An Exploration of Teacher Trainees' Perceptions of the Factors that Affect their Flipped Learning Experience in a non-Western Context

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Publication Partner: IJSRP INC.

Publication Partner:
International Journal of Scientific and Research Publications (ISSN: 2250-3153)

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Publishing Partner:
IJSRP Inc.
www.ijsrp.org

ISSN 2250-3153
9 772250 315302

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Preface

This study examined a case study from a private university in Northern Cyprus to provide a non-Western perspective on a Western-style educational system. It focuses on teacher trainees' perspectives on the factors that influence students' flipped learning experiences.

This research was carried out using exploratory sequential mixed methods. Through a combination of descriptive statistics on qualitative data and thematic analysis on quantitative data, the data revealed a total of twelve themes. Six of the twelve themes were dominant, according to the combined results. The dominant themes were, first, teacher trainees' learning preferences and second learning personalities. Third and fourth, the *Community of Inquiry*, as well as the knowledge and experience of teachers who teach teacher trainees in flipped learning. Fifth, the GAU's teacher training programmes now incorporate the *'Technological Pedagogical Content Knowledge* (*TPACK*)' policy. Finally, there are issues with accessibility in Northern Cyprus.

The study contributes to knowledge by identifying the variables of factors that affect teacher trainees within flipped learning through their perceptions based on the six dominant themes that emerged. Furthermore, to aid the stated factor of learning preferences and its effect on teacher trainees' flipped learning experience, this study has created a theoretical framework titled the *'Learning Preference Barque'*.

Finally, this study has suggested research implications by, first, discussing the *Learning Preference Barque* in the use of the advocation of learning preferences on how teacher trainees adapt or "handpick" their preferences through their perceptions. Second, based on the discussion of providing teachers who lecture teacher trainees, training courses on how to provide feedback to teacher trainees using flipped learning.

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Dr Asegul Hulus a PhD graduate in Education and Training related to online mediums, at the University of Greenwich, is a Fellow of the Higher Education Academy. Therefore, she has experience with both the United Kingdom and Cypriot higher education sectors, both as an academic expert and as a culture. With this accredited fellowship through the Higher Education Academy (Advanced HE), it is assured that she has knowledge and expertise in quality assurance and enhancement systems to ensure high standards are maintained and the student experience is enhanced, including course design and development.

Further to the above, Asegul has expertise in administrative, course leadership, course design, flipped learning, research supervision, and various aspects of academia, such as administering course registers, assessment records, learning programmes and other records. She is an active member of the research community, with publications, journal reviews, memberships, and professional development schemes.

Publication Partner:
International Journal of Scientific and Research Publications (ISSN: 2250-3153)

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'Sic Parvis Magna'

Sir Francis Drake, as reverberated by Parkin (2020, p.2).

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ABSTRACT

This study examined a case study from a private university in Northern Cyprus to provide a non-Western perspective on a Western-style educational system. It focuses on teacher trainees' perspectives on the factors that influence students' flipped learning experiences.

This research was carried out using exploratory sequential mixed methods. Through a combination of descriptive statistics on qualitative data and thematic analysis on quantitative data, the data revealed a total of twelve themes. Six of the twelve themes were dominant, according to the combined results. The dominant themes were, first, teacher trainees' learning preferences and second learning personalities. Third and fourth, the *Community of Inquiry*, as well as the knowledge and experience of teachers who teach teacher trainees in flipped learning. Fifth, the GAU's teacher training programmes now incorporate the *'Technological Pedagogical Content Knowledge* (*TPACK*)' policy. Finally, there are issues with accessibility in Northern Cyprus.

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EQUATIONS

ABBREVIATIONS

ELT:	English Language Teaching
GAU:	Girne American University
IT:	Information Technology
ICT:	Information Computer Technology
***TPACK*:**	*Technological Pedagogical Content Knowledge*
BA:	Bachelor of Arts
MA:	Master of Arts
PhD:	Doctor of Philosophy
PGCE:	Postgraduate Certificate in Education
COI:	The *Community of Inquiry*
BERA:	The British Educational Research Association

GLOSSARY

Traditionally, a glossary is allocated at the end of a study. However, considering the non-Western context of Northern Cyprus in this case study, certain terms are in disarray when compared to their Western counterparts, for example, the United Kingdom. To provide clarity to the reader across cultural contexts, this study has noted below these key terms and their definitions used in Northern Cyprus.

Industrialisation:

This is the increase in the proportion of national income contributed by industry because of the mechanisation of the production of goods (for example, machinery). It is, in its broadest sense, the application of new manufacturing techniques, the improvement of product quality, the reduction of production costs, and the shaping of economic, political, and social developments in a country (Koc, Senel and Kaya, 2018).

Teacher Trainees:

This case study defines teacher trainees as students who have completed a specific teacher training and education programme to become licensed teachers at a specific grade level (Hassan *et al.,* 2015).

Teacher Training and Education Programmes:

This case study uses the terminology of 'teacher training' and 'teacher education' interchangeably, as curricula structured to prepare both undergraduate and graduate students to become licensed teachers. These programmes can offer customised coursework to prepare students to teach a specific grade, level, and subject (Erden, 2016).

NOTES ON TERMS USED

The following terms are used interchangeably:

(A) Universities and higher education

(B) Pupils and students

(C) Teachers, instructors, educators, and lecturers

(D) Teacher training and teacher education

(E) Pedagogy (pedagogical) and education (educational)

(F) Within Chapter 4, the 'participants' represent the 'teacher trainees'

(G) Emulation and imitation

CHAPTER 1. INTRODUCTION

1.1. Overview

This chapter begins by describing the formation of the State of Northern Cyprus in 1974 in accordance with the Republic of Türkiye's regulations. It also explains why Northern Cyprus is classified as a non-Western context and refers to the educational policies established by the Republic of Türkiye for Northern Cyprus. This chapter discusses the relationship between Northern Cyprus and teacher trainees, including the importance of teacher trainees in educational policy regarding the integration of flipped learning, based on these educational policies. This is based on the assumption that the Republic of Türkiye intends to join the European Union by imitating currently popular Western educational approaches (for example, online educational courses), including the political and economic benefits of technological values. This will be addressed throughout the chapter, as the incorporation of flipped learning in Northern Cyprus is based on a technological value rather than an educational value.

Based on this technological emulation of Western flipped learning, the current chapter investigates the origins of flipped learning in Western culture and how flipped learning has shaped teaching and learning in these Western cultures. Furthermore, the benefits of incorporating flipped learning into Western teaching practices are discussed from a pedagogical standpoint. This examination of flipped learning in Western cultures prepares the ground for the previously mentioned examination of the relationship between Northern Cyprus and flipped learning from an educational standpoint. This chapter presents this study’s perspective within the context of the relationship between Northern Cyprus and flipped learning. From there, the chapter moves on to a summary of the main existing research rationale, including the study's main keywords. The chapter concludes with an overview of the chapters that follow, emphasizing the value and contribution of this study.

1.2. The Emergence of Northern Cyprus and the Northern Cypriot Education System

The establishment of the State of Northern Cyprus in 1974 sets the stage for the issues addressed in this case study. A case study is defined as *'[an] analysis based on an understanding embedded within a very specific setting and time frame in a real-life context'* (Creamer, 2018, p.131). This is the case in this study's context, because the teacher trainees are from Girne American University (GAU). The following introduction will first introduce the context of Northern Cyprus, then explore the relationship between Northern Cyprus and teacher trainees at GAU, before moving on to discuss the issues raised by them and the definition of flipped learning used in this study.

Northern Cyprus is classified as a non-Western culture because it is neither a Western European nor a Northern American country (Kyris, 2020). Northern Cyprus is not to be confused with the Republic of Cyprus, which is a member of the current European Union (Ebeku and Michaelidou-Mateou, 2007). Since 1974, Cyprus has been divided into two parts: Northern Cyprus (non-European Union) and the Republic of Cyprus (member of the European Union) (Mavratsas, 1997). As a result, Northern Cyprus is classified as a non-European country because it is a de facto state (not formally recognized [Pegg, 2017]) that comprises the island of Cyprus's north-eastern part. Northern Cyprus is only recognized by the Republic of Türkiye, and the rest of the international community considers it to be part of the Republic of Cyprus (Ulas, 2016).

Following the partition of Cyprus into a Cypriot-Greek south and a Cypriot-Turkish north in 1974, the leaders of the Cypriot-Turkish communal, with the support of the authorities of the Republic of Türkiye, launched a policy to encourage Turks to immigrate to Northern Cyprus. In order to characterize the Northern Cypriot community, Northern Cyprus must adhere to the Republic of Türkiye's guiding ideology, which includes adhering to the Republic of Türkiye's educational and industrial strategies (Themistocleous, 2018; Jensehaugen, 2017; Ahmad, 1988).

Teacher training schools were established as 'High School Teacher Schools' in 1974 to integrate the curriculum of the Republic of Türkiye into the newly established Northern Cyprus education system. Teacher trainees were educated for two years on the foundations of the Republic of Türkiye's curriculum in terms of Turkish education history (Tekel and Öztekin, 2021; Bilir, 2010). It is important to note that, according to Erden (2016), teacher trainees are students who have completed a specific teacher training and education program in order to become qualified teachers in primary, secondary, and higher education. The upcoming sections of this study go into greater detail about these educational programmes.

From 1974 onwards, graduating teacher trainees were hired as 'classroom teachers' to implement the newly appointed Turkish curriculum (Türkmen, 2007). This leads to the current university-led teacher training programmes in Northern Cyprus. This will be explored further in Chapter 2 in terms of how these university-led teaching programmes emerged in Northern Cyprus, including a discussion of how each of these programmes' pedagogy is influenced by the Republic of Türkiye's current curriculum.

According to Türkmen (2007), the Turkish curriculum currently consists of a 'four x four x four' system: a period of twelve years of compulsory education divided into three tiers. After their sixth birthday in the first month of September, children attend primary school, followed by secondary school at the age of ten, and then college (high school) from the age of fourteen to the age of eighteen. After that, they can choose whether or not to pursue higher education, as higher education is the final step in the Turkish curriculum, as opposed to other countries, such as the United Kingdom, where there is also the option of further secondary education (Abdel-Fattah and Galal-Edeen, 2009). Many scholars (for example, Tekel and Öztekin, 2021; Kizildag and Simsek, 2015; Gün and Baskan, 2014) criticise that, '*[the] Turkish education system fails to produce happy, free, talented, skilled, knowledgeable, and virtuous individuals'* (Kizildag and Simsek, 2014, p.78).

This criticism stems from the fact that the Turkish curriculum was designed to meet the 'needs' of the Republic of Türkiye's predetermined economic goals. This was reflected in Northern Cyprus, where the Turkish curriculum was integrated into the Northern Cyprus Department of Education (Yinac, 2017). These 'needs' were founded on the 'needs' of

industrialisation (See the Glossary, p. xvii) and the reform of the Turkish curriculum after 1974, which the Turkish government authorities deemed necessary (Ercetin *et al*., 2019), and will be discussed in the following sentences. Following the events of 1974, the Turkish economy was hit by a series of economic crises, which worsened in the 1990s until 2001, with three major crises occurring between these two periods. These crises were precipitated by Türkiye's unsustainable fiscal deficit and large amounts of private foreign currency debt (Ari and Cergibozan, 2014). The economic crises prompted the Republic of Türkiye's Ministry of Education to develop the national curriculum in response to the 'needs' of industrialisation in the 1980s and the economic crisis years from 1990 to 2001. (Tanriogen, 2018). The 'needs' of industrialisation (See the Glossary, p. xvii) in this case for the Republic of Türkiye were to provide future generations with mechanical skills defined within Turkish culture as expertise and use of machinery or industrial tools (Batır, 2013).

This mechanical skills definition has been presented to demonstrate the framing of Northern Cyprus and the Republic of Türkiye as non-Western cultures on industrialisation. This is because in Western cultures, such as the United Kingdom, industrialisation is frequently viewed through the lens of the industrial revolution, which introduced innovative industrial methods in Europe and the United States between 1760 and 1840. Among these innovations are the transition from hand to machine fabrication, the development of new chemicals and iron manufacturing processes, the increased use of hydroelectric power, the invention of machining, and the development of the industrialized assembly line (Mohajan, 2020; 2019).

According to Habibi (2017), this approach to teaching and learning based on the 'needs' of industrialisation would lead future generations in the Republic of Türkiye to be capable of operating and living in an industrialised country by educating teacher trainees with these mechanical skills and how to further elicit these skills from their future students. For example, through the inclusion of: *'[design] for Industrialization courses in teacher education programmes in Turkey, in which teachers engage in the design, detailing, and completion of basic products for industrial production'* (Tezel, 2011, p.100). Training was designed to take place primarily in classroom-based teaching sessions under this approach, which was based on the acquisition of mechanical skills, though partnerships

with industry were also encouraged. Higher education institutions in the Republic of Türkiye and Northern Cyprus have been encouraged since the 1980s to secure funding through industry relationships to promote and integrate higher education students into the industrial economic system. As a result of these collaborations, the industry provided work placements as unpaid internships for students (OECD, 2020; Habibi 2017).

Habibi (2017), further noted that other research institutions, political parties, or multinational organisations such as the 'Organisation for Economic Co-operation and Development (OECD)' or the 'United Nations Educational, Scientific, and Cultural Organisation (UNESCO)', did not express any significant criticism of the Turkish government's plans to increase admission to universities through partnerships within the industry (UNESCO, 2015). During this period, the Republic of Türkiye's compliance with its intention to increase university admissions based on the 1981 agreement between the OECD and UNESCO had to be compared with the European and OECD criteria for average enrolment rates in higher education, *'[also] referred to as the country average, which is the mean of the data values for all OECD countries for which data are available or can be estimated* '(Habibi, 2017, p.441), and was judged to be satisfactory (OECD, 2007; UNESCO, 1981). This agreement supported the Turkish government's plans to increase access to universities through partnerships with industry, as the Republic of Türkiye's enrolment rate in higher education was below the OECD and European averages (labelled EU19), as shown later in this study in Figure 1 (Habibi, 2017; OECD, 2023).

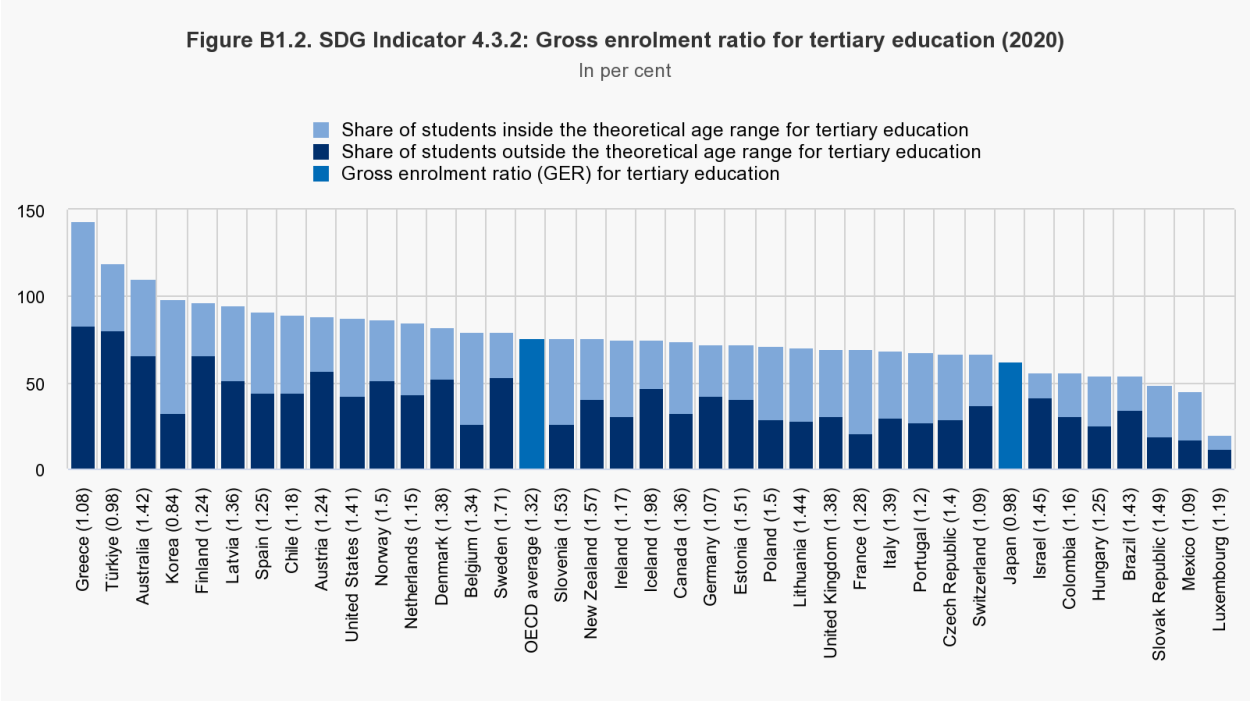

Figure 1. Gross Higher Education Enrolment in OECD Countries (2020)

(OECD, 2023, Figure B1.2, p. 133)

Before delving into Figure 1, it is important to note that the OECD publishes data reports on OECD indicators for all twenty-four OECD countries every three to five years. As a result, any data collected after 2020 at the time of this research has yet to be analysed and compared for their upcoming publication reports for 2021 and beyond (OECD, 2022; Sahnoun and Abdennadher, 2021).

Figure 1 depicts an analysis of the quantitative decrease of enrolment in higher education in the Republic of Türkiye in 2020, based on the assumption that the Republic of Türkiye was rapidly industrializing. Northern Cyprus's formation as a nation in 1974, its relationship with the Republic of Türkiye, and the Republic of Türkiye's industrialisation strategy since the 1980s all have a direct impact on curriculum development in Northern Cyprus. It is possible to imagine teacher trainees as critical agents of change and national formation: for example, the requirement of mechanical skills, as previously mentioned, to integrate students into Northern Cyprus's industrial economic system (Silman *et al.*, 2021; Çakmak, Faslı and Baskan, 2013).

