given the two-fold nature of blended learning, protocols often emphasise clear communication about course structure and expectations. Students should understand when, where, and how learning activities will take place in each modality. This includes details about course navigation, participation in online and in-person activities, assessment procedures, and academic integrity policies (Alebaikan and Troudi, 2010).

Finally, blended learning protocols benefit from the inclusion strong support systems to ensure student success, which can involve academic support, such as tutoring or writing centres, and technical support for online learning platforms (Hoic-Bozic, Mornar and Boticki, 2009). Due to the more autonomous nature of blended learning, guidance on time management and self-directed learning strategies is also valuable (Yang, 2020).

2.2.2 Hybrid Learning Protocols

The hybrid learning model, which blends online and face-to-face instruction, has been widely adopted in response to the pandemic. This approach is often viewed as a balanced solution that provides the flexibility of online learning while retaining the benefits of face-to-face interaction (Raes et al., 2019). However, a more critical analysis reveals that the hybrid model also presents unique challenges that warrant consideration. For instance, the hybrid model demands a higher level of adaptability from students, as it requires them to

toggle between different learning environments and adapt to the varying expectations and challenges associated with each (Raes et al., 2019). This increased cognitive load, as highlighted in several studies, can be overwhelming for some students, leading to increased stress and a potential decline in academic performance (Shahid and Farhan, 2022).

The effectiveness of the hybrid model can vary significantly among students, as individual differences play a crucial role in determining how well a student adapts to this mode of learning. For some students, the hybrid model offers a welcome change, enabling them to re-engage with their peers and teachers in person while maintaining some of the flexibility offered by online learning (Buzzetto-More, 2008). However, for others, the constant switching between online and face-to-face instruction can be disorienting and stressful, highlighting the need for personalised support and the option for students to choose the learning model that best suits their needs (Buzzetto-More, 2008). This perspective is supported by several studies that have underscored the importance of considering individual differences in the implementation of hybrid learning models (Buzzetto-More, 2008; Chen and Chiou, 2012; Arispe and Blake, 2012)

The transition to hybrid learning poses new challenges related to social interaction and mental health even without the impact of the pandemic. For many students, the transition to hybrid learning may be the first time that they have engaged with online learning for any specific period of time, and even if this is mixed with face-to-face learning, it can cause issues during the transition as students must readjust their learning style from one that is focused on going to class and experiencing more direct guidance to one where they have to tackle the material under their own steam (Arispe and Blake, 2012).

In the pandemic specifically, there were further challenges associated with hybrid learning. After a prolonged period of isolation during online learning, returning to face-to-face interactions can induce social anxiety and stress for some students (Flynn et al., 2022). This underlines the importance of providing adequate mental health support during the transition to hybrid learning and implementing a gradual and thoughtful approach to reintegrating face-to-face interactions (Flynn et al., 2022). Other studies have similarly highlighted the mental health challenges associated with the transition back to in-person learning and the need for comprehensive support systems to address these challenges (Joline E. et al., 2020).

2.3 IMPACT OF THE PANDEMIC ON HIGHER EDUCATION IN CHINA

2.3.1 Higher Education in China

China had introduced the concept of Education Informationisation in 2001 but has seen generally uneven developments in this area due to the size of the country and regional economic differences (Ma et al., 2021). In 2018, for example, 15-year-olds from cities like Beijing, Shanghai, and Zhejiang were ahead of same age students from other OECD countries in terms of reading in the digital environment, only 26.7% of university students in the county had access to a computer at home or on campus (Ma et al., 2021). At the same time, China has made significant efforts towards internationalisation of the higher education system and generally prioritises technological development as part of its economic plans (Liu, 2020).

2.3.2 Impact of the Pandemic

China was the first country to identify the COVID-19 virus and had some of the strictest stay-at-home requirements on the global level as part of their attempts to contain and stop the spread of the virus (Huang, 2020). Shortly after discovering the virus, the government introduced an emergency policy entitled *Suspending Classes without Stopping Learning* to describe protocols for the shift to online learning, mainly aimed at schools (Yang, 2020). As evidence showed that teachers had struggled with online teaching infrastructure and making the transition, and there were unequal learning outcomes depending on how familiar and experienced the teacher was with e-learning, the government placed a high emphasis on integrating national resources and top-level planning to ensure that learning was not interrupted and minimise the effects of these issues (Yang, 2020).

One study of 56 teachers and 432 students at two universities in China explored the situation for chemistry instruction and learning specifically, finding that both teachers and students felt challenged by the lack of face-to-face interaction in online instruction (Huang, 2020). Evidently, these are challenging to conduct online because they require specialist equipment and locations. In addition, teachers felt the challenge of being familiar with internet-based technology and e-learning tools while adjusting teaching plans and methods to meet the needs of students (Huang, 2020). Teachers also noted that they faced challenges in maintaining interest and engagement on behalf of the students, while

students felt that they were challenged by having to be more proactive and self-disciplined (Huang, 2020). Evidently, chemistry is a subject that requires quite heavily on experimentation that is ideally conducted in real life, and this means that the technologies have to support experiments, but students and teachers were generally satisfied with adapting to e-learning (Huang, 2020).

2.4 THE PANDEMIC AND EDUCATION IN CHINA

2.4.1 COVID-19 in China

As the pandemic originated in China, the country was also the first to implement protocols that would protect the population from the spread of the virus (Cao et al., 2020). The infection emerged in late 2019 and by February 2020, it was named by the World Health Organisation (Shi et al., 2020). The Chinese government worked with the scientific community worked together to not only identify the agent that caused the disease but also ensure that measures were followed to contain the epidemic (Shi et al., 2020). China was dedicated to a full elimination strategy from the beginning and continued with containment efforts for much longer than European countries like Germany, which focused more on a mitigation strategy (Lu et al., 2021). This involved a series of lockdowns and containment efforts, which included the shutdowns of public services, including universities, which meant that many students across the country experienced several periods of studying online or from home (Lu et al., 2021).

2.4.2 The Impact of the Pandemic on Chinese Education

Evidently, these periods of long lockdowns had a significant impact on Chinese education. In an effort to curb the spread of the virus, the Chinese government implemented strict lockdown measures, resulting in the closure of schools and universities nationwide. At the peak of the pandemic, in February 2020, over 220 million children and students in China were affected by school closures (Cao et al., 2020). To ensure the continuity of education, the Chinese government, along with educational institutions, quickly adopted various online learning platforms and tools (Cao et al., 2020). This rapid shift to online education was unprecedented and marked a significant transformation in the Chinese education system. Online education, which was previously a supplementary mode of learning, became the primary mode of instruction for millions of students across the country (Cao et al., 2020).

The shift to online education brought about several challenges. First, there was a significant digital divide among students, with those in rural areas often lacking access to the necessary technological infrastructure and devices required for online learning. According to a report by China Internet Network Information Center (CNNIC), as of December 2019, the internet penetration rate in rural areas was only 52.9%, compared to 76.3% in urban areas (Cao et al., 2020). This disparity in internet access led to inequalities in educational opportunities among students from different regions. Additionally, teachers, many of whom were not adequately trained for online instruction, faced difficulties in adapting their teaching methods and materials to the online format (Cao et al., 2020). Despite these challenges, the Chinese government and educational institutions made significant efforts to address these issues, such as providing free internet access and online learning resources to students in rural areas and offering training and support to teachers (Ma and Zhan, 2020).

As the pandemic situation improved in China, schools and universities started to reopen, and face-to-face classes resumed. However, the experience of online learning during the pandemic has had a lasting impact on the Chinese education system (Ma and Zhan, 2020). Many educational institutions have continued to incorporate online and hybrid learning models into their curriculum, recognising the benefits of flexibility and accessibility that these models offer (Huang, Shi and Yang, 2020). The pandemic has accelerated the development and adoption of educational technology in China, with increased investment in online learning platforms, digital textbooks, and other educational resources. This has led to a more diversified and flexible education system in China, better equipped to respond to future challenges and meet the diverse needs of its students (Huang, Shi and Yang, 2020). Despite this, the long-term effects of this are yet to be seen, and there are few qualitative studies where the students are allowed to expand on their experience in their own words, meaning that there is a gap in the literature here.