Ercetin *et al.* (2019) argue that treating teacher trainees as critical agents of change has negative consequences because inappropriate judgements about teacher education have been made at various times in the Republic of Türkiye and Northern Cyprus, allowing non-specialists in their field and those without academic training to become teachers. For example, Ercetin *et al.* (2019) also point out that, even today, graduates from undergraduate programmes whose areas of expertise are not in education are quickly awarded a 'Postgraduate Certificate in Education (PGCE),' resulting in the negative consequences of these educational practices. Implementing these PGCE courses, for example, for various purposes such as establishing industrial footprints and increasing economic value within Northern Cyprus, has the unintended consequence of lowering the quality of teaching and education.

As a result of the relationship between teacher trainees and Northern Cyprus, the methods of teaching and learning in teacher training programmes undergoes various adjustments. This relationship is based on the country's 'current needs,' as identified by government officials (Çakmak, Faslı and Baskan, 2013). As a result, teacher candidates are trained and equipped with specific 'current skills' in order to meet these 'current needs' and teach their future students in their future teaching careers. The relationship between Northern Cyprus's 'current needs' and the specific 'current skills' required of teacher trainees will be discussed further in the following section.

1.3. Northern Cyprus and Teacher Trainees

From 1974 onwards, teacher trainees were perceived as critical agents of change and national formation in implementing the values of the guiding ethos set by the government of Northern Cyprus under the regulations dictated by the Republic of Türkiye (Themistocleous, 2018). Northern Cyprus's government sought to use education to meet the 'needs' of the country's industrial and economic development (Gök, 2016; Simsek, 1999).

In this context, the term 'needs' refers to the material that teacher trainees must be educated with in order to convey the information and skills that the government wants the

next generation to have (Ufuk and Caganaga, 2019). For example, in the academic year 1998-1999, the Turkish Higher Education Council in the Republic of Türkiye began to re-establish Faculties of Education based on the country's 'needs' as a policy based on a specific economic strategy to incorporate ICT. This economic strategy entailed changing teaching and learning methods by introducing alternative teaching approaches based on information and communication technology (ICT), as this incorporation of ICT was based on the economic strategy of political reasoning (Kizilet and Sinan, 2017; Curaoglu *et al*., 2015; Tarman, 2010), which will be discussed further in the following sections.

Northern Cyprus's current 'needs' necessitate the incorporation of technology (for example, online education with computers) into current teacher education programmes. The history of this integration begins with the demand for Northern Cyprus to adhere to Turkish regulations (based on the 1974 division of Cyprus [Themistocleous, 2018]). In order to integrate technology into its current teacher education programmes, Northern Cyprus must follow the Republic of Türkiye's imitation of Western culture (for example, the United Kingdom) (Bulbul, Ozipek and Kalin, 2008). The rationale for this imitation of Western culture in introducing technology into teacher education programmes is current leader Recep Tayyip Erdogan's desire to become a member of the European Union (EU) after negotiations for the Republic of Türkiye's full EU membership began in October 2005 (Tocci, 2014; European Commission, 2005).

As early as 2016, the 'EU-Republic of Türkiye Refugee Agreement' was proposed to speed up subsequent negotiations based on previous inactivity on the status of negotiations and allow Turkish nationals visa-free travel in Europe (European Commission, 2016). These talks have been suspended since 2016, and the Republic of Türkiye has been held responsible for the suspension as well as being chastised by the EU General Affairs Council for human rights violations and judicial system shortcomings (European Commission, 2016). In 2017, EU officials argued that the Republic of Türkiye's proposed policy violated the Copenhagen criteria for EU membership (rules determining whether a country is eligible to join the EU [European Commission, 2016]) (European Commission, 2017). In June 2018, the EU General Affairs Council declared that:

[The] Republic of Turkey has driven the European Union further away from itself. Accession talks with the Republic of Turkey have now effectively failed, no new chapters can be opened or concluded, and no further work on the modernisation of the customs union between the EU and Turkey is expected (European Commission, 2018, p.5).

Based on this criticism, as well as the failure of the aforementioned rejection of EU accession talks in 2016, the Republic of Türkiye decided in 2016 to reform its education system and further align itself with current Western educational research in order to address this criticism (Kizildag and Simsek, 2014). This convergence of Western practices echoes the introduction of the Turkish alphabet in 1928 by Mustafa Kemal Atatürk, the first president of the Turkish Republic, as an imitation of the Latin script alphabet (Akgul, 2019). During this educational reform in 2016, President Erdogan indicated that he was looking for an EU partnership on his terms, such as continuing his anti-Western governance of the Republic of Türkiye without the influence and requirements of European Union regulations that all member states must follow at the same time (Pierini, 2020).

In 2016, the Republic of Türkiye's Department of Education took the approach of re-shaping the education curriculum and education policies by imitating the currently popular information technology (IT)- based educational strategies and methods of Western culture in order to demonstrate that the Republic of Türkiye is 'worthy' of joining the EU partnership (Gamawa, 2019; Gur, 2016). An interim report on the educational reform through the Republic of Türkiye's Department of Education by a junior researcher at the Moshe Dayan Centre (MDC), Yanarocak (2016), highlighted this imitation of Western culture in the Turkish curriculum annotated by the government authorities of the Republic of Türkiye, by stating that '*[the] new curriculum depicts the Turkish civilization as equal and, in some cases, superior to the Western world'* (Yanarocak, 2016, p.2).

Based on the interim report conducted by Yanarocak (2016), it was determined that Turkish students and teachers were taught to value Western civilisation as a model example to follow in the methods of teaching and learning as a result of this reshaping of

education policies. Thus, in order to mimic current Western research and education policies, the Republic of Türkiye increased its total education budget investment by 18.9% in 2016 compared to the previous year, to $41.95 billion (OECD, 2018), while retaining the essence of the Turkish education system (Yildirim and Kray, 2016). At the time, the Ministry of Education secretary Nabi Avcı (2016), with a presentation at the Grand National Assembly of the Republic of Türkiye, justified this increased investment in their education budget by noting that, *'[to] increase the opportunity of western approaches, we need to rapidly and decisively increase the usage of technology within education*' (p.2).

As a result of the requirement to follow the Republic of Türkiye's education regulations (Themistocleous, 2018), Northern Cyprus must quickly and decisively adopt this emulation of Western culture in its education policy in terms of its Ministry of Education's educational budget (Pehlivan, 2018). Both the Republic of Türkiye and Northern Cyprus have shifted their focus within this education budget to teacher education programmes and flipped learning (as defined below) as part of integrating technology into their current teacher education programmes (Jensen, 2019; Hao and Jiang, 2019).

Flipped learning is defined in this study as an approach that uses computer-based or digital tools to deliver learning content and resources anywhere alongside face-to-face teaching in a classroom or other specific setting, for example, via synchronous online interactions. It is a pedagogical approach in which students access information asynchronously prior to synchronous instruction to apply and deepen learning and solve problems (Basak, Wotto and Bélanger, 2018; Klopfer *et al*., 2009). This definition of flipped learning was accepted in this study because it assumes that flipped learning is not limited to a classroom in a campus-based setting. Students watch short video lectures or other multimedia material related to the subject matter asynchronously via a virtual learning platform before their synchronous classroom session (whether in a physical room or in a live interactive online session) (Goh and Ong, 2019; Thai, De Wever and Valcke, 2017).

Many scholars (for example, Ercetin *et al.,* 2019; Yilmaz, 2013) have noted that the rapid increase in the incorporation of technology through flipped learning in Northern Cyprus

and the Republic of Türkiye has fabricated major inadequacies with this direct imitation of Western practices regarding flipped learning. For example, a lack of technical knowledge, a lack of technological integration in terms of technical infrastructure, and a shortage of educators, students, and educational stakeholders. Bekiroglu (2018), president of the Graduate School Association (GRA) in the Republic of Türkiye, noted that this, '*[imitation] of Western culture in the pursuit of introducing technology was not implemented healthily. It was implemented in a rapid, superficial, formalistic, harsh, and copy-paste method [including within Northern Cyprus]'* (Bekiroglu, 2018, p.3).

The first president of the Republic of Türkiye, Mustafa Kemal Atatürk, years before the rapid adoption of flipped learning within the Turkish education system, had yielded a warning from rapidly imitating Western cultures by noting that, as reverberated by Yanarocak (2016), '*[modernisation], for us, does not mean to imitate the West blindly, we are not taking Western civilization saying of let's mimic this! We adopt what we find befitting our context, on the level of the world's civilization'* (p.28). Based on these criticisms, the following paragraphs will explore how flipped learning was incorporated into teacher education programmes within Northern Cyprus through this noted Western imitation.

This shift to flipped learning in the 2016 education reform mentioned above was grounded in the initial pioneering work of flipped learning. In 2002, John Bergmann and Aaron Sams, two high school chemistry teachers in the United States of America, introduced the term 'flipped learning', which has since been widely used (Bergmann and Sams, 2012). This will be discussed further in the upcoming section in terms of the origins and interpretation of flipped learning in Western culture. Based on this pioneering of flipped learning by Bergmann and Sams (2012), the 'Flipped Learning Global Initiative (FLGI)' was founded in 2016 by a global alliance of flipped learning educators, scholars, practitioners, and leaders. The organisation promoted flipped learning around the world, including in the Republic of Türkiye and, therefore, also within Northern Cyprus, based on the educational regulations they must follow in line with the Republic of Türkiye since 1974 (Birgili, Seggie and Oğuz, 2021).

Birgili, Seggie and Oğuz (2021) also note that, the FLGI has been used by the Republic of Türkiye to reshape its education policies to integrate flipped learning into its current teacher education programmes. The Department of Education in the Republic of Türkiye ordered scholars and educators at MEF University in 2016, as noted by Kurban (2017), to collaborate with the University of Harvard and the University of Stanford (Western universities) to adapt and learn from their flipped learning standards through this FLGI partnership. Through this partnership, flipped learning was noted to help increase technological skills (digital literacy) within a virtual space. It is important to note that digital literacy, according to the American Library Association (2013), '*[is] the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills'* (p.1).

This requirement for the increase of digital literacy led the Republic of Türkiye's future economy and society into a form of digital citizenship, in conjunction with the standards of Western culture, derived from the prime examples learned through their collaboration with Harvard University and Stanford University (Kurban, 2017). It is also essential to note that a digital citizen is, '*[a] person using [IT] to engage in society, politics, and government'* (Ohler, 2011, p.26).

At the time, Muhammed Şahin, the Vice-Chancellor of MEF University (Şahin and Kurban, 2016), based on their collaboration with Harvard University and Stanford University, as reverberated by Kurban (2017), noted that, *'[we] inscribed a flipped learning course design policy, designed online training courses for instructors and students, and conducted digital literacy workshops to help us become digital citizens in flipped learning'* (p.2).

In line with the Republic of Türkiye, the Department of Education in Northern Cyprus formally recognised the value of flipped learning as an educational policy in 2016. However, did not provide legal guidelines in doing so, instead, the Department of Education in Northern Cyprus commissioned leading academics to research flipped learning with the help of their Western counterparts, as the Republic of Türkiye did with the FLGI partnership mentioned above (Tugun, Uzunboylu and Ozdamli, 2017).

In doing so, leading academics Güzer and Caner (2016) noted that teacher education programmes in Northern Cyprus should focus on the use of technology in teacher education programmes as a mechanism for developing digital literacies in flipped learning. With regards to Güzer and Caner's (2016) recommendation, courses based on flipped learning were designed and integrated into teacher training programmes in Northern Cyprus, which will be discussed in upcoming sections.

Based on the history of Northern Cyprus and the relationship between Northern Cyprus and teacher trainees discussed until this point, it can be acknowledged that there is a major focus on developing digital literacy with the aid of flipped learning in Northern Cyprus, through the technological-economic strategy of political reasoning of Western emulation (in line with the Republic of Türkiye's regulations of Western imitation). However, the most remarkable outcome of this technological-economic strategy is that, at the centre of it all, lie the teacher trainees themselves. Based on this, the curriculum and teachers are prioritised in the Turkish education system over the students because they are the ones who will, as previously discussed, be the critical agents to implement change and the national formation of digital literacy, leading to the emergence of digital citizens within Northern Cyprus (Tekel and Öztekin, 2021; Kizildag and Simsek, 2014). However, the origins of flipped learning in Western cultures and its associated benefits focus on the importance of active student-centred learning as an educational value, not only the acquisition of digital skills for digital citizenship (Webb *et al*., 2021). This educational value for students and teachers is discussed in the next two sections based on the origins and interpretation of flipped learning in Western culture to provide a context for the emulation that Northern Cyprus has pursued.

1.4. The Origins and Interpretation of Flipped Learning in Western Culture

The origins and interpretation of flipped learning in Western cultures are associated with: first, distance learning, second; e-learning; and finally, blended learning. In the following discussions and subsections, each association will be explored. This exploration will then frame flipped learning and the pedagogical ambitions behind it.

1.4.1. Distance Education

Distance education had its beginnings in the 1840s when Isaac Pitman provided courses through written correspondence in England (Pandey, 2013). His courses were drawn from the 'commerce' advertisement concept invented by Pryce-Jones in Wales in the 1800s, where mail-order catalogues were sent to households and merchants received orders via written correspondence (Cowey, 2005). Pitman's courses were tailored to improve the writing speed of students who needed this skill in their professional lives: for example, journalists and others who regularly took notes on live conversations (Pant, 2014). Pitman, a certified teacher, sent out assignments and received the completed assignments back from his students, once they were marked, he mailed them back. In this way, there was a back-and-forth correspondence between him and his students (Bušelić, 2012).

1.4.2. E-learning

After the 1840s and into the 20th century, the term 'e-learning' became associated with learning through machines (Liimatainen, 2019). According to Petrina (2004), the first machine used to test a student's knowledge was invented by Sidney L. Pressey in 1924. He invented this machine to test 'rote-and-drill' learning, a repetition-based approach to memorisation (Benjamin Jr., 1988). The machine allowed students to test their memory skills by having them respond quickly to multiple-choice questions by pressing buttons on the machine after hearing, reading, or seeing information (McFadden, 2001).

In 1954, as noted by McDonald (2003), the term 'e-learning' specifically became associated with B. F. Skinner, a Harvard Fellow who devised a 'teaching machine' to test students' knowledge and administer automated instruction, which he named the 'Glider'. This machine borrowed heavily from his research philosophy of ‘behaviourism,’ which argues strongly that learning should be associated with positive reinforcement rather than the acquisition of knowledge (Malone, 1975). However, Chomsky (1959) argued against

B. F. Skinner's idea, stating that learning cannot be achieved through positive reinforcement alone, however, through innate abilities (for example, a student's ability to acquire language [Malone, 1975]).

Following Chomsky (1959) who questioned B. F. Skinner, this study observes that it is also questionable to claim that the term 'e-learning' is linked to the inventions of Sidney L. Pressey and B. F. Skinner (Petrina, 2004; McDonald, 2003). This argument is on the basis that, the 'e' in e-learning stands for an online form of electronic (digital) learning (Al-Momani, Pilli and Fanaeian, 2014), which is defined as *'[utilizing] electronic technologies to access educational curriculum outside of a traditional classroom. In most cases, it refers to a course, programme or degree delivered completely online*' (Al-atabi and Al-noori, 2020, p.4). It is not then sufficiently justified to associate the term with simple machines equipped only for 'rote-and-drill' learning as the beginning of e-learning. In order to further justify this claim, this study draws on Schwab's (2015) description of the 'Industrial Revolution' (Figure 2), which shows the four revolutions in four different time periods from 1750 to the 2000s, which led to the height of online learning from which 'e-learning' emerged. Furthermore, the different phases of the 'Industrial Revolution' (See Figure 2) highlight the path taken to change educational practices through the creation and adoption of different technological advancements throughout the years that led to the online education incentive of Education 4.0, defined as (Neto 2020):

[Consisting] of an advanced theoretical-practical approach to management and teaching in formal education that has been demonstrating, through evidence of scientific and technological research, its transformative and innovative potential for educational institutions and teaching (Neto, 2020, p.1).

Education 4.0 is commonly referred to by many researchers, for example, Pinto and Reis (2022), Ugnich (2022) and Chituc (2021), as a form of digital learning. It resonates with Schwab's (2015) 'Industrial revolutions' presented in Figure 2, which is primarily based on the 'third revolution' with the conclusion that inventions before the 1960s cannot be classified as a form of e-learning. This sets it apart from the 'digital age,' which emerged

through historical post-war movements relating to capitalism and industrialisation. This highlights the guiding ethos for changes to digital information technology and education leading into the 1980s, including in this study's research context of Northern Cyprus.

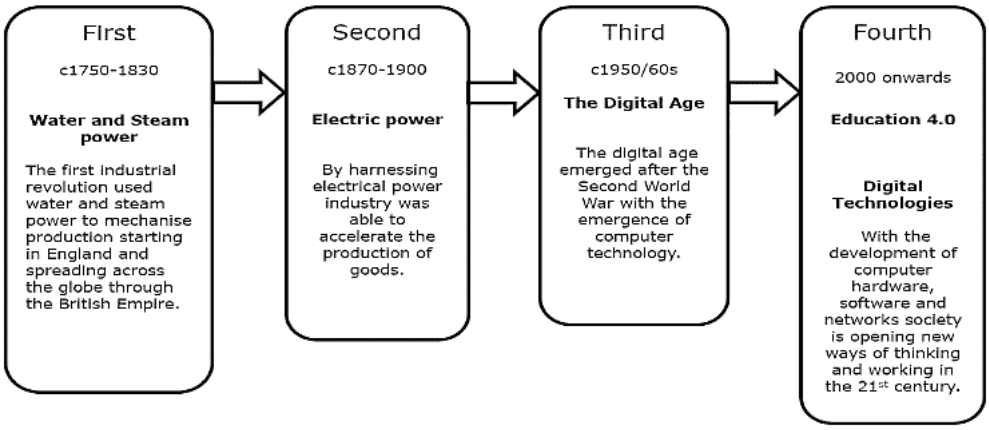

Figure 2. Industrial Revolutions

As described by Schwab (2015) and modelled by:

Williams, Windle and Wharrad (2020, p.2)

View of Education 4.0 by Pinto and Reis (2022), Ugnich (2022) and Chituc (2021), is consistent with Schwab's (2015) concept of 'Industrial Revolutions,' emphasizing the de-industrialisation process within these revolutions. It is important to note that the term 'de-industrialisation' refers to 'the reduction of industrial activity or capacity in a region or economy' (Singh, 1977, p.184).

Woods (1952) adds to this view of Education 4.0 by arguing that Education 4.0 is required within a society to expand its productive forces, which is the main driving force in history. This would create a consciousness and skill for nature in order to minimize the hours of labour economically required to construct, and replicate, and improve living standards. Wood (1952) further acknowledges that the principles of ruthless capitalist competition amongst capitalism's advocates for higher profits led each individual capitalist to minimise their costs by trading at a lower rate and aiming to increase efficiency in his enterprises by replacing manual labour with machinery. Therefore, from Wood's (1952)

perspective, those who could not keep up with the applications of the digital age were undercut by their competitors.

In addition, this reflects the Republic of Türkiye's imitation of flipped learning based on political and economic gain (Tekel and Öztekin, 2021). This means that the Republic of Türkiye and Northern Cyprus have not only imitated flipped learning based on popular educational approaches in Western culture; rather, both countries have similarly imitated the economic strategy of keeping up with the digital age, as evidenced by the government policies of both countries (Kizildag and Simsek, 2015). This digital age, created by the historical post-war movements related to capitalism and industrialisation mentioned above, guided global changes in digital technology (the introduction of IT) and education until the 1980s. From the 1960s onwards, e-learning was associated with the first computer-based software for education for economic purposes and presented to the world via an electronic screen (Tolbert Jr., 2015). The introduction of this type of e-learning for business purposes required employees to bring and maintain their professional competence and integrity in line with the digital age. To meet this requirement for professional competence and integrity, employees had to improve their professional knowledge and skills through knowledge of the technological developments, procedures and standards that applied to their economic sector and encourage (including instruct) their subordinates to follow the same path. It was not until the invention of microcomputers and the Internet-based Web 1.0 ('read-only Web' for locating and reading information [Aghaei, Nematbakhsh and Farsani, 2012]) in 1989 that the spark of enthusiasm for including IT in education, other than for economic purposes, was ignited among educators around the world (Swalwell, 2012).

However, this study observes that Web 1.0 did not provide the means for communication and sharing of information via the Internet, as the world now defines the term ‘e-learning’ as online ‘digital learning’ (Nwagwu, 2020). It was not until the invention of Web 2.0, the ability to communicate and share information online via the Internet, in 1999 (Lim and Newby, 2019) that e-learning emerged in the digital form in which the world uses it today (Sahni, 2019). Digital e-learning for education began with Web 2.0, according to Masie (1999). On this basis, Masie (1999), as supported by Pollard and Hillage (2001), advocates that:

[Online] learning is the use of network technologies for planning, delivering, choosing, administering, and expanding learning. E-learning is thus based on 'Internet Time', the convergence of network and learning. E-learning is a vision of what corporate training should become. What e-business is to business, e-learning is to traditional learning (p.7).

Web 2.0 should not be confused with Education 4.0. While Web 2.0 paved the way for the digital learning component of e-learning, Education 4.0 is a metaphorical concept, that has been constantly evolving since the 2000s (Schwab 2015). Suvin (2020) notes that:

[Education 4.0] is a purposeful approach to learning that lines up with the fourth industrial revolution (Schwab, 2015) and about transforming the future of education using advanced technology and automation (Suvin, 2020, p.1)

Suvin (2020) further notes that the major trends of Education 4.0 as forms of benefits summarised in Table 1.1 below, are crucial in terms of differentiating between Web 2.0 and Education 4.0. on the basis that Web 2.0 focuses on technological development, for example, sharing information online, while Education 4.0 focuses on the pedagogy of education in the context of providing a personalised learning experience (Suvin, 2020).

Table 1.1. Benefits of Education 4.0 (Suvin, 2020, p.1)

1. A More Personalised Learning
2. More Remote Learning Opportunities
3. The Plethora of Education Tools: Virtual Learning Platforms such as Moodle (2002) and Edmodo (2008) (Krouska, Troussas and Virvou, 2017; Evseeva and Solozhenko, 2015)

Masie (1999) coined the term ‘e-learning’ to describe the transformation of Education 4.0 through the concept of ‘digital learning’, as defined by Masie (1999) to be, ‘*[an]*

online form of learning with the use of network technology to design, deliver, select, administer, and extend learning' (p.2). From a technological perspective, this definition of e-learning was first publicly used at a seminar on computer-based training (CBT) systems presented by Masie (1999). At the time, within this aforementioned CBT seminar, other labels, such as 'online learning' and 'virtual learning,' also emerged in the search for an accurate definition of e-learning (Alves, Miranda and Morais, 2016).

In the late 1990s, awareness of how to 'conduct' e-learning, as described by Masie (1999), was in great demand (Edosomwan *et al*., 2011). According to Liu *et al*. (2020), in response to this demand, e-learning took on another form and a new definition in 2010. This definition involved educational purposes, starting the era of 'social and online learning,' which is a learning process that emphasises teachers' and students' cooperative and collaborative efforts. This is on the basis that technology provides educators with access to virtual resources through the internet, such as interactive video tutorials (Evseeva and Solozhenko, 2015).

These resources mentioned above enable a transition from knowledge acquisition to collaborative learning, from a conversation between a student and a teacher to an interaction between a student and online resources. This development opened a metaphorical 'Pandora's Box' for educators regarding the metamorphosis of Education 4.0 in terms of the era of 'social and online learning' (Sahni, 2019), with the creation of numerous digital applications and websites between 2000 and 2010, including YouTube (2005) and virtual learning platforms such as Moodle (2002) and Edmodo (2008) (Krouska, Troussas and Virvou, 2017; Evseeva and Solozhenko, 2015). Many universities use virtual learning platforms, both formal and institutionalised, and open-source virtual platform tools. One such platform, Moodle (2002) enables students to log on to online 'classrooms' and engage in learning as they would in traditional face-to-face classrooms (Kumar, Wotto and Bélanger, 2018; Krouska, Troussas, and Virvou, 2017). This includes communicating with their peers and lecturers, viewing content, including synchronous or offline instructional videos presented by their lecturers, and submitting assignments online (Warawudhi, 2017).

The rise of virtual learning platforms instigated e-learning to develop a new definition in the 21st century in both Western and non-Western cultures (Kumar, Wotto and Bélanger, 2018). The definition of e-learning changed to, *'[learning] conducted via electronic media, typically on the Internet, also referred to as distance or online learning'* (Nejad and Nejad, 2012, p. 5016). Accordingly, e-learning is defined as learning by using digital tools (electronic IT) in order to navigate educational curricula outside of a traditional face-to-face classroom (Nwagwu, 2020).

1.4.3. Blended Learning

Further to the definitions stated above, based on the era of 'social and online learning' regarding Education 4.0, a subsidiary form of e-learning had emerged noted as 'blended learning,' which is defined as a mix of online virtual learning platforms combined with traditional classroom learning sessions (Meyer, Wohlers and Marshall, 2014). Blended learning aims to combine the best of online and traditional learning and helps students think inventively, critically, and autonomously using IT in the 21st century (Joynes, Rossignoli and Fenyiwa, 2019). With computers, laptops, smartphones and tablets now accessible to most people around the world, blended learning has become more accessible for many students (Alvarado-Alcantar, Keeley and Sherrow, 2018).

1.4.4. Flipped Learning

In the mid-2000s, based on this intention of learning taken up by blended learning through Education 4.0 and the era of 'social and online learning', the founder of Khan Academy (Khan, 2011) and two chemistry teachers (Bergmann and Sams, 2012) introduced the term 'flipped learning' to support the value of active and student-centred learning and the application and testing of knowledge previously engaged with independently in online sessions in synchronous learning and teaching sessions. This idea of active and student-centred learning led to the emergence and intention of research

based on the concept of flipping traditional face-to-face sessions to create a supportive learning environment in which facilitating meaningful instruction and support for pedagogical purposes is a norm to be introduced (Lage, Platt and Treglia, 2000).

To address this need to promote the role of a facilitator to support the value of active and student-centred learning in flipped learning, the focus shifted to teacher education programmes in Western cultures, with the need for all teacher education programmes to equip teachers with the skills for flipped learning. On this basis, IT has become a significant addition to current education because it supports active and student-centred learning in any location and alongside face-to-face teaching in a classroom or other specific environments (Foster, 2019). It is important to note that flipped learning cannot be considered a model of blended learning. Unlike blended learning, current flipped learning, which is based on the concepts of Bergmann and Sams (2012) and Khan (2011), inverts traditional face-to-face campus-based learning processes and implements them asynchronously. It consists of a mix of traditional face-to-face and blended learning and involves reading, viewing, and consuming learning materials in the classroom and completing assignments online outside of assigned classroom sessions (Thai, De Wever and Valcke, 2017). Moreover, flipped learning is not limited to an on-campus classroom, as students view short video lectures or other multimedia materials related to their learning asynchronously via a virtual learning platform (for example, Moodle [2002] or Edmodo [2008]) before attending a synchronous in-class instructional session (whether in a physical room or in a live interactive online session) (Goh and Ong, 2019). Accordingly, flipped learning enables face-to-face on-campus or live interactive online teaching to be uninterrupted while 'offsetting' the constraint or requirement to learn online before or after the session (Evseeva and Solozhenko, 2015). On this basis, the following subsection explores the pedagogical ambitions behind value learning in flipped learning.

1.4.5. Pedagogical Ambitions Behind Flipped Learning

The pedagogical ambitions behind the value of learning within flipped learning can be described by underpinning the 'apply and analyse' stages of Bloom's (1956) taxonomy for

the 'application' of knowledge and the 'evaluate and create' stages for the 'testing' of knowledge (Mohan, 2018). Therefore, based on Bloom's (1956) Taxonomy, the 'application' stage in the face-to-face portion of flipped learning supports the 'apply and analyse' levels, in which students use and draw connections among ideas based on the knowledge they received in an online session. In addition, the 'testing' stage in the face-to-face or live interactive portion of flipped learning, based on the 'evaluate and create' levels, is represented by students using the knowledge acquired online in the 'application' stage in face-to-face sessions to justify a decision and produce an original thought or product based on the topic they are studying. The introduction and initial response to flipped learning, described above, were first enlightened by the definition of electronic e-learning proposed and begun by Masie (1999), which led to the term 'flipped learning' being coined by Bergmann and Sams (2012), and second, brought into common usage by Khan (2011) in the early mid-2000s through Education 4.0 and the era of 'social and online learning'. Accordingly, it was further instigated by the Bologna Declaration of 19th June 1999 (European Ministers in Charge of Higher Education, 1999), which called for the development of syllabus design based on constructivist perceptions (an interactive construction of knowledge [Piaget, 1968]) and will be further discussed in the upcoming section. The incentive for flipped learning arose from the need for well-trained and adaptable teachers in Europe, as teacher trainees are expected to acquire specific knowledge about teaching and accordingly build generic skills (for example, IT skills, such as conducting flipped learning online) that would support them to work in a variety of settings (European Ministers in Charge of Higher Education, 1999). In addition to, *'[taking] on the challenges of the new millennium, along with an understanding of common values and affiliation of common social and cultural space'* (European Ministers in Charge of Higher Education, 1999, p. 2).

Supported by these four important figures (Bergmann and Sams 2012, Khan, 2011, Masie, 1999 and the Bologna Declaration of 19th June 1999 [European Ministers of Higher Education, 1999]), flipped learning has become a focus of educational research in Western culture. This will be further clarified by using the United Kingdom (UK) as an example to provide a comparison based on this focus. Flipped learning gained traction in various educational institutions in the United Kingdom (Hamdan *et al.,* 2013). There are

several case studies of flipped learning in the UK (for example, Matthew *et al*., 2019; McManus, Haddock-Fraser and Rands, 2017). However, it is worth noting that the Education Endowment Foundation (EEF) (2013) conducted the first UK case study of flipped learning in a school setting over a five-year period. This was the 'Maths Flip' programme (a flipped learning classroom focused on mathematics), which aimed to improve the mathematical skills of students in years five and six (UK-based primary education levels).

According to EEF (2017), students who participated in the Maths Flip programme made about one month's more progress in their classes than students who did not participate in the programme. In addition, teachers in the programme expressed positive views about flipped learning. For example, they felt that it encouraged students to be more active in their studies rather than just passively listening to classes. At the time of this first case study in the UK, as EEF (2017) further noted, flipped learning was proving to be successful and helpful for both students and teachers, but the approach was not without its drawbacks. The professional support based on teachers' IT skills provided during the case study, while integral to flipped learning, was insufficient. It was also acknowledged that alternative online connectivity would need to be offered to schools with students who do not have access to the Internet at home.

Although this case study by the EEF (2013; 2017) is based on a primary level, it is of utmost importance to this present case study's higher education context on the basis that, as noted, it was the first UK case study consisting of flipped learning that inspired a wave of other studies in higher education (for example, Farmer, 2018; Straw *et al*., 2015) that explored flipped learning and gave further examples in the United Kingdom.

These studies concluded that flipped learning embraced the use of digital technologies to open a pathway to a new way of thinking and working in the twenty-first century and that it fits within the 'Fourth Industrial Revolution' and the 'Education 4.0' frameworks (the 2000s and on) (See Figure 2). This supports the argument made by Warawudhi (2017) that flipped learning is a response to the needs of industry and Education 4.0. The power of digital technology, individualised data, open-source content, and the new civilisation of this globally connected and digitally fuelled world are combined by people and IT to

create new opportunities. This in turn creates a blueprint for lifelong learning, from childhood education, through higher education and workplace learning to learning to be a digital citizen in society: for example, using IT to engage in society, politics, and government (Ohler, 2011). It is, therefore, recognised that there is a need in Western cultures (using the UK as an example) to train teachers and trainee teachers with digital skills for flipped learning. In particular, Western cultures have turned their attention to the values of active learning within flipped learning, while Türkiye and Northern Cyprus remain in the ideology of Western cultures of the 1980s, where the digital age emerged through historical post-war movements related to capitalism and industrialisation (as described above).

The next sections will look at how the historical events discussed in the context of flipped learning in Western cultures have influenced the way learning and teaching are shaped in that Western culture. This discussion will explore how the roles of teacher trainees and teachers are perceived in this approach and how the relationship between teaching and learning has changed regarding teacher trainees based on these perceptions in Western culture in order to provide a comparison for the relationship between Northern Cyprus and flipped learning regarding teacher trainees.

1.5. How E-learning has shaped Flipped Learning within Western Cultures

Teaching and learning, and teacher trainees' perceptions and teachers' roles in learning, can be shaped by many factors, including philosophy, theories, and alternative approaches to learning (O'Neill and Senyshyn, 2011). This is done by considering the historical events concerning the origins of e-learning that instigated the initial pioneering work on flipped learning discussed (Bergmann and Sams, 2012). The following paragraphs will discuss how these historical events have influenced the way teaching and learning are conducted.

Teaching and learning have been shaped by the history of the origins of e-learning up to the present day. Accordingly, consideration of the terms 'digital natives' (those born into the digital age after the 1980s), and 'digital immigrants' (those born before the 1980s and the digital age) coined by Prensky (2001), have reshaped perceptions of the role of teacher

trainees and teachers in learning (Howlett and Waemusa, 2018; Genkins, 2017). These two terms have sparked a current debate in education research about the general role of students (including teacher trainees) in learning, as some argue that students born after 1980 (digital natives) can seamlessly work with flipped learning because they were born into the era of these technologies (Kesharwani, 2020). However, other studies (for example, Bullen and Morgan, 2016) have shown that automatically labelling students born after the 1980s as digital natives is based on invalid assumptions. Indeed, digital immigrants born before the era of widespread adoption of IT (for example, before the 1980s, [Prensky, 2001]) have lesser exposure to 21st century technological tools (for example, microcomputers) (Uner, Guven and Cavusgil, 2020). In turn, however, many digital natives do not have the digital literacy for the digital tools used in their courses, such as PowerPoint (the presentation program, [Suša, 2015]) and other Microsoft tools via microcomputers or any form of other compatible digital devices (Bullen, Morgan and Qayyum, 2011).

Therefore, all students should be equally referred to as 'digital learners' rather than dividing them into digital natives and immigrants (Bullen and Morgan, 2016). It is important to note that the 1980s is used as a dividing point for digital natives and immigrants, because the first microcomputers were invented and integrated into many Western national curricula (for example, in the United Kingdom) based on the post-Cold War movements to de-industrialise the economies of many countries (Tolbert Jr., 2015). Web 2.0, which is the ability to communicate and share information online via the internet, was invented in 1999 (Lim and Newby, 2020). It can be concluded that the generation born after the 1980s was possibly exposed to the first microcomputers from an early age in their homes, libraries, and educational institutions (Zenios and Ioannou, 2018; Wang, Myers and Sundaram, 2013). Despite findings such as those of Bullen and Morgan (2016), researchers and teachers have still mainly focused on the skills of digital natives and digital immigrants when considering flipped learning (Suša, 2015). The pre-assumptions based on the digital skills of students in higher education can be seen as a starting point for an exploration of the topic of ethics within flipped learning. This topic has been considered by many researchers (for example, Chen and He, 2013; Bandara, Loras and Maher, 2014) in protecting students from the security risks associated with

compromising a student's identity on an online platform. However, many researchers (for example, Bouilheres *et al*., 2020; Jeffrey *et al*., 2014) have suggested that the security of students' online identities should not be the only priority of ethics in this context. They argue that the psychological wellbeing of students (including teacher trainees) should also be considered as an ethical consideration in this context, drawing on presuppositions associated with the notions of 'digital native' and 'immigrant,' as discussed previously.

Current arguments (for example, Virtue, 2020; Ayala-Perez and Joo-Nagata, 2019; Nikou, Braennback and Widén, 2018), on the persistence of the terms 'digital natives' and 'immigrants' in higher education, and the presumptions associated with them, particularly in relation to advances in ICT and digital literacy in flipped learning in recent years, hold that there are particular differences between digital natives' and immigrants' knowledge of digital literacy and the use of digital technology in informal and formal higher education contexts. For example, the lives of many digital natives revolve around the informal use of modern technologies (for example, using laptops to socialise through social networks such as Facebook in daily life) (Gentina and Chen, 2019). However, in a formal educational setting, many digital natives lack the specific digital literacy required to use ICT in their studies (as mentioned by Bullen and Morgan, 2016).