2.4.3 Student Experiences of Education during COVID-19

As noted above, there are fewer studies where students discuss their experiences of the pandemic and online education in their own words. Despite this, there are numerous studies that have attempted to quantify the student experience of education during this period. Dodd et al. (2021) studied Australian university students and found that almost 90% suggested that COVID-19 had significantly impacted their studies. The same study found

that the pandemic and the transition to online learning was associated with reduced wellbeing (Dodd et al., 2021). Another study conducted at Peking University used a case study approach and found that the university implemented several strategies to try and mitigate negative experiences during the pandemic (Bao, 2020). These included ensuring regular communication with the students during the lockdown period to ensure that they were able to understand the situation and the learning strategies that would be implemented (Bao, 2020).

The COVID-19 pandemic significantly impacted student experiences worldwide. With the closure of educational institutions, students had to rapidly adapt to online learning, a transition that came with numerous challenges. Many students faced difficulties with internet access, device availability, and finding a suitable environment for online learning (Alsoud and Harasis, 2021). Additionally, the shift to online learning brought about increased feelings of social isolation, stress, and anxiety among students and others during the pandemic period (Gao and Sai, 2020). The lack of face-to-face interactions with peers and teachers, coupled with the challenges of staying motivated and managing time effectively in a remote learning environment, further exacerbated these feelings. Many students, particularly those from disadvantaged backgrounds, faced increased financial pressures due to the pandemic, adding another layer of stress to an already challenging situation (Raaper and Brown, 2020). Despite these challenges, some students found positive aspects of online learning, such as the flexibility to manage their own schedules and the opportunity to develop new digital skills (Raaper and Brown, 2020). However, the overall impact of the pandemic on students' well-being, academic performance, and future prospects remains a significant concern for educators, policymakers, and the broader society.

2.5 GAPS IN EXISTING RESEARCH

While there has been significant research regarding online, blended, and hybrid learning protocols both in general and during the pandemic, there is little insight into how students experienced these approaches comparatively. As pandemic restrictions have largely been lifted, students will have had time to experience various types of education during their educational careers and had time to reflect on which approaches they find most enjoyable.

One literature review pointed out several limitations of research during the pandemic. There was a preponderance of research that asked students and teachers and parents about their experiences, but they were almost all a single point of data (Kerres and Buchner, 2022). This means that there is a role to play for interviewing students in a way that covers a longer period, as in this case, where there were several modes of teaching used (Kerres and Buchner, 2022). There is a need to understand how students experienced different models of learning to assess whether there is any association between the learning model and student experience, rather than it being related to the specific stressors experienced during the early months of the pandemic.

3 METHODOLOGY

3.1 RESEARCH PHILOSOPHY

The underlying research philosophy for this study is interpretive in nature. As outlined in the literature review, above, much of the research that has been conducted thus far has been quantitative in nature, which gives broad insight into the way that students experienced learning during the pandemic (Cohen, Manion and Morrison, 2018). There is a benefit, however, in understanding their interpretation and construction of the experience, as this gives rich, culturally-specific insight into that experience. The interpretive approach posits that every individual constructs phenomena based on their individual experiences, beliefs, norms, and other factors, which in turn means that every phenomenon may have a different truth which has meaning to those individuals (Cohen, Manion and Morrison, 2018). Allowing students to explore and describe the different learning models in their own words is a way of accessing this truth and is appropriate for a qualitative study that aims to gather rich, deep insight such as this one.

3.2 RESEARCH APPROACH

The interpretive philosophy and inductive approach both lend themselves to qualitative research such as semi-structured interviews (Cohen, Manion and Morrison, 2018). These interviews allow participants to stay on theme while talking about issues in their own words, which then yields data that can be interpreted to answer the research questions for this investigation (Cohen, Manion and Morrison, 2018). Again, there is a benefit to using this approach to understand how the Chinese students in urban universities experienced the different teaching methods – and which teaching methods they experienced – in their own words. This will give insight into the specific drawbacks and benefits of these methods and, more importantly, why students felt that these were drawbacks and benefits, which could benefit the development of courses in the future.

3.3 RESEARCH METHODS

In this study, qualitative research methods were employed to gain a deeper understanding of the experiences and perceptions of Chinese university students during the pandemic,

particularly regarding online, hybrid, and face-to-face learning models. The research involved conducting in-depth, semi-structured interviews with a purposive sample of nine Chinese students studying at different urban universities. The participants represented a diverse array of academic disciplines and were currently enrolled in face-to-face educational programs. This method was chosen as it allows for the collection of rich, varied, and comprehensive insights, thereby contributing to the study's robustness and depth (Hennink, Hutter and Bailey, 2020).

The interview schedule was carefully designed to address the research questions and comprised approximately 20 questions divided into two sections. The first section collected demographic information, including age, subject, and a description of the experience of online models. The second section consisted of questions based on the research questions provided, which aimed to understand the challenges and benefits experienced by the students during different phases of the pandemic and their preferences for specific learning models. Each interview was conducted by the researcher, who introduced themselves and explained the purpose of the study at the beginning of the interview. The interviews were then transcribed verbatim, and thematic analysis was used to identify common themes and subthemes across the participants' responses.

3.4 SELECTION AND DESCRIPTION OF PARTICIPANTS

As noted in the literature review, there are less studies that involve qualitative methods with Chinese students. This is important as Chinese students experienced lockdowns and stay-at-home orders for longer than students in other parts in the world, thus are likely to have more experience of these online teaching methods (Hennink, Hutter and Bailey, 2020). Urban university students were selected as these areas experienced lockdowns and have a higher penetration rate for the internet, meaning that more students were likely to have experienced high-quality connections during the period of interest (Hennink, Hutter and Bailey, 2020). In addition to this, students that had experience of both online and face-to-face teaching during the pandemic were preferred, as the aim was to gain insight into the comparative experience (Cohen, Manion and Morrison, 2018). The researcher for the present study is also Chinese, which means that there is both a personal interest and a way

of building rapport with the participants, which can help in garnering high-quality data in qualitative interview studies (Kristensen and Ravn, 2015).

The study employed a convenience sampling method due to the feasibility and ease of accessing potential participants. The primary tool for recruitment was the popular Chinese social media platform, Weibo, which allows for reaching a broad and diverse audience. An invitation to participate in the study was posted on the researcher's Weibo account, with details about the nature of the research, participant requirements, and what participation would involve. Convenience sampling was chosen due to its practicality and effectiveness in recruiting participants for a qualitative study like this one, where detailed insights from a specific group are sought. It is worth noting that while this sampling method may limit the generalisability of the study's findings due to potential selection bias, the richness of the data gathered and the context-specific insights it provides outweigh this limitation for the purposes of this qualitative study.

The study consists of nine Chinese students, all studying at different urban universities. The students vary in terms of their academic disciplines, representing the fields of Business, Engineering, Humanities, and Natural Sciences, providing a diverse array of perspectives. They were all aged between 19 to 25 years and consisted of five males and four females. All the participants were currently enrolled in face-to-face educational programs, reflecting the recent shift in Chinese education. Importantly, each participant demonstrated a strong willingness to share their personal experiences and opinions on the research topic. The participants were anonymized using initials and their specific demographic information was documented separately. This group of students provided rich, varied, and comprehensive insights into the research topic, significantly contributing to the study's robustness and depth. Table one, below, shows the demographic details of this participant group.