The basic assumption that digital natives have the digital skills that digital immigrants lack has led researchers, notably White and Le Cornu (2017), to argue for the elimination of these terms and their replacement with the new terms 'visitor mode' and 'resident mode,' which offer a simpler way of describing a broad range or continuum of online engagement. According to White and Le Cornu (2017), in visitor mode, learners select the task they want to complete online and, once completed, go offline or move on to another task. An example of this mode would be a learner searching online for a specific piece of information, finding it, and then going offline. In resident mode, a learner also uses the Internet for purposes other than instruction, such as socialising on the Internet. White and Le Cornu (2017) note that they developed these two types of modes to better understand individuals' motivations when using the Internet in different contexts, including higher education. They do not claim that one mode of engagement is better than the other, only that different modes are used depending on the motivation and context (for example, higher education courses) of the individual. Although White and Le Cornu

(2017) have coined these terms to replace the concepts and assumptions around digital natives and digital immigrants, they have still divided learners into two distinct groups, which in turn create different modes for learners. Accordingly, this division of learners into visitors and residents still ignores inequalities between learners (for example, issues of accessibility and poverty, discussed further in Chapter 4 of this study).

Thus, other researchers (for example, Khan *et al*., 2020; Gallardo-Echenique *et al*., 2015; Bullen, Morgan and Qayyum, 2011) argue that the terms 'digital natives' and 'digital immigrants' should be abolished and replaced with the single, generic term noted as 'digital learners'. These researchers and this study argue that the use of a single term such as 'digital learners' promotes equality among learners (including teacher trainees). This argument is primarily based on the fact that the above researchers believe that labelling learners, for example, as digital natives and immigrants or as visitors and residents, leads to presuppositions about the digital literacy of these learners in flipped learning, which then leads to a rise of imposter syndrome (as defined below) among these learners, especially for many learners who are teacher trainees without access to current technologies to develop their digital literacy (Wong, 2018; Genkins, 2017).

Imposter syndrome is described as a persistent feeling of scepticism about oneself, including despair at being seen by others as an intellectual fraud (Maqsood *et al*., 2018). Regardless of ability, individuals suffering from ‘imposter syndrome’ find it difficult to accept a sense of accomplishment or level of achievement, believing themselves to be less intelligent than they are perceived to be by others (Gibson *et al*., 2019). Therefore, when imposter syndrome is associated with flipped learning and teacher trainees, many of the teacher trainees who are classified as digital natives of higher education experience imposter syndrome in relation to their digital literacy and skills in using a particular type of ICT and may even doubt their future as teachers at any grade level and in any subject area (Cisco, 2020).

Teachers in teacher education programmes who abide by the definitions presented by these terms (digital native or immigrant) re-shape their teaching methods according to the skills they assume their teacher trainees possess. They also reshape their role in teaching and learning by sharing their 'power of teaching' with these aforesaid assumptions (Goos

et al., 2000). Accordingly, assumptions undertaken by teachers based on teacher trainees' skill sets may affect the virtual method tools selected for flipped learning, hence sharing their 'power of teaching' with these assumptions, as noted. For example, assumptions about digital natives' skill sets may lead a teacher to choose an automated form of instant feedback on teacher trainees' test scores based on online multiple-choice questions, hence sharing their 'power of teaching' (Ozer *et al*., 2019; Finnegan, Kauppinen and Warnsby, 2015; Mendieta, 2012). This form of automated feedback is non-traditional because a classroom teacher traditionally grades students manually. Thus, when teachers take a flipped learning path, they redefine their role in teaching and learning (Sayani, 2015). Undoubtedly, the perceptions and approaches of flipped learning have changed the relationship between teaching and learning, through the digital native and immigrant debate, and through the acclaimed student-centred approach that flipped learning instigates, based on teaching approaches that move the emphasis from the teachers to students (discussed further in Section 1.5.1 and Chapter 2) (Malczyk, 2019; Lokie Jr., 2008). Based on all the above, it can be said that the origins of e-learning that led to flipped learning lie in the use of IT and ICT as metaphorical teaching tools in the education of teacher trainees. What was once a post-war tool in the education of teacher trainees and teachers by integrating the latest technology into education for economic purposes in Western culture has changed with the advent of the era of 'social and online learning' (Sahni, 2019). This has led to a reliance on IT and ICT among teacher trainees to retain information.

According to Yao (2019), teacher trainees' dependence on teachers to provide them with information has changed with flipped learning. Teacher trainees no longer turn to their teachers in search of knowledge. Instead, they use technological tools, especially the internet (for example, YouTube videos on teaching methods). This change is particularly notable in higher education, as what used to be a teacher-led lecture has transformed into a practice of student autonomy, where the teacher becomes a facilitator of learning through a form of IT. Thus, teaching itself becomes a student-centred approach by integrating electronic IT and offering flexibility in terms of time, place, and pace of learning (namely, flipped learning).

Hence, teacher trainees can now determine how they learn. However, it can be easy for student-centred learning to lose focus when faced with the pressure to integrate new ITs (McLean *et al*., 2019). The question that arises here is whether there is still an economic gain behind the intention of flipped learning in higher education in Western cultures, as this leads to the intention of economic gain re-emerging through Western imitation in Northern Cyprus. Accordingly, the role of teaching can be seen as a source of inefficiency because if teacher trainees become completely dependent on IT in any way, then the teacher as facilitator would cease to exist, leading to a paradox in teacher education. This would change the fundamental economic position of teaching professions, including professions that rely on information transmission, such as document translation and proofreading (Vanslambrouck *et al*., 2019). Thus, the nature of the relationship between teaching and learning through the method of teaching has changed owing to the popularity of flipped learning (Yu, 2015). Based on the timeline presented above and the discussion of digital natives and immigrants, this study acknowledges that since the introduction of e-learning (including blended learning and flipped learning as a standalone approach), the pedagogical relationship between teaching and learning has changed. The transition has been from the teacher-led, didactic, transmission-based (behaviourism, [Malone, 1975)]) automated teaching of the 1840s to the 1959s to the student-centred, interactive construction of knowledge (constructivism, [Piaget, 1968]) epitomised by the digital age introduced in the 1980s (Schwab, 2015: Figure 2). This relationship between teaching and learning becomes a shift from teacher-led to student-centred learning (as mentioned). The next section will highlight this relationship and the noted benefits of flipped learning in Western culture to further emphasise the context of Western emulation of flipped learning in Northern Cyprus.

1.5.1. Benefits of Western Teaching and Learning in Flipped Learning

According to Meyers, Erickson and Small (2013), the era of 'social and online learning' (Sahni, 2019) has created expectations for digital literacy. All students are expected to

have digital skills, and their teachers are expected to have the educational digital literacy skills to teach them these skills. This is reminiscent, for example, of the history of revising the national curriculum in the Republic of Türkiye and Northern Cyprus to produce future technologically capable citizens for their Western-style workforce (Birgili, Seggie and Oğuz, 2021). To create a 21st century digital citizen, flipped learning has been based on the era of 'social and online learning' since 2010 (Ohler, 2011), which includes the 'benefit' of efficiency in teaching digital skills as a policy of the Department of Education in Northern Cyprus (Jensehaugen, 2017).

In addition to this benefit of digital skills delivery, flipped learning was also based on three other goals (benefits): accessibility, time efficiency, and student-centredness in higher education (Birgili, Seggie and Oğuz, 2021). These goals have been used by many people, such as researchers, officials, and representatives of educational institutions of all grade levels, governing boards, and ministries, to support research on the probabilities of flipped learning as a pedagogically valuable approach to increasing admission to educational institutions (Malczyk, 2019).

More and more higher education institutions with Western cultures are looking at technology integration as a school-based initiative to prepare students to be digital citizens (Logan, 2016). Students are expected to be able to acquire digital competencies by learning to copy digital competencies from those who teach them (for example, teachers) to create a collection of digital citizens (Falloon, 2020), which carries the essence of 'behaviourism' (didactic transmission-based [Malone, 1975]) as a learning method in this case.

However, many have argued (for example, Birgili, Seggie and Oğuz, 2021; Al-atabi and Al-noori, 2020) that the promise of student-centredness in flipped learning is to change the relationship between teaching and learning by creating a shift from teacher-led to student-centred learning, from a didactic transfer-based method (behaviourism) to an interactive construction of knowledge (constructivism). According to Tubbs (2016), epistemology, the theory of understanding information in relation to the philosophical categories of knowledge and its justification in philosophy (Scotland, 2012), is rooted in 'constructivism' in education and often focuses on both the reasoning of a student

teacher's specific subjective experience and conventional wisdom. On this basis, Tubbs (2016) acknowledges that constructivism assumes that the learner (teacher trainees) has prior knowledge and experience from their social and cultural context and that learning is achieved by 'building' on students' understanding through their learning experience. Tubbs (2012) further argues that the behavioural school (behaviourism) of learning can help to understand what students are learning. However, teachers still need to know what students are thinking and how to enrich the method of instruction through which students are learning. Some scholars argue (for example, Vygotsky 1987; Piaget, 1963) that the 'constructivist view' emerged as a reaction to the so-called transmission model (behaviourism) of education and the functional theory on which it was based.

First, in the work of Piaget (1963) from 1896 to 1980 and founded by his theory of 'cognitive development', 'constructivism' can be said to be based on accumulating knowledge in a student-centred method and influenced by 'educational psychology' in terms of the relationship between perceptions and thoughts (Vaseekaran, 2019). Piaget's (1963) perspectives focused on individual development and what happens to an individual's perceptions and thoughts when distinguished from the development of others.

Secondly, the basis of 'constructivism' can be traced back to Vygotsky's (1987) theory of social constructivism, in which he emphasises the value of 'sociocultural learning'. He describes how learners internalise interactions with an older generation, peers, and cognitive resources to form mental constructs in their 'zone of proximal development,' which Vygotsky (1987) defines as the space in which a learner can accomplish a task with or without peers or an adult (for example, their teachers). Furthermore, building on Vygotsky's (1987) theory, Bruner (1961) introduced an important principle of pedagogical scaffolding, where a social or informational environment provides support (or scaffolding) for learning that is gradually removed as it becomes internalised (assimilated) in the learner's knowledge.

This method of scaffolding can be linked to Bloom's Taxonomy (1956) in relation to flipped learning through the 'constructivist' stance mentioned above. Kanjug *et al*. (2018) argue that flipped learning is seen as an approach that complements a 'constructivist' learning environment. By viewing, listening to, or reading content-specific material

asynchronously, learners can design their own learning experiences. When they come to their synchronous classroom or live interactive online session after their online session, the instructor has planned exercises that help learners collaborate with their peers to process the knowledge they have previously acquired asynchronously. At a deeper level, learners 'apply' the skills they have developed asynchronously at home, as the teacher is present synchronously to direct students through this 'applying' process, confirming or correcting their interpretations of the application of the skills they have developed (echoing Bloom's (1957) Taxonomy).

To further align this approach with ‘constructivism,’ the face-to-face campus-based and live-interactive online class session is focused on the 'application' or 'testing' of knowledge gained during the online session (Mohan, 2018). This can be described by the 'apply and analyse' level for the 'application' of knowledge and the 'evaluate and create' levels for 'testing' of knowledge in Bloom's (1957) Taxonomy. Thus, based on Bloom's (1957) Taxonomy, the 'application' stage in the face-to-face portion of flipped learning supports the 'apply and analyse' levels, in which students use and draw connections among ideas based on the knowledge they gained in the online session. The 'testing' stage in the face-to-face and live-interactive portion, according to the 'evaluate and create' levels, is represented by students' use of the knowledge gained online from the 'application' stage in the interactive sessions to justify a stand or decision and create an original thought or product based on the topic they are studying.

However, many researchers (for example, Li, 2018; Kim *et al*., 2016; Szparagowski, 2014) claim that the interactive construction of flipped learning does not meet the criterion of student-centredness in ‘constructivism theory’. As McDonald (2003) noted, the need to promote student-centred learning was considered in light of the value of active learning in flipped learning. The focus shifted to teacher training programmes in Western cultures (for example, the United Kingdom), showing that all teacher training programmes should equip teacher trainees with the IT skills for flipped learning. As a result, IT has become a significant addition to current education because it enables active and student-centred learning in any location alongside face-to-face teaching in a classroom or other specific environments (Mohan, 2018). The benefits of flipped learning

in Northern Cyprus will be compared to the benefits of teaching and learning in Western culture in the following section.

1.5.2. Benefits of Teaching and Learning in Flipped Learning in Northern Cyprus

Many benefits have resulted from Northern Cyprus's flipped learning experience, which are similar to the main benefits of flipped learning in Western culture (Ercetin *et al.,* 2019). In Western culture, the main advantages of flipped learning are as follows: increased digital literacy, accessibility, time efficiency, and student-centredness (Birgili, Seggie, and Oğuz, 2021; Meyers, Erickson, and Small, 2013).

Many studies (for example, AL-Mugheed K and Bayraktar, 2021; Taşpolat, Özdamli, and Soykan, 2021; Ironsi, 2020) found that flipped learning in higher education enhanced teacher-student communication, increased student independence in terms of accessing courses regardless of time or location, helped to save time, particularly during repetition, provided a student-centred structure, and increased student engagement. Furthermore, flipped learning has been found to promote autonomy in the learning process in Northern Cypriot education (Etemi and Uzunboylu, 2020). Students reported feeling at ease viewing recorded lectures online in their personal space. They reported, for example, that they did not feel awkward asking lecturers to repeat what they did not understand because they could simply rewind the recorded lecture and learn at their own pace.

Other studies on flipped learning in non-Western cultures found Northern Cyprus to have similar benefits. Gallardo-Guerrero *et al*. (2022) discovered that the majority of students in Spanish universities saw collaborative group work as a major advantage of flipped learning as well as the benefit of active learning, whereas Yang, Lin, and Wang (2021, p.3) discovered that students at Zhejiang University saw flipped learning as beneficial to comprehension, critical thinking, patient management, and teamwork.

Many of the studies cited above identified digital literacy as a key challenge, as well as the need for technological development, such as the technical infrastructure that Northern Cyprus lacks (Taşpolat, Özdamli, and Soykan, 2021). Based on the history of the origins of flipped learning in Western cultures and the benefits of flipped learning in

relation to teacher education programmes in Western cultures (See Sections 1.5 and 1.5.1), as well as the contradictory findings in relation to Northern Cyprus, the cultural differences between Western culture and Northern Cyprus are highlighted in relation to the importance attached to the professional development of teachers and teacher trainees in relation to flipped learning.

In response to the requirements of Industry and Education 4.0 (Schwab, 2015: Figure 2) in relation to flipped learning and teacher education, Western culture (for example, the United Kingdom) adopts the' social constructivism' approach highlighted in the Bologna Declaration 1999 (European Ministers in Charge of Higher Education, 1999). Northern Cyprus, on the other hand, employs flipped learning in conjunction with a form of IT in its teacher training programmes (Birgili, Seggie and Oğuz, 2021). It can be observed that this is because of the Republic of Türkiye's imposition of Western culture in order to attract digital citizens in the hope of becoming a member of the European Union (Gök, 2016; Simsek, 1999). As a result, it is necessary to critically examine Northern Cyprus's education policy in relation to the implementation of flipped learning in teacher training programmes. This will be covered in the following section, which will look at the role of educational policies in teacher trainee development.

1.6. Northern Cyprus and Flipped Learning: The Challenges for Teacher Development in Terms of Technology Versus Pedagogy

The rationale behind integrating flipped learning in Northern Cyprus has been discussed in this study up until this point. As part of the Northern Cyprus focus on integrating Western approaches, the Department of Education has commissioned leading academics to research flipped learning through Western counterparts (Birgili, Seggie and Oğuz, 2021). In doing so, leading academics Güzer and Caner (2016) indicated that teacher education programmes in Northern Cyprus should focus on the use of technology in teacher training as a mechanism for developing digital literacies within the flipped learning approach.

Based on Güzer and Caner's (2016) recommendations, courses were designed following Koehler and Mishra's (2006) *Technological Pedagogical Content Knowledge* (*TPACK*) framework (Figure 3 below) and integrated into the teacher training programmes in Northern Cyprus. This integration was described by Güzer and Caner (2016) as a formal, uniform integration across all higher education institutions in Northern Cyprus. There are no formal legal guidelines available through the Department of Education, owing to the de facto state status of Northern Cyprus under the regulations of the Republic of Türkiye (Themistocleous, 2018; Jensehaugen, 2017). In doing so, Northern Cyprus, as a de facto state, instead tasked leading academics Güzer and Caner (2016), as discussed previously in this chapter, to investigate flipped learning with the help of their Western counterparts (Güzer and Caner, 2016). Accordingly, further empirical work addressing the incorporation of flipped learning as an educational policy intervention through the recommendations of Güzer and Caner (2016) using the *TPACK* framework can be seen through the evidential incorporation of flipped learning in Northern Cyprus in the context of this study focusing on teacher training programmes, namely at Girne American University (GAU) (2020), which is discussed in the upcoming Sections 1.7 and 1.8, and other higher education institutions, for example, the European University of Lefke, as noted in a study on flipped learning by Safaklı and Ihemeje (2015).

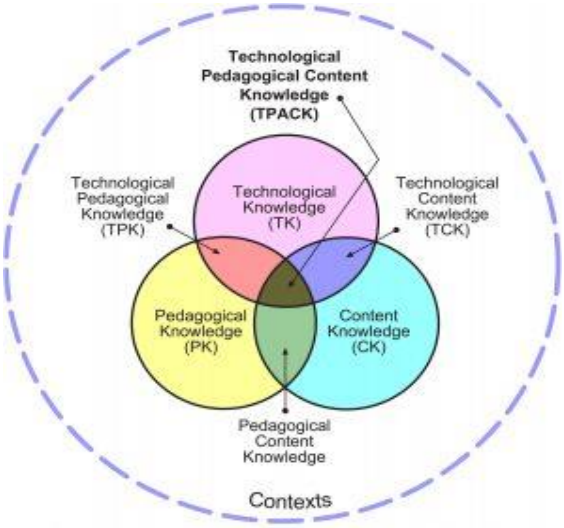

Figure 3. The Technological Pedagogical Content Knowledge (TPACK) Framework

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Koehler and Mishra (2006) have been quoted that within this *TPACK* framework lies:

[Three] main areas of knowledge content knowledge: (CK), pedagogical knowledge (PK), and technological knowledge (TK,) in addition to four combinations of these three components: technological-pedagogical knowledge (TPK), technological-content knowledge (TCK), pedagogical-content knowledge (PCK), and technological-pedagogical-content knowledge (TPACK) exists. CK is knowledge of a subject matter, PK is knowledge about teaching practices and techniques, TK is knowledge about standard and digital technologies (as reverberated by Sancar-Tokmak, Surmeli and Ozgelen, 2014, p.248).

Koehler and Mishra (2006) created this framework with the aim of understanding and identifying the kind of knowledge a teacher (including teacher trainees) requires in an ICT-enhanced classroom climate to help complexities around technology integration, including the notion of teachers who may be technophobes, relax. Technophobes in education (including teacher trainees) are individuals who fear, reject, or avoid the use of IT in their studies (Lam, 2000). Since not all teachers and teacher trainees are familiar with the new ICT methods used in online learning, there is a gap in digital literacy. This has led to a particular phenomenon, titled: 'teacher technophobia,' where teachers and teacher trainees feel anxiety toward the educational use of technology because of a lack of digital literacy and training, resulting in a gap between teachers and flipped learning (Osiceanu, 2015; Celik, 2013; Rahimi and Yadollahi, 2011).

In relation to the complexities of technology integration and teacher technophobia, it is important to emphasize that digital literacy is at the heart of both of these challenges. Exploring digital literacy and its role in this context is therefore critical. Although other studies on Northern Cyprus, such as Ibrahim, Nabegu, and Ahseen (2022); Uysal and Çağanağa (2022); Lesinger, Şenol, and Hürriyetoğlu (2022), focus on other major challenges such as the ability to design online courses and the use of digital tools in digital forms of education such as Moodle (2002) in flipped learning, these challenges still highlight the importance of requiring digital literacy

within teacher education programmes. This is consistent with the description of Education 4.0, which is centred on the digital age (Schwab, 2015). This link is related to the belief that Education 4.0 is a deliberate approach to learning that aligns with the fourth industrial revolution (Schwab, 2015) and aims to transform the future of education through the use of advanced technology and automation (Suvin, 2020, p.1). As a result, the use of terminology such as 'technical skills' amounting to digital literacy (Güzer and Caner, 2016) is critical in drawing attention to the fact that the phrase 'technical skills' is frequently used as a synonym for digital literacy (See, for example, Güzer and Caner 2016, Koran, Berkmen and Adaler, 2022, and Durak, 2022).

Cannell and Gilmour (2013) noted that support for engagement with technological advances is sometimes viewed as simply a matter of developing new technical skills; however, there is evidence that, while staff may be reluctant to disclose deeper learning needs in some circumstances, adequate technical training and pedagogical progression are effectively considered together (Cannell and Gilmour, 2013, p.2).

This argument, presented by Cannell and Gilmour (2013) for the United Kingdom, illustrates the path Güzer and Caner (2016) have chosen to imitate by following the 'support' of professional development seminars in Western cultures such as the United Kingdom in order to support the above-mentioned development of technical skill teachers' and teacher trainees. Beyond this, however, it is important to note that *TPACK* emerged within the framework of the ‘constructive’ student-centred learning discussed up until this point in this study, which Western culture sought to achieve with the benefits of flipped learning in Koehler and Mishra's (2006) vision. Koehler and Mishra (2006) have noted that the separation of technology emphasises the 'what' rather than the ‘how.’ From a teacher trainee’s perspective, teaching becomes a lesson about what technology they will use, what it means, and what skills it requires, rather than how they should teach their students. Many researchers (for example, Lederman, 2020; Kebritchi, Lipschuetz and Santiague, 2017) have argued that the development of teacher trainees' pedagogical practices in relation to ICT must be rewarding and intuitive. Otherwise, teacher trainees who lack digital literacy will be frustrated by constant professional development and continuous updates or guidance on how to implement and use online education tools.

Even the more recent studies in the Republic of Türkiye and Northern Cyprus: For example, Polat and Karabatak (2021), who attempt to focus on student-centred learning from the *TPACK* framework, focus on teachers' technical skills in flipped learning through their given statement of: *'[flipped] learning is formed for information technologies (IT) courses'* (Polat and Karabatak, 2021, p.19). Another study by Demirok and Baglama (2018) in Northern Cyprus, based on examining technological content knowledge through the *TPACK* framework, argues that technology and the application of technology in education have become inseparable concepts. They note that, '*[teachers] are expected to be competent in using technology in education effectively, in addition, to having essential knowledge and skills in the teaching profession'* (Demirok and Baglama, 2018, p.507).

These two studies indicate that flipped learning is a means of acquiring skills in IT and ICT in the Turkish education system, which is exactly in line with the intention of the government authorities of Northern Cyprus (as discussed in this chapter), and through the integration of flipped learning by the means of the *TPACK* framework based on Güzer and Caner's (2016) recommendation to acquire digital skills. Therefore, it is noted that many of the studies to date have focused on the digital literacy of teachers and teacher trainees rather than the educational value of flipped learning (Tekel and Öztekin, 2021).

This is a focus on technological value rather than educational value that Northern Cyprus's Western counterparts focus on, as explained in the promises of flipped learning (Polat and Karabatak, 2021). This focus on technology is seen as a reference point in many of Northern Cyprus's non-Western counterparts; for example, studies in universities in South Korea (Kim *et al*., 2016) and the Republic of Türkiye (Cinarbas and Yagci, 2015) have discussed the weaknesses of flipped learning by focusing on the lack of digital literacy among students and teachers.

This focus on digital literacy has also led Northern Cyprus to focus heavily on the notion of digital natives and immigrants through the *TPACK* framework (Keshavarz and Hulus, 2019). A recent study by Nawaila, Kanbul and Mustapha (2019) looking at digital natives and immigrants in Northern Cyprus based on students' digital literacy in flipped learning, finds that only 60% of the 512 students studied (including teacher trainees) have functional digital literacy, for example, having mastered Microsoft Office tools such as creating a PowerPoint file. They also note that, *'[undergraduates] are rarely treated as a*

distinct population, when it comes to program design and policy, they are often merged with adolescents or adults' (Nawaila, Kanbul and Mustapha, 2019, p.2).

Based on the above, it can be stated that teacher trainees of all educational levels, whether undergraduate or postgraduate, are expected to gain and possess digital learning through flipped learning. As mentioned earlier in this chapter, Northern Cyprus has focused on the development of flipped learning as an educational policy to keep pace with current technological developments in Western cultures, as prescribed by the Republic of Türkiye.

Tekel and Öztekin (2021) argue in their study, based on teacher trainees in the Turkish education system that, education should be considered an asset rather than a structure aimed at social, legal, political, or economic change. This inevitably leads to a restructuring process in the Turkish education system, where the authorities try to meet the demands of today's world instead of focusing on the professional development of teacher trainees.

In line with Tekel and Öztekin's (2021) critique of the Turkish curriculum from the perspective of teacher trainees, this study observes that the policies enforced through the *TPACK* framework in Northern Cyprus, in the studies based on teacher education programmes discussed in this section, focus on digital literacy and rarely explore other factors that may affect teacher trainees as students themselves in flipped learning. Factors that impact learning are factors that can affect the understanding of what is being learned and influence the learning process of each student (Huang and Hew, 2017).

It is crucial to explore these factors that affect teacher trainees in flipped learning, as teacher trainees bring something extra to flipped learning. Teacher trainees are exposed to ideas about learning and teaching during their studies, which shapes their perspectives on flipped learning and how they will teach their future students through this approach to learning (Counsell *et al*., 2000).

Therefore, their relationship with flipped learning is of paramount importance, which leads to the main argument (rationale) behind this study. The following sections first introduce this study and the mentioned researcher's position on this topic. This is followed by a detailed discussion of the main rationale for this study, which relates to the factors

that affect teacher trainees in flipped learning in Northern Cyprus by also presenting the main research question of this study.

1.7. The Researcher

This study focuses on teacher training programmes integrating flipped learning in Northern Cyprus at Girne American University (GAU). This is because this study's researcher was an educator in the training of teacher trainees in flipped learning and a teacher trainee in this type of learning at GAU. This leads to an insider research mind-set (significant experience in the community [Fleming, 2018]), which is discussed in more detail in Chapter 3 on the methodology of this study.

From an insider research perspective and considering all the discussions that have taken place at this point in the chapter, this study has observed the development of technology in Northern Cyprus and the attempt to emulate current technological developments in Western cultures from the viewpoint of teacher trainees themselves.

If teacher trainees are truly the key agents of change in Northern Cyprus, then their opinions should be paramount (Silman *et al*., 2021; Çakmak, Faslı and Baskan, 2013). Although Western culture argues for the student-centredness behind flipped learning (Li, 2018), Northern Cyprus continues to focus on digital literacy through technological-based economic goals, as discussed up to this point. If these teacher trainees are truly teaching future students, then their perceptions should not be focused on economic gain, as they should be able to liberate their students from economic goals that focus solely on digital skills in the form of digital literacy (Tekel and Öztekin, 2021) through flipped learning.

This liberation is significant because Northern Cyprus has created an unbreakable cycle of dystopia in which Western dominance is used as a tool to erase the educational value of flipped learning, which was identified as beneficial owing to its origins in Western culture, as a form of imposed educational colonisation (Tekel and Öztekin, 2021). It is also worth noting that Western domination as a form of colonisation is frequently viewed as a continuation of Western imperialism (Sewpaul, 2016). It can thus be observed that teaching teacher trainees to value Western civilisation as a model for

teaching and learning transfers Western domination to them, which inadvertently leads to undervaluing their non-Western cultural values. As a result of this Western dominance, there are no direct economic benefits in terms of education in relation to Northern Cyprus (Ercetin *et al.,* 2019). Nonetheless, other studies (Al-Omari and Okasheh, 2017; Hanif and Arshed, 2016) have identified the benefits of flipped learning from the perspective of viewing flipped learning as a tool to not only boost the economy of their non-Western culture but also to provide geographically accessible learning to students who cannot travel to face-to-face sessions and to reduce the amount of monthly wages paid to higher education staff (Ercetin et al., 2019).

Northern Cyprus, on the other hand, focuses solely on the economic benefits of flipped learning by utilizing income into the de facto state through higher education enrolment rates (Katircioğlu, Fethi, and Kilinç 2015).This is shown through their study on the economic benefits of higher education in Northern Cyprus based on the '*long-run equilibrium relationship between international tourism, higher education, and economic growth in Northern Cyprus'* (Katircioğlu, Fethi and Kilinç, 2015, p.1).

According to Katircioğlu, Fethi, and Kilinç (2015), the economic gains of Northern Cyprus flow through two sources of income: tourism and higher education. As a result, Northern Cyprus is leveraging broader industrial and economic benefits to encourage infrastructure and facilities in higher education institutions, such as flipped learning, in order to increase the number of international student arrivals to Northern Cyprus (Katircioğlu, Fethi, and Kilinç, 2015), because, according to Katircioğlu, Fethi, and Kilinç (2015), in Northern Cyprus, it is primarily student satisfaction that will attract more students from abroad, as the higher education sector is the most important sector in terms of earning significant foreign exchange and contributing to this small and de facto state.

This emphasis on economic growth through higher education, as noted by Katircioğlu, Fethi, and Kilinç (2015) above, has reshaped the identities of teacher trainees, not as agents of change but as 'sheep following the shepherd's path'. They have no say and are expected to follow educational policies as blindly as 'sheep' following the path laid out for them by the government, hence the metaphorical comparison. Using the metaphor of

'sheep blindly following the shepherd's path', Northern Cyprus can be said to have ignored the educational value of flipped learning that Western countries are attempting to implement (Polat and Karabatak, 2021).

This necessitates an immediate emancipatory response to the relationship between teacher trainees and flipped learning in Northern Cyprus. Based on the focus on economic gain to increase Northern Cyprus's financial income through industrial benefits discussed up to this point, for example, according to Cavusoglu's (2016) report on *'Knowledge Economy and Northern Cyprus'* it, is stated that, education is essential for building the intellectual capital required for economic growth. As a small, developing island with eleven universities, government-assigned education is one of the engine sectors of the Northern Cyprus economy. Cavusoglu (2016) goes on to argue that in today's globalised world, economies must shift from traditional labour-based to modern knowledge-based production techniques. The rise of knowledge-intensive jobs and economic activities, investment in knowledge-based assets, and an increase in well-qualified and educated workforces all point to the fact that knowledge-based economic transformation is both necessary and unavoidable for rapid economic growth.

The following section discusses the main rationale for this study and the main research question, which is based on exploring teacher trainees' perceptions of the factors that influence their experience of flipped learning at GAU. Leading academics, Güzer and Caner's (2016), have noted that teacher education programmes in Northern Cyprus should focus on the application of technology into teacher training as a mechanism to develop digital skills within the flipped learning approach by using the *TPACK* framework (Koehler and Mishra (2006).

Based on Güzer and Caner's (2016) recommendation, courses comprising 'Instructional Technology' based on flipped learning were designed and integrated into the teacher training programmes in Northern Cyprus. Specifically, for example, English-language teaching (ELT) Bachelor's (BA), Master's (MA) AND Doctorate level (PhD) degrees, and a Postgraduate Certificate in Education (PGCE) in GAU, as demonstrated below in Table 1.2.

Table 1.2. Flipped Learning Courses Investigated in this Study

(GAU, 2020)

The Following Programmes are Teaching Degrees or Certification Programmes at Girne American University (GAU) in Northern Cyprus as of 2020:
1. English Language Teaching (ELT) BA (Duration: Four Years) Third Year Course: First Semester: Instructional Technology **2. ELT MA (Duration: Two Years)** First Year, First Semester: Computer-Assisted Language Learning (CALL) **3. ELT PhD (Duration: Two to Five Years)** First Year, First Semester: Approaches to Teacher Education **4. PGCE (Duration: One Year)** First Year, First Semester: Instructional Technology

According to Yaratan and Kural (2010), these instructional technology courses primarily use and aim to use technology efficiently. Teacher trainees are required to learn digital skills that they can use in flipped learning, such as Microsoft Office skills, video conferencing tools, and how to operate a computer and electronic smartboards. Therefore, the type of technology associated with flipped learning is formally ICT and IT-based through these 'Instructional Technology' courses in GAU. The pedagogy behind the design of these courses through the research of leading academics Güzer and Caner (2016), as well as the instruction of government authorities to focus on technology within flipped learning, will be explored in Chapter 2 of this study.

Based on the above, it is acknowledged that this shift in Northern Cyprus and in the pedagogy of flipped learning in consideration of teacher trainee experiences in the flipped learning context, is inadequate, because it is written from a position of policy that focuses on technology, rather than as a pedagogy concerning the voices of teacher trainees within flipped learning. Educational policies surrounding the implementation of flipped learning in Northern Cyprus, based on the inclusion of technology in current teacher education

programmes, creates a tension between the perspective of technological gain for economic purposes and pedagogy in Northern Cyprus while considering teacher trainees.

Ultimately, this creates a tension between teacher trainees' perspectives on the place of pedagogy in flipped learning in their education and their future career in teaching. Even the literature that attempts to assume a pedagogical stance focuses primarily on pedagogy as a constraint on technological accessibility in Northern Cyprus (Wong, 2018; Genkins, 2017). This leads to the integration of flipped learning as an educational policy to promote technological development in response to increasing demand for digital citizens by integrating the latest technologies into education and commerce to keep pace with Western culture (Tekel and Öztekin, 2021).

This leads to the main rationale for this study. It is necessary to examine this policy, which focuses on the development of flipped learning, through the voices of teacher trainees. Education studies around this incorporation of Western approaches regarding flipped learning in the manner of teacher trainees' perspectives as an educational perspective have nearly to none been explored in the way that this study does. This study specifically explores what factors affect teacher trainees' experiences of flipped learning from the viewpoint of teacher trainees themselves.

Factors that affect learning are factors that affect comprehension of what has been taught and may affect the learning process of any student (Huang and Hew, 2017). For example, Huang and Hew (2017) further state that when higher education moves too swiftly (in order to meet course deadlines and goals) and rarely checks whether the student understands what is being taught, the student (including a teacher trainee) develops certain weaknesses in their understanding of what is being taught through the course content.

The above-mentioned teacher trainees (participants) in this study are drawn from a pool of English language teaching Bachelor's, Master's, PhD, and Postgraduate Certificate in Education students at GAU, Northern Cyprus, as mentioned in Table 1.2. These teacher trainees were selected because they are currently teacher trainees or, as mentioned earlier, have undergone teacher training owing to the requirements of their programmes of study. Although these teacher trainees are currently studying at different levels, what they have

in common is that they have been exposed to flipped learning as part of their programme, as formerly discussed.

To understand the factors affecting teacher trainees' experience of flipped learning from the viewpoint of teacher trainees themselves at Girne American University, this study proposes the following main research question:

The Main Research Question:

What are teacher trainees' perceptions of the factors that affect their flipped learning experience in Girne American University?

This study will contribute to the understanding of flipped learning pedagogy in relation to teacher trainee experiences by addressing the main research question. This is because of the growing demand for digital citizens in Northern Cyprus. The following section will go over the study's expected contribution in greater detail.

1.8. The Value of this Study and its Contribution

This study investigates how teacher trainees' experiences of flipped learning at Girne American University are influenced by various factors. Teacher trainees add value to flipped learning because they will be teaching future students. As a result, as previously stated, their relationship to flipped learning merits further investigation (Counsell *et al*., 2000). Another reason for investigating this study is that the emphasis is on the technology of flipped learning rather than how teachers, including teacher trainees, adopt, interact with, or learn from digital technology in the context of flipped learning at GAU (Cinarbas and Yagci, 2015).