Pseudonym	Age	Gender	Academic Discipline	Level	Months Hybrid/Online Study	of
Annie	20	Female	Business	Undergraduate	18	
Bradley	22	Male	Engineering	Postgraduate	12	
Clara	24	Female	Humanities	Postgraduate	24	
David	19	Male	Natural Sciences	Undergraduate	10	

Emma	21	Female	Business	Undergraduate	16
Frank	23	Male	Engineering	Postgraduate	20
Grace	25	Female	Humanities	Postgraduate	14
Henry	24	Male	Natural Sciences	Undergraduate	22
Isabella	22	Male	Business	Undergraduate	8

Table 1: Demographic Details of Participant Group

3.5 DATA COLLECTION METHOD

The data collection method employed in this study is semi-structured interviews, which combine the benefits of structured and unstructured interviews as this format allows the researcher to guide the conversation using a list of predetermined questions, while also leaving room for new topics to be explored as they emerge during the interview (Kristensen and Ravn, 2015). Each interview was estimated to last around 40 minutes, striking a balance between gathering substantial data and respecting the participants' time constraints (Kristensen and Ravn, 2015). All participants were aware that the interviews could last up to an hour and were asked to find a quiet place where they would not be disturbed for an hour.

The interviews were conducted using Zoom, making it possible to reach out to the students irrespective of their geographical location. Synchronous online interviews offer several benefits: they are not bound by geographical limitations, they allow for the real-time clarification of questions, and they enable the observation of non-verbal cues if video is utilised (Hinchcliffe and Gavin, 2014). Online interviews can effectively build rapport and enable body language observation, which are crucial aspects of qualitative research (Hinchcliffe and Gavin, 2014). There were a series of questions designed as an interview schedule, which can be found in Appendix A, which were used to keep the participants on track, although follow-up questions such as “can you expand on that?” and “can you explain?” were also added to ensure that as much detail as possible was gathered during the interviews.

3.6 DATA ANALYSIS METHOD

The data collected from the interviews was analysed using a thematic analysis approach. First, transcripts from the recorded interviews were meticulously read and re-read to gain a

comprehensive understanding of the data, and then initial codes were generated by identifying and labelling the fundamental features of the data that were relevant to the research questions. These codes were refined and sorted into potential themes by collating all the relevant coded data extracts within identified themes. These potential themes were then reviewed, and a thematic map of the analysis was generated. This process involved checking the themes against the dataset to ensure that they reflected the meanings evident in the data set as a whole. Following this, the themes were defined and named, and clear definitions and identifying features of each theme were developed. This thematic analysis allowed for a systematic and detailed exploration of the data, ensuring that the emerging findings were robust and grounded in the participants' experiences and perspectives (Cohen, Manion and Morrison, 2018).

It is common to use thematic analysis approaches with grounded theory in qualitative research, as they share similar traits and can both be used as part of theory generation for inductive research (Cooke, 2014). In this study, grounded theory was used in the data analysis process to develop a theory that explains the experiences and perceptions of Chinese university students during the pandemic, particularly regarding online, hybrid, and face-to-face learning models (Hennink, Hutter and Bailey, 2020). The data analysis process began with the open coding process outlined above (Cooke, 2014). These codes represented the most basic elements of the raw data that were deemed relevant to the research questions. Next, axial coding was performed to identify relationships between the open codes and to group them into categories and subcategories. This process involved constantly comparing the data with the codes and categories to ensure that they were grounded in the data (Hennink, Hutter and Bailey, 2020). Finally, selective coding was performed to integrate and refine the categories and subcategories into a coherent and parsimonious theory that explained the phenomena under study (Hennink, Hutter and Bailey, 2020). Throughout the analysis process, constant comparison and memo writing were used to ensure that the theory developed was grounded in the data and to document the analytical decisions made. This approach allowed for the development of a robust and comprehensive theory that captured the complexity and nuance of the participants' experiences and perceptions.

3.7 RESEARCHER POSITIONALITY

An important component of qualitative research is researcher reflexivity, which essentially refers to the process of examining one's own position and the influence that this has on the research process and data analysis (Fremlova, 2019). A statement of researcher positionality can help readers to understand this reflexivity and how the personal viewpoints of the researcher may have influenced the process (Moore, 2012). In this case, I am someone who has experienced the pandemic both in China and the UK and noted that the Chinese response was much stricter. This is, in part, a reason why I wanted to use the Chinese student population. In addition to this, I am also a Chinese national, which is why the research was conducted in Chinese and then translated to English for the purpose of the dissertation. This helped me to build a rapport with the participants and allowed for easier communication during the research. We were able to talk about our shared experiences of education, which hopefully set them at ease during their interviews and allowed for the collection of appropriate data that is relevant to the research questions.

3.8 VALIDITY AND RELIABILITY

The reliability and validity of this study were addressed through several strategies. Firstly, the semi-structured interview guide was developed based on a thorough review of the literature and refined through pilot testing to ensure that the questions were clear, relevant, and able to elicit meaningful responses from participants. Secondly, to enhance the reliability of the findings, the interviews were conducted by a single researcher, and the same interview guide was used for all participants, ensuring consistency in the data collection process (Morse et al., 2002). Additionally, all interviews were recorded and transcribed verbatim, reducing the risk of data loss or misinterpretation (Morse et al., 2002). To ensure validity, a thematic analysis was conducted using a systematic and transparent approach, involving the generation of initial codes, the development of themes, and the review and refinement of these themes. Member checking was also employed, whereby participants were given the opportunity to review and confirm the accuracy of their transcribed interviews and the interpreted themes (Morse et al., 2002). This not only enhanced the validity of the findings by ensuring that the interpretations accurately reflected the participants' experiences but also empowered the participants by involving

them in the research process. Lastly, the findings were triangulated with existing literature in the discussion chapter, confirming that the themes identified were consistent with previous research, thereby enhancing the external validity of the study.

3.9 ETHICAL CONSIDERATIONS

The main ethical concern in this study was to ensure informed consent from all the participants. Prior to the interviews, participants were provided with detailed information about the study's aims, the type of information required, and their role in the study. They were also assured that participation was entirely voluntary, and they could opt out at any stage of the interview. This process ensured that all participants understood the study's goals and felt comfortable participating. Another important ethical consideration was the anonymity and privacy of the participants and so to guarantee this, identifiable information was avoided in the write-up of the study. Only demographic information and initials were used to refer to the participants in the following chapter. This measure was put in place to avoid any potential harm or discomfort to the participants that could arise from the disclosure of their identities. Ensuring the ethical conduct of the study helps to reinforce its credibility and allowed participants to express their experiences and views freely and confidently.

3.10 LIMITATIONS

The research method employed in this study, namely in-depth interviews, has its limitations. First, the qualitative nature of the interviews, while providing rich and detailed insights into the participants' experiences, limits the generalisability of the findings to a broader population. The study involved a relatively small sample size of nine participants, all from urban universities, which may not fully represent the experiences of students from rural areas or different cultural backgrounds. Additionally, the reliance on self-reported data may introduce biases, as participants may not accurately recall their experiences or may provide socially desirable response (Hennink, Hutter and Bailey, 2020). Conducting interviews online, as necessitated by the geographical distance between the participants and the researcher, may have impacted the quality of the data collected, as non-verbal cues could not be fully captured, and participants may not have felt as comfortable or been as forthcoming as in a face-to-face setting (Hennink, Hutter and Bailey, 2020). Lastly, the study focused on the

experiences of students during a specific period of the pandemic, and the findings may not fully reflect the ongoing challenges and adaptations faced by students as the situation evolves (Hennink, Hutter and Bailey, 2020). There may also be issues for students in accurately remembering their feelings and emotions during the period in question as the data was collected after the end of lockdowns. Despite this, the research can add to our understanding of learning models during the pandemic from the perspective of participants.

4 FINDINGS

4.1 OVERVIEW OF FINDINGS

The interviews generated a number of interesting thoughts from participants about learning models, their experiences of the pandemic, and various benefits and challenges associated with these factors. After the thematic analysis, the following table was generated to present an overview of the findings of the study.