Factors that affect learning are factors that affect the understanding of what is being learned and can influence the learning process of any student (Huang and Hew, 2017). Thus, failure to identify the factors that influence teacher trainees' flipped learning experiences can lead to a lack of understanding of flipped learning and how to put it into practice. As previously stated, understanding how teacher trainees experience flipped

learning is important because it may influence how they teach in their future teaching careers. As a result, it is critical to investigate the relationship between teacher trainees and flipped learning, particularly in terms of the factors that influence them in this type of learning. As a result, by allowing teacher trainees' voices to be heard, this study will provide a new perspective on flipped learning from an educational standpoint. In Northern Cyprus, 'flipped learning' is simply the use of technology as a strategy for economic gain (Tekel and Öztekin, 2021). Based on the findings and discussions of this study, this perspective will be formally discussed in Chapter 4 of this study. This will result in the final chapter of this study revisiting the value of this study and its contribution by outlining additional significance based on the above findings and discussion of this study.

It is important to note that this study's contribution is timely and significant, given the switch to sole online learning based on flipped learning during the Coronavirus pandemic (COVID-19) (Aslan, 2021; Bedford *et al*., 2020; Hechinger and Lorin, 2020). This switch was made to allow for the continuation of higher education through virtual teaching, as directed by the Northern Cyprus Government to ensure the safety of teacher trainees and teachers (Cyprus Ministry of Education and Culture, 2020), owing to the impact of COVID-19 on flipped learning, teacher trainees and teachers were forced to take fast-track courses on online learning strategies and technologies, making the pandemic a major flipped learning experiment in educational research (Gao, 2021; Dill *et al.,* 2020). This study can be used to investigate how to implement flipped learning based on students' (including teacher trainees') perceptions of what factors influence them in flipped learning if (or when) another pandemic occurs.

Finally, this study is carried out using the discipline of 'social science' research based on an educational stance via the concept of 'flipped learning,' which traditionally consists of some visual representations of data and information (Susanna *et al*., 2017). In this study, data and information are presented in an unusual manner by combining tables, bar charts, and mind maps. This method of visualisation was chosen by this study to support the analysis and discussion of this study by highlighting key themes and enhancing the readability of these themes for the readers. This method of presenting data and information is discussed in greater detail in Chapter 4 of this study, including why this method of visual representation is used.

1.9. Keywords

This section defines the key concepts examined in this study through the use of keywords. The summarised descriptions provided below will be expanded on in Chapters 2 and 4. It is important to note, however, that the definitions used in this study are specific to the context and should be carefully considered rather than assumed to correspond to more general definitions of the terms.

Flipped Learning: within this study, is defined as an approach that uses computer-based or digital tools to deliver learning content and resources anywhere alongside face-to-face teaching in a classroom or other specific setting: for example, via synchronous online interactions. It is a pedagogical approach in which students access information asynchronously prior to synchronous instruction to apply and deepen learning and solve problems (Basak, Wotto and Bélanger, 2018; Klopfer *et al*., 2009).

Teacher training and education programmes: as noted in this study, the terminology of 'teacher training' and 'teacher education' are interchangeably used as curricula structured to prepare both undergraduate and graduate students to become licensed teachers. These programmes can offer customised coursework to prepare students to teach a specific grade, level, or subject (Erden, 2016).

This study primarily focuses on specific teacher training programmes: the English Language Teaching (ELT) Bachelor's, Master's, PhD, and Postgraduate Certificate in Education (PGCE) programmes in GAU, Northern Cyprus.

Teacher trainees: this study defines teacher trainees as students who have chosen to complete a specific teacher training and education programme to become licensed teachers at a specific grade level (Hassan *et al.,* 2015).

Factors that affect learning: are factors that affect the comprehension of what has been taught and may affect the learning process of any student (including a teacher trainee) (Huang and Hew, 2017).

1.10. Outline of the Chapters

Chapter 1 introduces the foundations of this study. It introduces the focus of this study to present a study from Northern Cyprus in order to provide a non-Western perspective focusing on what learning factors affect teacher trainees' experience within flipped learning based on their own perceptions in higher education. It then introduces and defines the keywords used in this study. It also describes the value and contribution of this study. Finally, an overview of the remaining chapters follows.

Chapter 2 provides a review of the literature relevant to the history and pedagogy of teacher education programmes in the research context of this study in GAU, Northern Cyprus. This includes a discussion of the arguments surrounding flipped learning at GAU and the factors that influence learning. Overall, the literature review provides the knowledge based on which the arguments of this study are built on.

Chapter 3 presents the methodology regarding the research design of this study ('*[the] conceptual design within which the research is conducted'* [Akhtar, 2016]). It presents the research questions, justifies the framework of this study, and describes the participants, ethical considerations, limitations and data sources. It also elaborates on the data collection methods and instruments, including analytical tools.

Chapter 4 analyses the data collected to answer the main research question and discusses the core themes of this study. An important focus is given and discussed on the comparison of these findings with the arguments presented in the literature review, while solutions for these mentioned findings are presented through this study's insider researcher stance (Fleming, 2018).

Chapter 5 concludes this study with a discussion of the findings from Chapter 4 in the previous chapters. Then precedes to reflect on the found limitations and methodology usage within this study. It then ends with a re-visit of the value and contribution of these findings, with

Publication Partner:

International Journal of Scientific and Research Publications (ISSN: 2250-3153) recommendations for educators in the field of flipped learning based on these mentioned findings, including a final remarks section given through this study's insider researcher stance (Fleming, 2018).

CHAPTER 2: LITERATURE REVIEW

2.1. Overview

The first chapter provided context for this study by introducing the context of Northern Cyprus. This section includes the study's main rationale, which is about teacher trainees' perceptions of the factors that influence their experience of flipped learning at Girne American University (GAU).

This chapter will begin by examining the emergence of university-led teaching programmes in Northern Cyprus to provide a detailed background based on the main rationale for the study. This emergence will address GAU pedagogy and the pedagogy underlying GAU's current flipped learning teacher education programmes. Following this exploration of flipped learning pedagogy in GAU for teacher trainees, this study discusses factors that may affect teacher trainees' experience of flipped learning in GAU through this study's insider research mindset (Fleming, 2018).

Finally, the chapter concludes with a review of empirical research findings on flipped learning that have specifically investigated flipped learning in higher education from the perspective of students, by emphasising the gaps in their literature and discussing the importance of this study in filling the identified gaps, as discussed in the introductory chapter and current literature review.

2.2. The Emergence of University-led Teaching Programmes in Northern Cyprus

Northern Cyprus has followed the curriculum of the Republic of Türkiye since 1974 (Aktan, 2018). In order to explore how the university teaching programmes in Northern Cyprus came to be, this study must first discuss the history of education and teacher education in the Republic of Türkiye. This history of the Turkish curriculum begins with the Greek conquest of Western Anatolia in 1919, when Mustafa Kemal Atatürk (Gürtekin

and Baskan, 2013) set foot in Samsun to begin the Turkish War of Independence against the conquest and persecution of Muslims in Anatolia. He and other army officers dominated the political party that finally formed the Republic of Türkiye out of what remained of the Ottoman Empire (Aktan, 2018; Gürtekin and Baskan, 2013; Stanford and Shaw, 1977). The Republic of Türkiye was founded on the ideology found in the country's pre-Ottoman history and was also driven by a secular political structure that aimed to reduce the influence of religious groups. Atatürk, as President of the newly established Turkish Republic, launched an ambitious cultural, economic, and political reform programme with the aim of creating a modern and democratic nation (Aktan, 2018; Koruroğlu and Baskan, 2013).

The newly established Ministry of National Education (Maarif Vekalet) was launched on 3rd of May 1920 and was tasked with developing a new method of training teachers as part of the education and curriculum reform movement. This included a plan to enrich teacher training curricula with courses on subjects such as teaching methods and professional teaching (Cagaptay, 2004). This led to the acceptance of the 1924 (27th October) 'Law of Unification of Education.' With the adoption of the Law of Unification of Education a national 'secular' education system was created based on the Western European model—specifically, the French system (Unal, 2015).

Further to this, Atatürk instigated a reform that made primary education free and compulsory in 1928 and opened thousands of new schools nationwide (Akgul, 2019). He also introduced the Turkish Latin alphabet in order to replace the old Turkish Ottoman alphabet. Teacher education programmes were then reformed to educate teacher trainees based on primary school to university education in the new system (Karaman, 2014).

Atatürk himself expressed the importance of teachers in a manner still quoted to this day, in which: *'[the] future generation is the product of a teacher's devotion, as the value of a teacher's work will be in accordance with their skill and dedication'* (Seker and Ozdemir, 2012, p. 2896).

The next critical point in the Turkish education system regarding teacher trainees occurred in 1973 with the current 'National Education Basic Law.' This law established that all teachers should have a higher education degree (Toprakçi *et al*., 2013). In the

academic years 1973 to 1974, teacher training schools were established as high school teacher schools, and teacher trainees were educated for two years. Teacher trainees who graduated from these institutes were hired as 'classroom teachers' (Türkmen, 2007). In 1976, there were approximately fifty 'education institutes' founded in the Republic of Türkiye (UNESCO, 1981).

In 1981, all these above-mentioned education institutes joined the Higher Education Council and became part of the education faculties under the Higher Education Council during the meeting of 23rd May 1989. Within this meeting, responsibility for teacher education was officially transferred to the aforementioned council, and it was stipulated that teachers, regardless of the level they teach, must graduate from a faculty of education after completing a four-year undergraduate degree (Kizildag and Simsek, 2014; Gursimsek, Kaptan and Erkan, 1997). The responsibility for primary education teacher training was assigned to the 'primary education divisions' of the faculties of education, and the curriculum was expanded from two to four years. For teachers who had graduated from two- or three-year educational institutions (before 1989), supplementary programmes were established in cooperation with the various universities (Aksit, 2007; Akinoglu, 2008).

In the academic years of 1998 to 1999, the Turkish Higher Education Council started to re-establish the faculties of education according to the needs of the country (Akinoglu, 2008). Currently, within the Republic of Türkiye and Northern Cyprus, higher education for teachers consists of Bachelor's degrees, Master's degrees, Doctoral degrees , and Postgraduate Certificates in Education based on the subject and grade level a teacher trainee would like to teach (Yuksel, 2012). Considering that the history of teacher education in the Republic of Türkiye has been discussed, to present the background of teacher education in the Turkish curriculum, this study can now move on to the history of teacher education in the research context of this study concerning Northern Cyprus.

Following the de facto division of Cyprus in 1974, Northern Cyprus was required to follow the Turkish education system and to communicate in the Turkish language (Kizildag and Simsek, 2014). All higher education degrees obtained in Northern Cyprus are sent to the Ministry of Education of the Republic of Türkiye to be stamped by the

Higher Education Council of the Republic of Türkiye (YÖK) in order to be recognised worldwide (Chabre, 2020). Teacher education programmes offer the same degrees and follow the same curriculum as in the Republic of Türkiye. For example, every teacher education programme in Northern Cyprus is required to take a two-semester 'History of Turkish Education' course (Pashiardis and Tsiakiros, 2015).

It is important to note that certificates for teaching programmes (for example, a Postgraduate Certificate in Education [PGCE]) are classified as Master's degrees in Northern Cyprus (consisting of one year), and a Bachelor's degree is required to gain access to the programme. A teacher who has not completed a teaching degree is required by national law to hold a PGCE (Ufuk and Caganaga, 2019). From this point onwards, this study will focus on Northern Cyprus with minimal reference to the Republic of Türkiye, as the research context of this study, as mentioned in Chapter 1, is within the Girne American University of Northern Cyprus.

Based on the above-discussed history of the emergence of teacher education programmes in Northern Cyprus, the next section will focus on the pedagogy of Northern Cyprus in relation to Girne American University (GAU).

2.3. The Pedagogy of GAU, Northern Cyprus

The effects of the Western approach to teaching and learning practices and experiences with GAU in terms of flipped learning, have been summarised as beneficial integration of digital literacy, accessibility, time efficiency, and student-centredness (Birgili, Seggie, and Oğuz, 2021; Meyers, Erickson, and Small, 2013). Northern Cyprus's main disadvantage in this case focuses on the economic benefits of flipped learning by utilising income into the de facto state through higher education enrolment rates (Katircioğlu, Fethi, and Kilinç 2015). This section will expand on these two points to explain why the Western flipped learning approach does not work in the GAU context.

GAU in Northern Cyprus offers a Bachelor's degree in English Language Teaching (as well as related programmes at Master's and Doctoral levels). Following the transfer of responsibility for teacher education by the Turkish Higher Education Council in 1982 an

agreement was reached that teacher education programmes could be run at GAU starting in 1997 (Kitana, 2014).

Girne American University was founded in 1985 by Mr Serhat Akpinar as a higher education institution modelled after American higher education (Al-Momani, Pilli and Fanaeian, 2014). This foundation of higher education based on the 'American style' is directly related to the emulation of Western approaches discussed in the introduction to this study. By naming GAU, an 'American' university, this university has explicitly advertised that it is a pure imitation of Western culture of sorts that provides the beneficial integration of flipped learning away from the non-Western culture of Northern Cyprus, thereby masking the disadvantage of utilising income through higher education enrolment rates (Katircioğlu, Fethi, and Kilinç 2015).GAU has advertised that:

[Girne] American University provides an American Education Model to the students with a mission of innovative, success-oriented and technologically compatible academic programs to be one of the most important universities in the world. GAU is an international university that conveys important messages to the world about its international campuses, academic programs, public-oriented projects and also higher education system (B and S Education, 2021, p.1)

Within this advertisement, it is acknowledged that the focus on '*[technologically] compatible academic programs'* (B and S Education, 2021, p.1) further shows the focus on technology as a policy and not on the value of pedagogy discussed throughout this study as a form of economic gain, which in turn has detracted the focus from learner experience as a pedagogical limitation. Through this detraction of focus on learner experience, although GAU claims to follow the American educational model, they are missing one key factor as a pedagogical limitation: the essence of a focus on education and student-centredness as advocated through the benefits of flipped learning and how flipped learning emerged in their Western counterparts, especially the United States of America where flipped learning originated (Bergmann and Sams, 2012). The following

paragraph further emphasises the pedagogical limitations surrounding GAU and flipped learning through this detraction of the focus from learner experience over economic gain.

By only explicitly following the American education model, GAU has led the Western dominance to overtake the culture of Northern Cyprus education. With a vision of being an 'American' school, GAU has supported the economic and political gains of Northern Cyprus and its political leaders (Katircioğlu, Fethi, and Kilinç, 2015), on the basis that this has elicited many pedagogical limitations to be brought into light through flipped learning in GAU. For example, access to technology is critical. Flipped learning is fixated on technology. Technology enables more flexible learning. The pedagogical limitation of flipped learning at GAU is that access to technology is limited owing to a variety of factors. Teacher trainees from low-income families may not be able to afford a device such as a personal computer or a smartphone, as well as the cost of internet connectivity. Geography is another constraint. Several areas in Northern Cyprus lack a consistent connection to the internet or electricity, making it impossible for them to complete the online portion or solely online synchronous and asynchronous sessions of flipped learning that they are required to do.

This is also argued by Wang and Meltzoff (2020), who note that many non-Western cultures imitate Western modelled actions with no educational cue or value. Zaho (2017) also states that this imitation of Western culture exerts a 'fatal attraction' as institutes in non-Western cultures (for example, GAU) focus on the past by imitating Western cultures, whereas education should focus on the future. This 'fatal attraction' through GAU's focus on technology and the American model system, based on Güzer and Caner's (2016) *TPACK* recommendation, is also evident in the pedagogy behind the current flipped learning teacher education programmes within GAU: for example, seen through their teacher education-based textbooks and formalised curricula, which are discussed in the next sub-section.

2.3.1. The Pedagogy Behind Current Flipped Learning Teacher Education Programmes in GAU

Chapter 1 of this study explored the rationale and policies for the integration of flipped learning into teacher education programmes in Northern Cyprus. The next paragraphs will explore the pedagogy behind current flipped learning teacher education programmes in GAU to provide a foundation for Chapter 3. The participants in this study, as mentioned in the introductory chapter, are a pool of English Language Teaching Bachelor's, Master's, PhD, and PGCE students at GAU, Northern Cyprus.

However, these teacher education programmes were insufficient because they did not include language teacher education. In 2006 to 2007, a second agreement on faculties of education was made to address this insufficiency of the 1997 agreement discussed in this current chapter. Provisions were made for the English Language Teaching Bachelor's programme (a four-year programme), which was established educationally to aid relationships among societies as there is an increasing need to learn the English language as a second or foreign language, including the notion that knowledge of the English language is a criterion of modernisation (Akçıl and Arap, 2009). Because the English language is the current lingua franca (bridge language, [House, 2013]) of international trade, education, research, technology, diplomacy, culture, radio, seafaring, and aviation, it has gradually replaced French as the lingua franca of international diplomacy after World War II (Sung, 2014; House, 2013; Bennett, 2013). English teachers are therefore needed to teach English to primary and secondary school students in Northern Cyprus. However, these English teachers need to be taught how to teach English, the methodology of teaching English, history and much more. Thus, teacher trainees at the undergraduate level are taught by English teachers who have studied the pedagogy of ELT at the master's and Doctoral levels and conducted field research on the pedagogy of ELT (Demirok and Baglama, 2015).

Second, the PGCE programme in Northern Cyprus is a one-year master's programme that requires a bachelor's degree in any subject (GAU, 2020). The pedagogy behind this

course is to teach teacher trainees with substantial school placements with the philosophy of teaching and learning with widespread school placements (internships) (Erden, 2016). Other countries (for example, the United Kingdom) divide the PGCE into three levels (primary, secondary and further adult education, including subject matter) (Çakmak, Faslı and Baskan, 2013). Northern Cyprus tailors its PGCE programme to meet the needs of all three levels. The main aim of the PGCE is to permit teacher trainees to meet the standards and qualifications of the teaching profession, and become teachers.