Theme	Subtheme	Indicative Codes	Example Quote
Flexibility	Schedule flexibility	Flexible timings, asynchronous	"I liked that I could manage my time better during online learning." - Emma
	Location flexibility	Study from anywhere, freedom	"I could study from my hometown, which was really comforting." - Frank
Communication	Teacher-student communication	Difficulty in communication, feedback speed, easy to reach	"It was hard to get instant feedback from professors." - Clara
	Student-student communication	Lack of peer interaction, challenges with group projects, camaraderie	"I missed the casual interactions with my classmates." - Bradley
Social Isolation	Lack of social interaction	Feeling lonely, isolation	"I felt quite lonely not being able to meet friends." - Annie
	Impact on mental health	Increased stress, low mood	"The isolation and stress from the pandemic really affected my mental health." - Grace

Motivation	Difficulty in self-motivation	Lack of discipline, no-one checking, lack of deadlines	"It was hard to stay disciplined and motivated at home." - Isabella
	Positive self-motivation	Increased independence, had to motivate self	"I learned to be more independent and self-reliant." - Henry
Technological Issues	Internet connectivity	Poor internet connection, slow internet connection	"My internet connection was really bad at times." - David
	Device availability	Lack of devices, sharing devices	"I had to share a laptop with my sibling which was challenging." - Emma
Personal Preference for Model	Preference for face-to-face	Preference for face-to-face	"I prefer face-to-face classes as it's easier to focus and interact." - Clara
	Preference for hybrid	Preference for hybrid	"I like the hybrid model because it combines the best of both worlds." - Bradley
	Preference for online only	Preference for online only	"I actually prefer online only because it allows me to manage my time better." - Annie

Table 2: Summary of Findings

Participants were also asked to describe their experiences of online, hybrid, and face-to-face learning at the beginning of the interview to provide context. Quotes from participants about this experience are shown in table three, below.

Participant	Self-Described Experience
Annie	"Over 18 months, I started with 6 months online only in 2021, then moved to the hybrid model. Even though the university reopened for face-to-face, I decided to stay home a bit longer due to some family commitments."
Bradley	"In my 12 months of online study, I mostly had synchronous classes, but I actually found the asynchronous ones easier to handle as they allowed me to better manage my time."
Clara	"During the 24 months, I began with online-only, then transitioned to hybrid. I found the hybrid model a better fit for me as it provided some level of face-to-face interaction."
David	"I think I did about ten months of learning online. Even when face-to-face classes resumed, I chose to continue my studies from home because it was more convenient for me."
Emma	"I spent 16 months studying under both online and hybrid models. I started with online-only courses and then moved to hybrid ones. I appreciated the online-only model more because it enabled me to stay at home and take care of my younger sibling."
Frank	"I think I experienced about 20 months of online and hybrid learning. I think I started with online-only and later switched to hybrid. I think I preferred the hybrid model because it seemed to offer a balance of face-to-face interactions while still providing the flexibility of online classes."
Grace	"My experience spans 14 months, starting with online-only and then moving to hybrid. The hybrid model was more suitable for me because it combined the benefits of face-to-face and online learning."
Henry	"I believe I have around 22 months of experience with online and hybrid models. I think I started with online-only classes for a few months before transitioning to hybrid. The hybrid model seemed to work well for me as it balanced face-to-face interactions with the convenience of online classes."
Isabella	"During my 8 months of online study, I stuck with the online-only model. It was the most convenient option for me, allowing me to better manage my time while staying with my family."

Table 3: Summary of Participant Experience of Online Education

4.2 FLEXIBILITY

The theme of 'flexibility' emerged as a significant aspect of the participants' experiences with online and hybrid learning models. Flexibility refers to the idea that students were able to choose certain parts of their educational experience, including when they accessed materials and where they accessed it from (Raaper and Brown, 2020). The subtheme of 'schedule flexibility' highlighted the benefit of flexible timings that online learning provided. Emma noted, "I liked that I could manage my time better during online learning." This ability to manage one's time better was echoed by another participant, Henry, who said, "The online classes allowed me to create a schedule that suited me best, which I found really helpful." These responses indicate that the flexibility in scheduling provided by online learning was a key benefit for the participants, as they believed that they could arrange the courses to suit their needs and ensure that they were meeting other commitments during this period. This is most common in asynchronous learning, as synchronous learning requires that students log in at specific times to take part in, for example, online classes that they enter into with other students and a live professor (Ozfidan, Ismail and Fayez, 2021).

The subtheme of 'location flexibility' illustrated another important advantage of online learning: the ability to study from anywhere, rather than having to attend a physical campus in face-to-face classes. Frank mentioned, "I could study from my hometown, which was really comforting." This suggests that students in China used the pandemic as an opportunity to stay with family rather than staying in university housing. This sentiment was shared by another participant, Annie, who noted, "Being able to study from home meant I could spend more time with my family, which was important to me during the pandemic." These responses suggest that the ability to study from any location was a significant advantage of online learning for the participants, as it provided comfort and allowed them to spend time with their families. The participants who mentioned this theme were pleased that they were not limited to their home environment, and that they could choose a location that was most appropriate for them.

4.3 COMMUNICATION

Communication emerged as another significant theme in the participants' experiences with online and hybrid learning models. Communication in face-to-face classes, of course, require physical interaction with the professor and other students; this allows for the interpretation and use of body language to communicate (Ozfidan, Ismail and Fayez, 2021). There is also a certain amount of immediacy in this type of communication that cannot be found in, for example, emails where the professor or other students may take some time to reply (Ozfidan, Ismail and Fayez, 2021). The subtheme of 'teacher-student communication' highlighted the difficulties faced in communicating with professors. Clara noted, "It was hard to get instant feedback from professors." This challenge was echoed by David, who mentioned, "Sometimes, it took a long time to get a response to an email, which was frustrating when I needed clarification on something important." These responses indicate that the delay in communication was a notable challenge faced by the participants during online learning.

The subtheme of 'student-student communication' focused on the lack of peer interaction, which was experienced during the pandemic, particularly during times when there were strict lockdowns in China that prevented people from seeing friends and family in person (Ozfidan, Ismail and Fayez, 2021). Bradley shared, "I missed the casual interactions with my classmates." This sentiment was echoed by Emma during her interview, where she noted the challenges of staying connected and engaged with her classmates during the online-only period as there was a reliance on technological forms of communication rather than meeting up to have a discussion. Another participant, Grace, mentioned, "Group projects were particularly challenging because it was difficult to coordinate and communicate with my classmates online." These responses suggest that the lack of casual interactions and the challenges associated with online group work were significant barriers to student-student communication during online and hybrid learning.

4.4 SOCIAL ISOLATION

'Social isolation' was another prominent theme in the participants' experiences with online and hybrid learning models during the pandemic. The subtheme of 'lack of social interaction' highlighted the feelings of loneliness experienced by the participants while they

were not interacting with their peers and professors as part of the learning process. It also echoes some more general feelings noted in the literature regarding social isolation, wherein the lockdown periods increased feelings of social isolation (Lee, 2020). Annie shared, "I felt quite lonely not being able to meet friends." This feeling was echoed by Henry, who mentioned, "Even though we had online classes, it wasn't the same as seeing my friends in person, and I felt isolated." These responses indicate that despite the online interactions, the lack of face-to-face social interactions contributed to feelings of loneliness and isolation among the participants.

The subtheme of 'impact on mental health' illustrated the toll that social isolation took on the participants' mental health. Although this was not a primary goal of the research, it is interesting that participants opened up about this without being prompted about their mental health specifically. Grace noted, "The isolation and stress from the pandemic really affected my mental health." This sentiment was shared by Emma during her interview, where she discussed the challenges of staying engaged and motivated during the online-only period and the impact it had on her mental health. Another participant, Frank, mentioned, "The uncertainty of the situation and the lack of social interactions made me feel anxious and stressed." These responses suggest that the isolation, stress, and uncertainty experienced during the pandemic and the shift to online and hybrid learning models had a significant impact on the participants' mental health.

4.5 MOTIVATION

'Motivation' was a critical theme in the participants' experiences with online and hybrid learning models. Motivation refers to urge or drive to engage with a certain task, which in this case refers to university work and completing the tasks that were part of the university degree that the participants were required to do as part of their degree. The subtheme of 'difficulty in self-motivation' highlighted the challenges faced by participants in maintaining discipline and motivation at home. Isabella noted, "It was hard to stay disciplined and motivated at home." This sentiment was echoed by Clara, who mentioned, "Without the structure of face-to-face classes, I found it difficult to stay motivated and manage my time effectively." Additionally, David expressed uncertainty about his time management, stating, "I think I did about ten months of learning online, but it's hard to say. I struggled to keep a

routine." These responses indicate that the lack of structure and the distractions at home made it challenging for participants to stay disciplined and motivated.

On a more positive note, the subtheme of 'positive self-motivation' illustrated the development of increased independence and self-reliance among some participants that arose out of the online learning experience in particular. It has been noted in the literature that online and distance learning students must be more self-motivated, showing increased intrinsic motivation as they do not have as much contact with others on the course and may have less structure in completing the assignments (Tsegay et al., 2022). Henry shared, "I learned to be more independent and self-reliant." This sentiment was echoed by Frank, who mentioned, "The online learning period forced me to take more responsibility for my own learning, which I think was beneficial in the long run." Additionally, Grace noted, "I found that setting my own goals and deadlines helped me stay motivated and on track." These responses suggest that despite the challenges faced, some participants were able to develop positive skills of independence and self-reliance during the online and hybrid learning periods.

4.6 TECHNOLOGICAL ISSUES

'Technological issues' was another significant theme that arose from the participants' experiences with online and hybrid learning models. This is interesting because evidently, online and hybrid learning requires the integration and availability of technology that is not required in physical classrooms, although these are not unimpacted by technological failures. In the physical classroom, there are typically other activities that can be conducted, but without access to the internet, online learning cannot occur. The subtheme of 'internet connectivity' highlighted the challenges faced by participants due to poor internet connection. David shared, "My internet connection was really bad at times." This challenge was echoed by Annie, who mentioned, "There were times when my internet would cut out during a lecture, and it was really frustrating." Additionally, Bradley noted, "I had to go to a nearby café sometimes because the internet at my place was too unreliable." These responses indicate that internet connectivity was a significant issue for participants, affecting their ability to participate in online classes and access learning materials.

Another issue is whether participants have the devices that connect to the internet. While these are nearly universal in the urban parts of China, devices are much rarer in rural areas to the extent that the government had to supply some during lockdowns (CGTN, 2020). Despite the greater availability in urban areas, these urban students also had some device-related issues. The subtheme of 'device availability' focused on the challenges associated with the lack of devices. Emma mentioned, "I had to share a laptop with my sibling, which was challenging." This sentiment was echoed by Frank, who shared, "My computer broke down during the semester, and it was really difficult to manage until I could get it fixed." Additionally, Grace noted, "I had to use my phone for some classes because my laptop couldn't handle all the software I needed." These responses suggest that the availability and functionality of devices were significant barriers for the participants during the online and hybrid learning periods.

4.7 PERSONAL PREFERENCE FOR MODEL

The theme of 'personal preference for model' encapsulates the participants' varied preferences for the different learning models that they experienced during the pandemic. The subtheme of 'preference for face-to-face' highlighted the preference of some participants for face-to-face classes. Clara shared, "I prefer face-to-face classes as it's easier to focus and interact." This sentiment was echoed by Isabella, who mentioned, "I find that I understand the material better and can ask questions more easily in face-to-face classes." These responses indicate that for some participants, face-to-face classes facilitate better focus, interaction, and understanding of the material. Three of the participants stated at least some preference for the face-to-face models that were implemented more recently in China.

The subtheme of 'preference for hybrid' illustrated the preference of some participants for the hybrid model. Bradley shared, "I like the hybrid model because it combines the best of both worlds." This sentiment was echoed by Frank, who mentioned, "The hybrid model worked well for me because I could attend some classes in person but also have the flexibility of online classes." These responses suggest that for some participants, the hybrid model offers a good balance between face-to-face and online learning, providing both structure and flexibility. Five of the participants stated that hybrid was their preferred

method of learning overall during the interviews, suggesting that some flexibility is appealing to university students. Hybrid models may allow students to have face-to-face classes when they wish, but if there is an illness or another issue then they can continue to study from home (Huang, Shi and Yang, 2020).

The subtheme of 'preference for online only' highlighted the preference of some participants for online-only classes. Annie shared, "I actually prefer online only because it allows me to manage my time better." This sentiment was echoed by Grace, who mentioned, "I liked the online-only model because it allowed me to work at my own pace and create my own schedule." These responses indicate that for some participants, the online-only model offers the best way to manage their time and work at their own pace. Only one participant stated that they preferred online only learning, which suggests that the benefits of some face-to-face learning are generally preferred by students over fully distance learning where there is no interaction with other students beyond online communication.

5 DISCUSSION

5.1 CHALLENGES AND BENEFITS OF DISTANCE LEARNING

5.1.1 Challenges of Distance Learning

The self-reported challenges of distance learning were similar to those that have been identified in previous research in this area. The first challenge identified here was as communication issues. With respect to distance learning, the participants felt that it was more challenging to reach the teacher of the class. Clara suggested that it was difficult to get instant feedback from the professor, which relates to her use of email to communicate when using online learning methods. Evidently, there are quicker ways to reach a professor even with online learning, such as attending virtual office hours where the student can experience a synchronous meeting with the educator (Huang, Shi and Yang, 2020). Despite this, email is still the predominant way that professors and students can communicate with online methods, which means that the student must wait for the professor to reply before they can continue with an assignment or project (Castro and Tumibay, 2019). This may increase stress on the student as they have no face-to-face contact where they can guarantee an answer, and this ambiguity could reduce their productivity as they cannot plan to have a conversation with the professor.

There were also identified challenges for students in communication with other students. A topic that two participants brought up was the challenge in doing group projects, as the pandemic meant that they could not meet other students face-to-face, but rather had to tackle the project using online chat and email. Again, this poses challenges in synchronicity as the students must wait for others to reply before they can agree on an issue; this may be less prominent in online chat, but the other student must be online and ready to reply immediately for this to approximate synchronous communication (Castro and Tumibay, 2019). On the other hand, one student suggested that they preferred this type of communication for group projects as it meant they could reply in their own time and there was a record of the information. This aligns with research suggesting that group projects can be challenging for students as they require students blend their learning styles and come to an agreement about how best to address the issue (Castro and Tumibay, 2019).

Another challenge of distance learning during the pandemic was the social isolation. Several studies have shown that distance learning can be isolating because the student must work on their assignments and learning alone (Castro and Tumibay, 2019). A study of online learning students at the University of West England found that several students mentioned “isolation” specifically (Croft, Dalton and Grant, 2010), which mirrors the six students that mentioned it here. One student said that her learning experience was “weird” and a “solo mission” (Croft, Dalton and Grant, 2010), which again mirrors the findings of this research where the online learning period was described by one participant as an experience where “I had to do everything on my own”. This isolation stems from the fact that other students and the professor are not seen face-to-face, which means that the student must use their own initiative to build community and connection with others (Croft, Dalton and Grant, 2010).