The pedagogy underpinning this PGCE course is also designed to inspire trainees to evaluate the current educational system and practice it in a critical yet, constructive, manner. The aim is for trainees to become professional members of the teaching profession, capable of contributing to the debate on education and innovation (for example, digital citizenship [Webb *et al*., 2021]) in their future teaching careers (Zembylas and Karahasan, 2017; Erden, 2016). With this one-year course, Northern Cyprus can meet the need to educate teacher trainees who have not studied a course in teacher education.

Erden and Erden (2019) argue that using the PGCE course in the manner mentioned above in Northern Cyprus is not efficient. Many PGCE teacher trainees have chosen the teaching profession because of financial concerns in which they are not open to considering the developmental characteristics of their future students (for example, their needs based on student-centred learning [(Lage, Platt and Treglia, 2000]), they are burnt out, and they are not open to self-professional development, owning to the government's ideal goals of achieving economic gain discussed in this study. The influence of economic gain diminishes the value of education in Northern Cyprus.

Based on the theme of economic and political gain, each of these ELT and PGCE courses incorporates flipped learning in line with university education policy (Erden and Erden 2019). The next section discusses the relationship between teacher trainees and flipped learning in line with the main rationale of this study. Based on teacher trainees' perceptions of the factors influencing their experience of flipped learning at Girne American University, these mentioned factors, developed by this study based on an

insider researcher's stance, through the pedagogy of the Northern Cyprus curriculum presented in the previous introductory and this current chapter.

2.4. Factors that Affect Teacher Trainees' Experience of Flipped Learning in GAU

Flipped learning, teacher trainees, and their role in this type of learning all have a connection (Sert, 2015). This study focuses on the experiences of teacher trainees in order to capture the essence of teacher trainees' roles and experiences as both students and teachers within flipped learning. According to the study's researcher, each teacher trainee brings different innate abilities to a flipped learning environment, including their prior learning experience and future teaching experience. The following sections investigate and define the three characteristics (learning preferences, motivation (including self-efficacy), and learning personalities) that teacher trainees bring into their relationship with flipped learning within the teacher training programmes examined in this study as factors that affect their experience in flipped learning, as identified by this study. The reasoning behind these factors will be discussed in the following paragraphs and sub-sections. According to Dolan and Taylor-Piliae (2019), a theoretical framework is a framework that enables or supports the understanding of ideas and concepts relevant to the proposed study and provides a broader perspective on the area of knowledge under consideration. This is explored further in the upcoming Section 2.4.1 and Chapter 3 of this study.

As previously discussed, there are implications for flipped learning and its use in Northern Cyprus, including the Department of Education's goal of fostering digital literacy by focusing solely on technology, with teacher trainees serving as critical agents in meeting this goal. However, Northern Cyprus and its governing authorities have failed to recognise that, in addition to these implications, teacher trainees bring something unique to the flipped learning table (Counsell *et al.,* 2000). Teacher trainees, as previously stated, are students who will later teach other students in flipped learning. As a result, their relationship within flipped learning is critical because if they lack the necessary pedagogical skills for using flipped learning (for example, eliciting active student-centred

learning [Webb *et al*., 2021]), the students they teach in the future will lack these skills and understanding of the content course information they are presented with in their courses taught by these mentioned teacher trainees. As a result, it is critical to investigate the relationship between teacher education programmes and flipped learning in higher education. Teacher selection research, particularly in relation to flipped learning in this study, can help increase the number of teachers entering the profession. This study can help break the cycle of implications outlined in this study by investigating this relationship. To break the cycle even further, this study investigates what factors influence teacher trainees' experiences with flipped learning from the perspective of the teacher trainees themselves. Because each teacher trainee is unique, this study contends that there should be no 'one size fits all' ideology when developing goals and strategies for flipped learning implementation.

This study has developed these factors on this topic through an insider research stance in order to explore the factors that influence teacher trainees' experiences of flipped learning (Fleming, 2018). According to Druzenko and Voloder (2014) and Wegener (2012), factors that affect learning developed by insider research have a substantial body of literature to guide interests, sensitising concepts, and disciplinary views that frequently provide researchers with these types of starting points (factors) to develop their ideas rather than limiting them. As a result, researchers develop specific concepts by reviewing data and subjecting their ideas to various levels of scrutiny, which is usually backed up by experience, evidence, or a compilation of literature (Fleming, 2018). Following the reasoning of Fleming (2018), Druzenko and Voloder (2014), and Wegener (2012), this study, as an insider researcher study in the world of teacher trainees in flipped learning in GAU, sensitises concepts to which this study has termed' factors' based on the stated researcher's past experience within GAU and the definition of factors that affect learning noted by Huang and Hew (2017) that this study adopts as factors that impact the understanding of what is being learned and influence the learning process of each student through flipped learning.

Before discussing the factors influencing teacher trainees' experiences of flipped learning in this study, it is important to note that this study does not test the 'theory' of the factors; rather, they are used to design the instruments of this study (questionnaire and

interview), which will be discussed in Chapter 3 on methodology. The identified factors influencing teacher trainees' learning in flipped learning may not even be revealed by the data (findings) presented in Chapter 4 of this study. As a result, this study interprets the participants' (teacher trainees') views in terms of the factors that influence and shape their perceptions of flipped learning. The identification of these factors and how they have been brought to light in this study is discussed below, first by discussing their identification in non-Western cultures and then by discussing their integration in GAU's educational framework.

Furthermore, these factors were chosen based on studies conducted in non-Western cultures using flipped learning (for example, Lo and Hew, 2017; Evseeva and Solozhenko, 2015), which focused on stimulating students' motivation and self-efficacy as an important factor in increasing the success of flipped learning in their courses. By emphasising the 'community' that surrounds the teacher-student relationship when establishing an effective flipped learning environment, the two factors of the students' autonomous learning personality and how they learn can be enhanced. To relate the benefits of flipped learning that have been demonstrated in previous Western examples (Birgili, Seggie, and Oğuz, 2021; Meyers, Erickson, and Small, 2013), GAU follows as the beneficial integration of digital literacy, accessibility, time efficiency, and student-centredness. As a result, the factors of Garrison's (2017) *Community of Inquiry* (COI) as a theoretical framework, learning preferences (Nahla, 2014), motivation (including self-efficacy) (Zhao, 2012; Bandura, 1997), and learning personalities (Jung, Baynes, and Beebe, 2016; Jung, 1954) present an understanding of flipped learning pedagogy that considers the experiences of teacher trainees (Kizilet and Sinan, 2017).

In addition, these four factors are integrated into its teacher education programmes (BA, MA, and PhD ELT, as well as PGCE, GAU, 2020) through the literature provided to teacher trainees during their assigned modules (Al-Momani, Pilli and Fanaeian, 2014). Courses such as 'Educational Technology and Materials Design,' for example, focus on the digital literacy of flipped learning alongside material design factors such as learning preferences and learning personalities (GAU, 2020). Also included are 'Specific Teaching Methods,' such as 'Community Services,' which focus on motivation (including self-efficacy), and the *Community of Inquiry* (GAU, 2020). As a result, these factors and

flipped learning are interlinked through the core theme of teacher trainees themselves and the education they received within a flipped learning environment.

It is important to note that specifically the COI has been integrated into this study as there is a convergence between flipped learning and the integration of the mentioned factors in GAU's educational framework. The rationale for this decision regarding the *Community of Inquiry* and why it was chosen for this study is discussed formally by first thoroughly exploring this framework and then discussing its strengths and weaknesses by providing an argument on how this study compensates for the weaknesses discussed in the following sub-section.

2.4.1. Factor 1: Garrison (2017)'s *Community of Inquiry*: Theoretical Framework

In Northern Cyprus education proposed by the Department of Education, it is expected that teacher trainees will acquire digital literacy through the demand for flipped learning in GAU (Yinac, 2017). This study acknowledged that flipped learning evolved as part of the era of 'social and online learning,' which emerged through the theory of 'constructivism,' which is based on student-centred interactive knowledge construction (Meyers, Erickson and Small, 2013).

Within Northern Cyprus, the framework underpinning the programmes that educate teacher trainees in GAU does not fit in with those of the constructivist approaches that underpin the benefits of flipped learning, as evidenced by the value of digital literacy (for economic gain) versus educational value in educational policy (Erden and Erden, 2019). This is because flipped learning in teacher education is considered from a policy standpoint, whereas less is known about flipped learning pedagogies informed by teacher trainees' voices (Tekel and Öztekin, 2021). Garrison (2017) developed the *Community of Inquiry* (Figure 4) theoretical framework to address the concept of student-centredness in flipped learning within constructivism ideals (Li, 2018). This framework intends to provide an educational lens into the world of flipped learning from the perspective of learners rather than from a technological standpoint. This is directly in line with the

study's title and main rationale, which is to investigate teacher trainees' perceptions of the factors that influence their flipped learning experience at GAU.

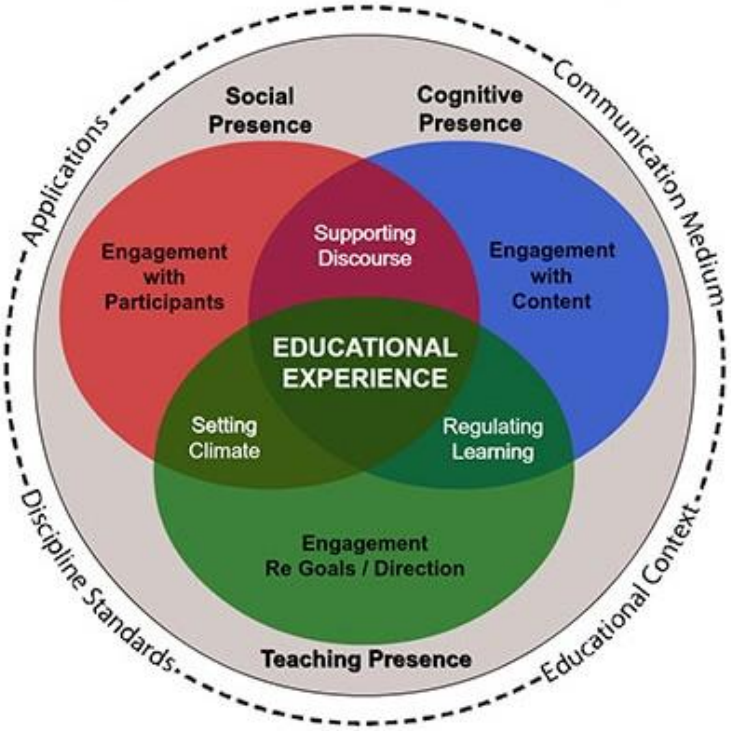

Figure 4. The Community of Inquiry: Theoretical Framework

(Garrison, 2017, Fig. 3.1, p. 25)

The *Community of Inquiry* was established for many educational developers, including Cleveland-Innes *et al*. (2019), to implement computer-mediated learning. However, according to Garrison (2017), the *Community of Inquiry* is based on the researcher in the 'social sciences' (for example, education). Garrison (2017) developed this framework to provide an educational lens, specifically based on the development of personal meaning in knowledge and understanding, which aligns well with the focus of this study's main rationale on the factors that may affect teacher trainees' experiences of flipped learning, including the factors proposed by this study. The *Community of Inquiry* proposes to *'[foster] the development of autonomous and independent thought in learners while*

developing this independence of thought within the context of a social setting' (Garrison, 2017, p.20) namely, flipped learning in this study's case.

This study will identify which factors affect teacher trainees in flipped learning by using this theoretical framework as a guide to establish both the theoretical framework of this study, as noted, and the factors that affect teacher trainees within flipped learning. According to Özüdogru (2021), there is a scarcity of studies on the *Community of Inquiry's* relationship with flipped learning. Özüdogru (2021) conducted research in higher education in the Republic of Türkiye on understanding teacher trainees' experiences with flipped learning in relation to the *Community of Inquiry* framework. An effective flipped learning design was found to encourage the achievement of independently meaningful and educationally significant learning outcomes in this study, with the teacher's perceived instructional presence being the highest and the learner community's perceived social presence being the lowest. Through synchronised activities such as peer presentations, questions, and video discussion, as well as instructor lecture videos, this design fosters cognitive presence. While none of the variables in the study were associated with academic achievement, computer-based games such as Kahoot help build a positive online inverted learning community. Many advantages of the *Community of Inquiry's* relationship with flipped learning have been identified within Özüdogru (2021)'s study, such as the provision of active, flexible, autonomous, and interactive instruction through technology, the creation of a fun learning environment, and increased perceived learning and interaction with the instructor.

This, in turn, connects Garrison's (2017) *Community of Inquiry* to flipped learning as a type of student-centredness in constructivism theory (a benefit of flipped learning [Kim *et al*., 2016]). Because this study gives teacher trainees responsibility for expressing their perceptions of what factors influence them in a flipped learning experience, this study will highlight the three presences (social, teaching, and cognitive) below within this theoretical framework in relation to GAU and flipped learning regarding teacher trainees within the institution.

Social presence is defined as students' (teacher trainees') proclivity to participate in an encounter within a specific community setting (for example, in a higher education

course). It entails effectively connecting in a trusting environment and establishing interpersonal relationships while retaining their unique characteristics (Garrison, Anderson and Archer, 2019). In this study, teacher trainees' perceptions of factors may be presented based on the type of communication they experience with their peers and lecturers during a flipped learning course.

Second, teaching presence entails the planning, facilitation, and achievement of independently meaningful and educationally significant learning outcomes based on cognitive (described below) and social processes (Anderson *et al*., 2019). In this study, teacher trainees may propose factors that may affect their perceptions based on the implementation (design) of their flipped learning course.

Finally, cognitive presence is determined by students' ability to generate and confirm understanding through continuous thought and debate (Garrison, Anderson and Archer, 2019). Using this cognitive presence as a guide, teacher candidates can observe which factors influence how they learn or understand the material (presented in their flipped learning context). The *Community of Inquiry* framework was used in the design and content of this study's theoretical framework. This is because it provides several benefits, which are detailed in the following paragraphs.

First, the *Community of Inquiry* framework indirectly emphasises the core themes underpinning the main rationale of this study by taking into account teacher trainees' perceptions of factors influencing their flipped learning experience, by taking into account the pedagogy of digital literacy integration for both teachers and teacher trainees. It also focuses on teaching, cognitive, and social presence, as previously discussed, which is consistent with the study's main rationale regarding teacher trainees in GAU's flipped learning environment. Furthermore, the *Community of Inquiry* believes that virtual media and a physical face-to-face setting, or a virtual face-to-face setting with real-time interaction in flipped learning, are two distinct types of instruction. In accordance with the accepted definition of flipped learning in this study, which is formally discussed in Chapter 1.

Second, according to Garrison, Anderson and Archer (2019), the benefits of the *Community of Inquiry* include collaboration. Participants (students) in their study found

that the *Community of Inquiry* brought them together to *'[appreciate] the value of learning together and help them improve connections and collaboration for a meaningful learning experience'* (Garrison, Anderson and Archer, 2019, p.2). Another participant said that *'[the] Community of Inquiry offers a three-dimensional view of interactive teaching and learning environments'* (Garrison, Anderson and Archer, 2019, p.2). The participants further commented that *'[the] Community of Inquiry will make an effective form of learning possible'* (Garrison and Akyol, 2012, p.2).

Other advantages of using the *Community of Inquiry* included increased engagement and improved learning. Through the combination of the *Community of Inquiry* and technology-enhanced learning, participants' experiences were enhanced not only on a student-to-student basis but also on a student-to-teacher and student-to-content understanding basis (Garrison, Anderson and Archer, 2019).

As a result, the *Community of Inquiry* framework enables students who are hesitant to ask pertinent questions in a face-to-face classroom to do so (Garrison, Anderson and Archer, 2019). In their article titled *'Technology-Enabled Learning and the Benefits and Challenges of Using the Community of Inquiry Theoretical Framework*,' Cleveland-Innes *et al*. (2019) argued that the most common challenge when using the *Community of Inquiry* are: first, problems with limited internet connections (technical infrastructure) and a scarcity of accessible electronic devices such as smartphones and laptops. The second major challenge is based on the design and facilitation of educational courses related to the *Community of Inquiry*, as well as educational values and the effective application of active technology-based learning (Kim *et al.,* 2016).

Finally, Cleveland-Innes *et al*. (2019) suggested that students may lack enthusiasm or willingness (motivation) to engage in and remain in a course or programme tailored to the *Community of Inquiry*. They also mention that some students use flipped learning to study independently. The *Community of Inquiry*, on the other hand, is built on collaborative learning. As a result, if students do not interact with one another or trust their teachers enough to initiate discussions when problems arise, the *Community of Inquiry* will fall short of its full potential (Garrison, 2017).This is critical to remember in

a flipped learning setting because collaboration is one of the key benefits of flipped learning in the form of interactive learning (Birgili, Seggie, and Oğuz, 2021).

This study emphasises the significance of investigating teacher trainees' perceptions of the factors that influence their flipped learning experience at GAU. This *Community of Inquiry* framework was chosen because of its goals in relation to the study's main rationale. As a result, it addresses the limitations identified by Cleveland-Innes *et al*. (2019) as follows: although Garrison, Anderson, and Archer (2019) considered only Western culture for the first technical infrastructure challenge within the *Community of Inquiry*, this study considers a non-Western culture (Northern Cyprus) and assumes that technical infrastructure may affect each student's motivation differently in different cultural contexts, learning, and motivation (to be defined and discussed in this study).

It is important to remember that the participants in this study are teacher trainees when it comes to the second challenge of designing and facilitating educational courses related to the *Community of Inquiry* alongside educational values. As a result, this research will investigate the *TPACK* framework and how the Department of Education in Northern Cyprus prepares teacher trainees for flipped learning. As a result, by studying teacher trainees who are experiencing flipped learning and may become teachers themselves after graduation, this study metaphorically kills two birds with one stone. As a result, the *Community of Inquiry* is overcoming the challenge of educational course design and facilitation through educational value.

For Cleveland-Innes *et al*. (2019)'s final stated challenge of motivation, this study investigates the factors that may affect teacher trainees in flipped learning in terms of motivation, which will be discussed and defined in this study. Furthermore, this study will examine the effect of social, cognitive, and teaching presence on teacher trainees in flipped learning as one of the factors that may affect teacher trainees in this type of learning.