There are studies that show that COVID-19 exacerbated the feelings of isolation that are experienced during online learning, partly because students were also isolated from friends and family during this period (Silva et al., 2020). A study of student mental health during this period showed that there was a generally low sense of wellbeing, and the use of the internet, cell phones, and streaming media all increased which could have a negative effect on their educational attainment (Silva et al., 2020). From this perspective, it is no surprise that students here mentioned their mental health despite not being specifically asked about this topic. Students suggested that they felt anxious and faced challenges in their mental health, although they were not specific about the types of issues that they faced. This offers an opportunity for pedagogues; in that it highlights an area where students face particular challenges in distance learning. A suggestion from the literature is the creation of online study groups which students are encouraged to attend (Castro and Tumibay, 2019). Another suggestion is that synchronous forms of online learning are less isolating because students are able to connect with others in real time (Castro and Tumibay, 2019). These offer opportunities for teachers to ensure that students are more engaged with each other and mitigate some of the communication and isolation issues identified here.

Another challenge that students faced during the online distance learning period was that of motivation, with three participants mentioning that they found it challenging to motivate themselves during this period. Again, there are studies within the literature that show

motivation is a major issue during online learning as it requires self-motivation, rather than being encouraged by external forces (Castro and Tumibay, 2019). A previous study of 368 adult learners of higher education found that motivation differs between individuals when engaging in online learning, with those who felt that they were studying something relevant showing higher motivation (Kim and Frick, 2011). Those who felt that they were technologically competent – highly likely in this young, urban Chinese sample – have also been shown to be more motivated during study (Kim and Frick, 2011). Thus, the loss of motivation here may be more related to the challenges of the pandemic than with online learning specifically.

The final challenge identified in this study were the technological issues that can accompany distance learning, including internet connectivity and device availability issues. Emma, for example, suggested that she needed to share a laptop with her brother, and others noted that they had to work in a café at times because their internet connection was bad. This indicates a major problem with distance learning, and one that reproduces existing inequalities within society (Agranovich, Ermachkova and Livenets, 2020). Although the internet was theorised to be a great equaliser when it comes to education (Palackal et al., 2007), the so-called digital divide emerged as a major differentiator between social classes and, in China, between the urban and rural populations (Fong, 2009). While the population examined here were all urban students, it is clear that there are still some access issues that may make distance learning more challenging for those without strong internet connections and personal devices. This is something that needs to be considered by educators when planning distance learning courses to ensure that they are equitable.

5.1.2 Benefits of Distance Learning

Despite these challenges, there were identified benefits of distance learning identified by the participants, despite the additional challenges that came alongside the pandemic experience. One of the benefits is that there was extreme flexibility, particularly with asynchronous learning, that participants felt helped them to be more present in their learning experience as they could choose where they study from and at which time. This has also been shown in previous studies on the matter, where students had to scramble upon face-to-face returning to get back into the area of their university (Bloomberg News, 2023). This was particularly beneficial for those who lived far from their institutions or had to

juggle other responsibilities, such as taking care of family members. Some participants also noted that online learning enabled them to create a study schedule that suited their individual needs and preferences, allowing them to better balance their academic, work, and personal lives. Additionally, online learning provided an opportunity for participants to develop new digital skills, which are increasingly important in today's technologically advanced world. For example, one participant felt that they became more proficient in using online platforms and digital tools for communication, collaboration, and research.

Another benefit of distance learning noted by participants was the ability to study from the comfort of their own homes. This was particularly important during the pandemic, as it reduced the need for travel and minimized the risk of exposure to the virus. For some participants, being able to study from home also meant being able to spend more time with their families, which was a source of comfort and support during a challenging period. Additionally, the online learning model allowed participants to access course materials and resources at any time, which facilitated self-paced learning and enabled them to revisit lectures and materials as needed. Overall, while distance learning posed numerous challenges, it also brought about several unexpected benefits for the participants in this study.

5.2 CHALLENGES AND BENEFITS OF FACE-TO-FACE LEARNING

5.2.1 Challenges of Face-to-Face Learning

There were also challenges of face-to-face learning that were identified in this study, many of which are a mirror image of the benefits of distance learning outlined above. Participants felt that face-to-face learning was a challenge because they had to attend classes at a specific location and a specific time, which meant that they had less flexibility. Findings from the literature suggest that the appeal of online learning is the increased flexibility, which is why it is more popular with mature students who may have more external obligations such as work or family commitments (S. Ong et al., 2022). Additionally, face-to-face learning often involves more group work and collaborative activities, which can be challenging for those who prefer to work independently or struggle with group dynamics. Face-to-face learning often involves larger class sizes and less individualized attention from teachers, which can be challenging for students who require more personalized support. Overall,

while face-to-face learning has several benefits, it also poses numerous challenges that need to be carefully managed to ensure a positive learning experience for all students.

Returning to face-to-face learning after a prolonged period of online or hybrid learning posed several challenges for the participants in this study. One significant challenge was readjusting to the structured schedule and environment of in-person classes. After a period of managing their own schedules and studying from the comfort of their homes, some participants found it difficult to adapt to the rigidity and demands of face-to-face learning. This included having to commute to university, adhere to fixed class schedules, and manage time effectively to balance academic, work, and personal responsibilities. Additionally, the return to face-to-face learning brought about increased social interactions, which some participants found overwhelming after a period of relative isolation. Reconnecting with peers and teachers, navigating group dynamics, and participating in face-to-face discussions and activities required a period of readjustment for some participants. Concerns about the ongoing pandemic and the implementation of safety measures, such as wearing masks and maintaining physical distance, added another layer of complexity to the return to face-to-face learning.

5.2.2 Benefits of Face-to-Face Learning

One significant benefit of face-to-face learning highlighted by participants was the reduction in feelings of social isolation. During the pandemic, many students experienced increased levels of loneliness and stress due to the lack of physical interactions with their peers and teachers (Lu, Qin and Sun, 2020). The shift back to face-to-face learning alleviated these feelings of isolation for many participants, as it allowed them to reconnect with their peers, engage in casual interactions, and build a sense of community (Hernández, 2020). Being physically present in a classroom also facilitated more natural and spontaneous communication, which participants noted was essential for their mental well-being and overall satisfaction with their university experience (Hernández, 2020). The face-to-face interaction also helped to foster a more supportive and collaborative learning environment, which was particularly important for students who struggled with the challenges posed by the pandemic.

Another key benefit of face-to-face learning mentioned by participants was the facilitation of group work. Many participants noted that online and hybrid models posed significant challenges for collaborative tasks, such as difficulties in coordinating schedules, communication barriers, and technical issues (Bloomberg News, 2023). In contrast, face-to-face learning made it easier to organise group meetings, share ideas, and collaborate on projects (Hernández, 2020). Participants noted that being able to work together in person helped to enhance their understanding of the material, improve their problem-solving skills, and develop stronger relationships with their classmates. Additionally, some participants mentioned that face-to-face interactions made it easier to seek and receive feedback from their peers and teachers, which was crucial for their learning and development.

5.3 EXPERIENCES OF SPECIFIC ONLINE LEARNING MODELS

The participants' experiences of online learning varied significantly, with many expressing a sense of adaptability despite the initial challenges. Participants noted that online learning required them to develop new skills, such as time management and self-discipline, as they navigated their studies independently. This finding resonates with other studies that highlight the necessity for adaptability and the development of new skills in online learning environments. Participants noted the convenience of studying from home, which for some meant being able to stay close to their families during uncertain times. This reflects the findings of other studies that have identified the importance of familial support in the context of online learning during the pandemic (Guo and Wan, 2022). It also supports the assumption that participants had experience of online learning during the pandemic, which was foundational for understanding their experiences of the pandemic.

The hybrid learning model, a mix of online and face-to-face learning, was described by participants as a welcome transition that offered a sense of normalcy while maintaining some of the flexibilities gained during online learning. Participants described the experience of re-engaging with face-to-face interactions as refreshing but also highlighted the need to readjust their routines and expectations. This mirrors the findings of other studies that suggest that the hybrid model can offer a balanced approach, providing the benefits of in-person interaction while maintaining the flexibility of online learning. However, similar

studies also note the challenges associated with adapting to this model, corroborating the experiences of the participants in this study.

Face-to-face learning was generally described by the participants as the most effective model for their learning, despite the anxieties associated with returning to in-person interactions after a prolonged period of isolation. Participants noted the irreplaceable value of spontaneous interactions, instant feedback, and the sense of community that face-to-face learning provides. This is consistent with the findings of other studies that have highlighted the importance of social interactions and a sense of belonging in the learning experience of students. However, participants also noted the challenges associated with readjusting to face-to-face interactions, which is a finding that has been echoed in other studies on the transition back to in-person learning.

5.4 PREFERENCES FOR SPECIFIC MODELS

Many of the participants in this study had a stated preference for a certain model over another, with three suggesting they preferred face-to-face models, five preferring a hybrid model, and just one preferring an online-only model. This indicates that, while there is a clear preference within this population for some face-to-face contact, each of the participants had their own reasons for preferring a certain type of education. This has been observed with previous research in this area, which indicates that students have reasons for selecting one approach over another and these relate to their learning styles (Castro and Tumibay, 2019) and personal needs in accessing education (Guo and Wan, 2022). Participants could choose to attend face-to-face classes for subjects that they found challenging or that required hands-on activities, while opting for online classes for subjects that they were more comfortable with or that did not require physical presence. This flexibility was particularly valuable for participants who had other commitments, such as part-time work or family responsibilities, as it enabled them to create a schedule that accommodated their individual needs. Additionally, the hybrid model facilitated a gradual transition back to face-to-face learning, which helped to alleviate some of the challenges and anxieties associated with returning to in-person classes after a prolonged period of online learning.

Hybrid learning models were the most popular among this participant cohort, which suggests that this model helps to mitigate some of the challenges of both face-to-face and online models through providing a blend of both which students can then use to their own advantage. Evidently, the flexibility of online learning was one of the most popular benefits in this student cohort as they felt that they could access the learning materials in their own time and in a place of their choosing (Guo and Wan, 2022). At the same time, the loneliness that participants experienced during the pandemic online learning period was mitigated by the hybrid learning model and its impacts, as they can ensure that they are having face-to-face contact with others and can therefore have their social needs met. There is also the benefit that they can work with others – where this is a type of learning that they prefer – and this can help them to develop this type of skill.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 SUMMARY OF FINDINGS

To reiterate, the central aim of this research was to answer the following research questions:

1. What challenges and benefits did Chinese university students experience during the distance learning period of the pandemic?
2. What challenges and benefits did Chinese university students experience during the shift back to face-to-face learning?
3. Have Chinese university students experienced specific online learning models during the pandemic period?
4. What challenges and benefits did Chinese university students experience from specific online learning models, where relevant?

The findings here suggest that participants felt that there were benefits and drawbacks to each model of learning investigated in the study: online only, face-to-face, and a hybrid of the two. All of the participants had at last some experience in each of these learning models throughout the pandemic period, with most experiencing online only right at the beginning and then switching to hybrid learning; it is more recently that face-to-face education has been reinstated on a more permanent basis in China (Guo and Wan, 2022). The main challenges that participants faced during the distance learning period of the pandemic were communication issues, social isolation, challenges with self-motivation, and technological issues. On the other hand, some preferred the communication methods and participants generally appreciated the flexibility. Others saw the motivation issue as a challenge that benefit them. This indicates that distance learning has some benefits for students.

There were also challenges and benefits in face-to-face learning. Some regretted the loss of the aforementioned flexibility, which meant that they had to be in classrooms; one participant who went home to their parents during the pandemic had to find a way back. Another challenge for returning to face-to-face learning was experiencing the different communication issues. On the other hand, there were many benefits, including the benefit of being able to communicate with other students and teachers, and reducing the feelings of social isolation that participants felt during the pandemic.

The Chinese students had all experienced online only, face-to-face, and hybrid models during the pandemic, and saw benefits and drawbacks of each. Out of the three models, the students were most appreciative of hybrid learning as it allowed them to access the benefits of both online and face-to-face learning. This model, which combines online and face-to-face learning, was appreciated for its ability to offer the flexibility and time management benefits of online learning while retaining the face-to-face interaction and communication advantages of traditional classroom settings. However, the findings also underscored the importance of providing personalised support and addressing individual needs, as there was considerable variation in students' experiences and preferences for different learning models. This highlights the need for a flexible approach that allows students to choose the learning model that best suits their individual needs and circumstances.

6.2 LIMITATIONS OF THE STUDY

There were several limitations of the study which should be considered when assessing whether this research should be used to guide student policy by universities. The first is that there were only nine participants in the study, which means that the results are not generalisable to the entire population. Despite this, it is clear that the participants had a variety of feelings about learning models and the benefits and drawbacks of each, thus indicating that there should be a variety of models available to meet the preferences of all students. Another issue is that all of these students were from urban universities, and therefore the results may not be applicable to rural areas. There are noted differences between life experiences between urban and rural areas in China which make it particularly important to take care in extrapolating the results (Castro and Tumibay, 2019). Another limitation, which relates to the research methods, is that the researcher must use a certain amount of discretion to determine the themes. While every attempt was made to be as objective as possible, the position of the researcher meant that these could have been interpreted in a different way to lead to different thematic identification.

6.3 SUGGESTIONS FOR FURTHER RESEARCH

The current study provides valuable insights into the experiences of Chinese university students during the transition from online to face-to-face and hybrid learning models. However, it also raises several questions that warrant further investigation. For instance,

while this study highlights the variations in students' experiences and preferences for different learning models, it does not delve deeply into the factors that contribute to these variations. Future research could explore the individual characteristics, such as learning styles, personality traits, or socioeconomic status, that influence students' preferences and adaptability to different learning models. Additionally, this study focuses on Chinese university students' experiences, limiting the generalizability of the findings to other contexts. Future research could replicate this study in different cultural and educational settings to provide a more comprehensive understanding of the challenges and benefits associated with different learning models. Longitudinal studies that follow students over a more extended period could provide valuable insights into the long-term impacts of online, face-to-face, and hybrid learning models on students' academic performance, mental health, and well-being.

6.4 SUGGESTIONS FOR POLICY

The findings of this study suggest several implications for university policy. First, it is crucial for universities to provide students with flexibility and options regarding their preferred learning model. As the experiences and preferences of students vary widely, a one-size-fits-all approach may not be effective. Universities should consider offering courses in multiple formats, including online, face-to-face, and hybrid, and allow students to choose the format that best suits their needs and circumstances. Additionally, it is essential to provide comprehensive support for students during the transition between different learning models. This includes not only academic support, such as tutoring and academic advising but also mental health support to address the increased stress and anxiety associated with these transitions. Universities should consider the infrastructural challenges faced by students, such as internet connectivity and device availability, and provide necessary support to ensure that all students can access and participate in online and hybrid learning effectively. Lastly, universities should actively seek feedback from students on their experiences and preferences and use this feedback to inform decisions about the implementation of different learning models. This will ensure that the learning models adopted are responsive to the needs and preferences of the students and facilitate a more effective and supportive learning environment.

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APPENDIX A: INTERVIEW SCHEDULE

Introduction:

"Hello, I will be your researcher today. Thank you for agreeing to participate in this interview. The purpose of this study is to understand the experiences of Chinese university students during the pandemic, specifically focusing on the transition from online to face-to-face learning. Your insights will significantly contribute to our understanding of the challenges and benefits experienced by students during this period. This interview should take about 30-45 minutes. Do you have any questions before we start? Can I have your permission to record this conversation for analysis purposes? Your responses will be kept anonymous."

Questions:

1. Can you please tell me your age?
2. What is your field of study?
3. Can you describe your experience with different models of university education during the pandemic? (online-only, hybrid, face-to-face)
4. Can you discuss any challenges you faced during the distance learning period of the pandemic?
5. Were there any benefits you experienced during the distance learning period?
6. Can you discuss any challenges you encountered during the shift back to face-to-face learning?
7. Were there any benefits you experienced during the transition back to face-to-face learning?
8. Can you describe your experiences with specific online learning models (asynchronous, synchronous, hybrid) during the pandemic period?
9. Can you discuss any challenges and benefits you experienced from these specific online learning models?
10. Do you have a personal preference for a specific model of learning (face-to-face, hybrid, online-only)? Why?
11. How do you feel the pandemic has affected your overall university experience?

12. Did you feel supported by your university during the transition periods? Why or why not?
13. Did you notice any changes in your motivation levels during the different learning periods? Can you discuss these changes?
14. Did you experience any technological issues during online or hybrid learning? Can you describe them?
15. How did you manage social interactions during the different phases of learning?
16. Did you feel socially isolated at any point? Can you discuss this experience?
17. Did your preferences for a specific model of learning change over time? Can you discuss why?
18. How would you compare your experience of online learning to face-to-face learning?
19. Did your study habits change during the different learning periods? Can you discuss these changes?
20. Is there anything else you would like to share about your experience during this period?

Closing:

"Thank you very much for your time and for sharing your experiences. Your insights are incredibly valuable for this study. We will now end the recording. Do you have any questions or anything else you would like to add?"

APPENDIX B: SAMPLE INTERVIEW TRANSCRIPT – EMMA

Interviewer: Hello, I will be your researcher today. Thank you for agreeing to participate in this interview. The purpose of this study is to understand the experiences of Chinese university students during the pandemic, specifically focusing on the transition from online to face-to-face learning. Your insights will significantly contribute to our understanding of the challenges and benefits experienced by students during this period. This interview should take about 30-45 minutes. Do you have any questions before we start? Can I have your permission to record this conversation for analysis purposes? Your responses will be kept anonymous.

Emma: Sure, no questions from me. You can go ahead and record.

Interviewer: Great, thank you. Can you please tell me your age?

Emma: I am 21 years old.

Interviewer: What is your field of study?

Emma: I am studying Business.

Interviewer: Can you describe your experience with different models of university education during the pandemic? (online-only, hybrid, face-to-face)

Emma: I spent 16 months studying under both online and hybrid models. I started with online-only courses and then moved to hybrid ones. I appreciated the online-only model more because it enabled me to stay at home and take care of my younger sibling.

Interviewer: Can you discuss any challenges you faced during the distance learning period of the pandemic?

Emma: One of the main challenges was sharing a laptop with my sibling. It was challenging to manage our schedules and ensure that we both had enough time to complete our tasks and attend our online classes. Also, sometimes the internet connection was not very stable, which affected the quality of the online classes.

Interviewer: Were there any benefits you experienced during the distance learning period?

Emma: Yes, I liked that I could manage my time better during online learning. It gave me the flexibility to organize my day according to my preferences and responsibilities at home.

Interviewer: Can you discuss any challenges you encountered during the shift back to face-to-face learning?

Emma: The shift back to face-to-face learning was a bit challenging because I had to readjust my schedule and daily routine. It was also a bit difficult to manage the transportation and the time it took to travel to the university.

Interviewer: Were there any benefits you experienced during the transition back to face-to-face learning?

Emma: Yes, I think face-to-face interactions are very important, and it was good to be able to interact with my classmates and professors in person again. It also helped to have a more structured schedule.

Interviewer: Can you describe your experiences with specific online learning models (asynchronous, synchronous, hybrid) during the pandemic period?

Emma: Initially, most of my classes were synchronous online classes, which means we had to attend the classes in real-time. Later on, some of my classes were asynchronous, which allowed me to complete the coursework at my own pace. When I moved to the hybrid model, I had a mix of online and face-to-face classes.

Interviewer: Can you discuss any challenges and benefits you experienced from these specific online learning models?

Emma: With synchronous online classes, it was sometimes difficult to stay engaged and focused during the entire class. However, it was beneficial because it provided a sense of routine and structure. Asynchronous classes gave me the flexibility to manage my time, but it was sometimes challenging to stay motivated and disciplined to complete the work on time. The hybrid model provided a good balance between online and face-to-face interactions, but it was sometimes challenging to manage the transportation and time it took to travel to the university.

Interviewer: Do you have a personal preference for a specific model of learning (face-to-face, hybrid, online-only)? Why?

Emma: I prefer the online-only model because it gives me the flexibility to manage my time and take care of my responsibilities at home. However, I also appreciate the face-to-face interactions, so a hybrid model would be my second choice.

Interviewer: How do you feel the pandemic has affected your overall university experience?

Emma: The pandemic has definitely affected my university experience in many ways. I had to adapt to new ways of learning, manage my time more efficiently, and find new ways to stay connected with my classmates and professors. It was a challenging period, but I also learned a lot about myself and developed new skills.

Interviewer: Did you feel supported by your university during the transition periods? Why or why not?

Emma: I think my university did a good job in supporting us during the transition periods. They provided clear communication about the changes, offered technical support for online learning, and provided resources for mental health and well-being.

Interviewer: Did you notice any changes in your motivation levels during the different learning periods? Can you discuss these changes?

Emma: My motivation levels definitely fluctuated during the different learning periods. During the online-only period, it was sometimes challenging to stay motivated because of the lack of face-to-face interactions and the challenges of managing my time. However, when I moved to the hybrid model, my motivation levels increased because I was able to interact with my classmates and professors in person again.

Interviewer: Did you experience any technological issues during online or hybrid learning? Can you describe them?

Emma: Yes, as I mentioned before, one of the main technological issues was sharing a laptop with my sibling. Also, sometimes the internet connection was not very stable, which affected the quality of the online classes.

Interviewer: How did you manage social interactions during the different phases of learning?

Emma: During the online-only period, I tried to stay connected with my classmates and professors through online platforms and social media. It was definitely not the same as face-to-face interactions, but it helped to stay connected and support each other. During the hybrid model, I was able to have more face-to-face interactions, which was very beneficial.

Interviewer: Did you feel socially isolated at any point? Can you discuss this experience?

Emma: Yes, during the online-only period, I sometimes felt socially isolated because of the lack of face-to-face interactions. It was challenging to stay connected and engaged with my classmates and professors. However, I tried to stay connected through online platforms and social media, and that helped to reduce the feelings of isolation.

Interviewer: Did your preferences for a specific model of learning change over time? Can you discuss why?

Emma: Initially, I preferred the online-only model because it gave me the flexibility to manage my time and take care of my responsibilities at home. However, as time went on, I started to appreciate the face-to-face interactions more, and I think a hybrid model would be a good balance between online and face-to-face interactions.

Interviewer: How would you compare your experience of online learning to face-to-face learning?

Emma: Online learning provided more flexibility and allowed me to manage my time better. However, it was sometimes challenging to stay engaged and motivated. Face-to-face learning provided more structure and allowed for better interactions with my classmates and professors. However, it was sometimes challenging to manage the transportation and time it took to travel to the university.

Interviewer: Did your study habits change during the different learning periods? Can you discuss these changes?

Emma: Yes, my study habits definitely changed during the different learning periods. During the online-only period, I had to be more disciplined and create a schedule for myself to stay on track. I also had to find new ways to stay engaged and motivated. During the hybrid model, I had to manage my time more efficiently to accommodate the travel time to the university and the face-to-face classes.

Interviewer: Is there anything else you would like to share about your experience during this period?

Emma: I think it was a challenging period for everyone, but it was also an opportunity to learn and grow. I developed new skills, learned to manage my time better, and found new ways to stay connected and engaged with my classmates and professors.

Interviewer: Thank you very much for your time and for sharing your experiences. Your insights are incredibly valuable for this study. We will now end the recording. Do you have any questions or anything else you would like to add?

Emma: No, I don't have any questions. Thank you for giving me the opportunity to share my experiences.