The justification for using the *Community of Inquiry* framework as a theoretical framework and as a factor that may affect teacher trainees' experience in flipped learning has been discussed up to this point; the following section discusses learning preferences as a factor that affects teacher trainees' experience in flipped learning.

2.4.2. Factor 2: Learning Preferences (Nahla, 2014)

It is critical to define learning preferences and how they influence the relationship between teacher trainees and flipped learning at GAU, Northern Cyprus. To do so, this study must first acknowledge that the term ‘learning styles’ is not supported by empirical evidence in the field of educational psychology. According to Willingham, Hughes, and Dobolyi (2015) and Pashler *et al.* (2008), a ‘learning style’ is an analysis of a student's specific method of learning based on, for example, Fleming's (1987) visual, auditory, reading, and writing preferences, and kinaesthetic (VARK) model and assigned to students after an observation is conducted by their teachers regarding the matter (Dantas and Cunha, 2020; Gujjar and Tabassum, 2011). As a result, the sections that follow will: first, highlight the implications of this learning styles argument for learning preferences by exploring the arguments surrounding learning styles in relation to learning preferences, which will serve as a foundation for the definition of learning preferences (not learning styles) used in this study.

According to 'neuroscience' researchers (for example, Cherrier et al., 2020; Schwartz et al., 2019), the key to learning is the process by which people receive and process coded sensory data through memories in their neural structures within their brains, leading to learning attributes such as learning and using the alphabet.. As a result, researchers continue to investigate learning theories (for example, Feiler and Stabio, 2018; Alghafri and Ismail, 2011) in order to increase the productivity and efficiency of higher education and other educational stages.

Furthermore, Walters (2018) contends that all learning theories are predetermined to some degree and aim to reduce the time required to transfer information to memory and improve data retrieval efficiency. He also claims that rejecting any form of learning theory is equivalent to rejecting the argument advanced by the field of 'neuroscience,' as previously stated. According to Walters (2018), the ability to explain and understand the basic mechanisms by which cognitive minds work, maintains that learning theories are

still required to optimise individuals' efficiency and capacity (as demonstrated in studies by Han, Soylu and Anchan, 2019; Feiler and Stabio, 2018).

Many educators (for example, Nurumal *et al.,* 2019; Mestre, 2012) advocate the use of learning styles, while educational psychologists (for example, Murphy, 2020; Kirschner, 2017) argue that there is no empirical evidence to validate them, particularly the 'auditory' (learns best by listening) and 'kinaesthetic' (learning takes place by students performing physical activities) leans. One example argument, by Newton (2015), is quoted here:

[The] overwhelming majority (89%) of recent research papers, listed in the ERIC and PubMed research databases, implicitly or directly endorse the use of Learning Styles in Higher Education. These papers are dominated by Fleming's VARK model and Kolb Learning Styles inventories. The presence of these papers in the pedagogical literature demonstrates that an educator attempting to take an evidence-based approach to education would be presented with a strong yet misleading message that the use of Learning Styles is endorsed by the current research literature. This has potentially negative consequences for students and the field of education research (Newton, 2015, p. 1098).

However, as Deale (2019) argues, learning styles and learning preferences (as defined below) should not be confused with pedagogical literature and evidence-based educational approaches. This is why, as described in Table 2.1, this study emphasises the use of Nahla's (2014) definition of learning preferences and sensory modes: learning preferences are a learner's handpicked methods of comprehending and identifying different types of skills that rely on the use of a specific sensory mode or combination of modes.

Table 2.1. Learning Preferences: Sensory Modes

(Nahla, 2014)

Visual Learners: learn with pictures, graphs, or any form of visual representations.
Aural Learners: learn by listening, for example, from spoken stimuli and melodies.
Kinaesthetic Learners: learn by whole-body movements. An example of this mode of learning would be a task that involves playing a game of hide and seek that includes words and sentences.
Haptic Learners: are part of the kinaesthetic dominion over one significant difference: They learn by engaging in fine-motor or hands-on tasks, such as putting things together.
Print Learners: tend to learn most effectively through written words. For example, from reading printed materials or using a whiteboard for writing.
Interactive Learners: learn through verbalisation, such as by asking and answering questions, having discussions, and talking out loud to themselves while studying alone.
Olfactory Learners: use two of the primary senses of taste and smell to learn. Thus, they tend to correlate certain smells or tastes to specific memories.

With regards to Nahla's (2014), definition of learning preferences (sensory modes), the main distinction between these learning preferences and learning styles is that learning styles are an analysis of a student based on an individual learning method (Dantas and Cunha, 2020; Gujjar and Tabassum, 2011). Felder (2020) adds to this argument by claiming that the distinction between learning styles and learning preferences is a change in attitude. Many educators make the mistake of assuming that certain learning styles are unavoidable and that students can only learn in this way. Students' learning preferences demonstrate that they prefer to learn one way but will learn another. It simply introduces the element of flexibility and practicality. Some students will never learn if the former is

insisted upon. The goal of learning preferences is to teach in a way that balances the preferences of students with different learning preferences rather than matching instruction to individual students' learning styles, as in Fleming's (1987) VARK model. According to Felder (2010), the distinction between learning styles and students' learning preferences is based on specific ways of taking in and processing information, as well as responding to different instructional environments. They are not infallible guides to student behaviour, nor are they unfounded constructs, but rather useful descriptions of common behavioural patterns. Although the validity of the most common learning preferences is frequently questioned in the psychology literature, they have been used frequently and successfully to help teachers design effective instruction, students better understand their own learning processes, and both teachers and students recognise that they are unique and that differences are often worth celebrating.

Another point to consider when distinguishing between learning preferences and learning styles is that teachers use simple diagnostic tests to assess their students' learning styles. Although these are frequently unreliable, many students end up not matching the 'style' observed by their teacher (Mkonto, 2016; Bhagat, Vyas, and Singh, 2015). Understanding the key distinction between learning styles and learning preferences is important in flipped learning research because it can make it easier to construct, modify, and create curricula and educational programmes that are more effective for students (Cuevas, 2015). This crucial distinction must also be addressed because it plays a significant role in the debate over learning styles (as previously stated, educators versus psychologists) as well as negative attitudes toward the concept of learning preferences.

Gardner (2013), a long-time fellow at Harvard University's Graduate School of Education who popularised the concept of multiple intelligences in the 1980s, holds a slightly different perspective. He noted that learning style theory was 'incoherent' in a 2013 opinion piece in The Washington Post. He proposed a scenario in which different parts of a person's brain compute different types of information that correlate to a learner's theory of handpicked learning interests, such as orthography, spatial, interpersonal, and harmonic interests. Gardner (2013) went on to say that the majority of people have between seven and ten ‘distinct types of intelligence’, which contribute to a variety of learning preferences. Furthermore, Gardner (2013) proposed that teachers tailor their

teaching as much as possible, teaching essential resources in a variety of ways (for example, through story-telling, graphic arts, illustrations, and role-playing), and removing the term 'styles' from their terminology by focusing on learners' chosen learning preferences, particularly in higher education. Other researchers have discovered that involving students in their learning interests encourages students (including teacher trainees) to develop a more in-depth understanding of how they learn through abstract thinking and awareness (Kaplan *et al.* 2013).

This is especially important for teacher candidates who are confronted with a gap in the literature on learning styles in Western and non-Western teacher education programmes. The theory of learning styles in teaching literature taught within GAU teacher education programmes in Northern Cyprus (GAU, 2020) is informed by earlier Western examples, such as Hsieh *et al*. (2011) and Cook and Smith (2006), as well as studies conducted in Northern Cyprus.

For example, in a case study (Erden, 2016) on the qualification pathway in teacher training in Northern Cyprus, the professional development of teacher trainees was found to be directly related to students' learning styles. Teachers understand how their students learn, which influences how they prepare, present, and evaluate their lessons, as well as the outcomes they achieve. Another recent study (Altun and Serin, 2019) conducted by the Department of Science Teacher Education in Northern Cyprus found that once learning styles are identified, teaching strategies, methods, and tactics, as well as the selection and use of appropriate teaching aids, can be used to tailor instruction to the needs of students.

Examples of GAU learning preferences can be found in a study conducted by Keshavarz and Hulus (2019), in which they investigated the effect of these learning preferences on students, namely teacher trainees, within online forms of learning that include traditional face-to-face classroom teaching sessions. It was determined that learning preferences play an important role in motivating students to use online forms of learning.

This study determined the definition of learning preferences, the key distinction between learning preferences and learning styles, and the debates surrounding them, including their application in GAU. The importance of learning preferences in this study can be

seen in a study by Rahman *et al*. (2015), who argue that students can learn more effectively in a flipped learning environment tailored to their learning preferences. Whether a flipped learning environment is entirely online or a combination of online and face-to-face learning, classroom activities that address the seven types of learning preferences identified in Table 2.1 demand that teachers diversify their teaching methods, allowing students to thrive in an active learning environment (Rahman *et al.*, 2015). Learning preferences are also intertwined with the *Community of Inquiry, as* tailoring flipped learning in this manner is intertwined with the COI's teaching presence, social and cognitive presence.

According to Malvik (2020) and Skooler (2018), creating functional groups based on learning preferences within flipped learning settings enables a collaborative, interactive learning environment in which students share ideas and then collaborate to develop them, which is based on the COI's social presence. This teaches students the value of sharing and giving, as well as the importance of working together to solve problems. Students learn to adapt to this type of group work for their future, whether they are teacher trainees or other higher education students, by either working with the same learning preference or multiple matching diverse learning preferences, owing to various factors identified in their perceptions based on the discussion that has taken place thus far, learning preferences within GAU in this study may or may not reflect that teacher trainees prefer to learn in a specific way within flipped learning. This will be further explored in Chapter 4 during the findings of this study to acknowledge if teacher trainees preferred this specific factor.

2.4.3. Factor 3: Motivation Including Self-efficacy (Zhao, 2012; Bandura, 1997)

Motivation is an important factor in guiding a person's behaviour; it can also be defined as the reason why someone decides to take action, how determined they are to accomplish this action, and how long they are enthusiastic enough to pursue this action (Zhao, 2012).

According to Zhao (2012), motivation is further divided into two concepts. The first is intrinsic motivation: pursuing an action simply because one has internal reasons to do so.

For example, someone who wants to learn a new language simply because they think it will be fun is motivated by intrinsic motivation. The second concept is extrinsic motivation, which is defined as doing something in order to obtain a reward based on a specific outcome. Extrinsic motivation is used as an example when a person enters a sporting event in order to win a trophy.

Because motivation has always been a part of educational research, the literature on motivation is extensive (for example, a study by Buckmaster and Carroll, 2008). Many case studies of non-Western cultures have examined extrinsic (controlled) and intrinsic (autonomous) motivation in higher education (for example, Yu and Geng, 2020; Ayub, 2014), either as a general concept of motivation on its own, a mixture of both types of motivation, or only considering one or the other. However, the majority of researchers (for example, Bayat and Salehiniya, 2019; Rafii, Saeedi, and Parvizy, 2019) associate motivation with academic success in non-Western cultures.

In terms of taught literature, motivation in Northern Cyprus is also linked to academic success (Guay *et al*., 2010; Clark *et al*., 2014), including studies conducted in Northern Cyprus. Safaklı and Ihemeje (2015), for example, investigated the effects of intrinsic and extrinsic motivation on learning among international students at the European University of Lefke in Northern Cyprus. Twenty students from thirteen different classes were given scales that measured the balance of intrinsic and extrinsic goal orientation. This study found that students who were given grade-based motivation (extrinsic motivation) performed better than those who were given intrinsic motivation. This study by Safaklı and Ihemeje (2015) has been used as an example because this study derives motivation from both extrinsic and intrinsic motivation, based on the notion that it is common practice in Northern Cyprus to link motivation to academic success, as demonstrated in this given example.

The factor of motivation and its relationship with flipped learning and the COI theoretical framework are based on the notion that teacher trainees must participate in both asynchronous and synchronous sessions of peer-to-peer group discussions. To achieve this level of active discussion, teacher trainees must be motivated to learn through these activities or discussions, whether through extrinsic or intrinsic motivation. As a

result, the COI's social presence (group discussions), teaching presence (tailoring teaching methods), and cognitive presence (connecting ideas to learn) are used to tailor to these two types of motivations that teacher trainees adhere to in flipped learning (Özüdoğru, 2021).

It's also worth noting the role of 'expectations' in motivation, as they are one of the most enduring psychological constructs (Zuroff and Rotter, 1985). When associated with this study's target group of teacher trainees, expectations take the form of 'self-efficacy' expectations. According to Bandura (1997), the term ‘self-efficacy’ refers to an individual's ability to assess their own ability to perform actions in pursuit of their goals. Bandura also claims that in the context of teaching, self-efficacy is largely dependent on the ability to teach subjects and is partly determined by an individual teacher's belief in the efficacy of maintaining classroom discipline that fosters a supportive learning environment.

According to Bandura's (1997) definition of self-efficacy, teacher trainees enter teacher training programmes with their own expectations of self-efficacy (Kass and Miller, 2015), which are aligned with their intrinsic and extrinsic motivation as factors that can affect teacher trainees in flipped learning. Many teacher trainees enter teacher training programmes expecting to be personally equipped with the skills necessary to become the 'effective' teacher they aspire to be, as well as shaped into their personal image of an effective teacher (intrinsic motivation). Others come with the expectation of meeting achievement and mastery goals set by their programmes, such as assessing the needs of their future students (Watson and Marschall, 2019; Bray-Clark and Bates, 2003). This is also related to the COI's cognitive presence, as teacher trainees analyse their expectancies, as well as the teaching presence of their needs being met through the flipped learning teaching environment and the social presence of the COI in their student-student and teacher-student relationships of their expectancies being tended to in this environment, as noted by Özüdoğru (2021).

Furthermore, teacher trainees enter teacher education programmes with the expectation that they will learn from a teacher with digital literacy and skill in using and teaching the digital skills required for flipped learning, which will prepare them for their future careers

as teachers (Ranieri and Bruni, 2018; Olsson and Edman-Stalbrant, 2008). However, in many cases, these teacher trainees discover that this is not the case because the teachers who are supposed to train them to be 'effective' teachers in their minds do not have the necessary digital skills. This results in demotivation and a shift in self-efficacy expectations among teacher trainees (Ranieri and Bruni, 2016; Share, Mamikonyan and Lopez, 2019). This phenomenon emphasises the significance of the study's main rationale in terms of teacher trainees' perceptions of factors influencing their flipped learning experience as well as 'fair' education in relation to digital literacy within teacher education (Tekel and Öztekin, 2021). Thus, motivation related to self-efficacy is a factor that may affect teacher trainees' experience (in their perception) of flipped learning, as they must learn within this type of learning as regulated by GAU (GAU, 2020) in order to become qualified teachers. Based on the foregoing, any researcher could write endless pages of examples on the effects of expectations (including self-efficacy) and extrinsic and intrinsic motivation on students in higher education, particularly teacher trainees. However, because there is little to no literature on the relationship between teacher trainees and flipped learning, the following sections will concentrate on motivation in the context of flipped learning in higher education.

To begin, it is important to note that there is a substantial body of literature on the subject of motivation in higher education as well as on the specific topic of flipped learning. Most studies (for example, Escobar Fandio, Muoz, and Silva Velandia, 2019; Kassab *et al*., 2015) focus on intrinsic motivation and pay little attention to both intrinsic and extrinsic motivation in the context of flipped learning and expectations in any form, particularly in the research context of this study in Northern Cyprus. One study conducted in Northern Cyprus is particularly noteworthy, because it focused on improving student motivation through academic achievement and observations based on gamified flipped learning (defined below) (Asiksoy, 2018). The study included university students enrolled in an undergraduate physics course who learned in a 'gamified' version of flipped learning (using game rules, for example, scoring). The experimental group learned with gamification technology, while the control group did not. A motivation-based questionnaire and semi-structured interviews were used to collect data. The findings show

that students in the experimental group (the research group) had significantly higher motivation and learning efficiency than participants in the control group.

These examples demonstrate the importance of motivation in influencing how learners learn. The more a student is motivated, the better their results will be. The examples also show that motivation must work in tandem with other factors in order for flipped learning to be successful. As a result, in this study, the four factors based on teacher trainees' personal learning preferences, motivation (including self-efficacy), and learning personalities (discussed in the upcoming Section 2.4.4), as well as the *Community of Inquiry's* theoretical framework, are considered factors that may affect teacher trainees' experience with flipped learning. As a result, the final factor, learning personalities, will be examined in the following section. The definition of learning personalities based on Jung's (1954) personality types (Jung, Baynes, and Beebe, 2016; Jung, 1954) will be brought into focus for this purpose.

2.4.4. Factor 4: Learning Personalities (Jung, 1954)

To fully define 'learning personalities,' this case study adopts Jung's (1954) personality types (based on his book '*The Development of Personality'* [Jung, 1954]), in which he introduced a personality theory consisting of eight personality types, defined by the four psychological operations of 'feeling and thinking' (rational operations) and 'intuition and sensation' (irrational operations), as shown in Table 2.2. (Jung, Baynes and Beebe, 2016).

Table 2.2. Learning Personalities

(Jung, 1954)

Extraverted Thinking Types: with this personality, a person makes decisions based on the outside world using unbiased facts.
Introverted Thinking Types: someone who possesses this personality type makes choices based on information, types, and concepts restricted to their mind.
Extraverted Feeling Types: this personality type makes choices, hinging on a value system that is concerned with the well-being of others. Thus, these values are based on universal and social factors.
Introverted Feeling Types: a person with this personality type makes choices based on a value system as well; however, in contrast to the above, their value system is based on their personal values. Therefore, they care more about how a situation impacts them personally instead of the group of people they are interacting with.
Extraverted Sensation Types: this personality type is centred on the five senses of touch, smell, taste, seeing, and hearing. The person who possesses this type of personality focuses on what their five senses tell them about the real world around them in the present time. For example, if a person hears a car alarm go off and focus on it immediately, this is a form of extraverted sensation.
Introverted Sensation Types: with this personality type, a person does focus on their five senses with just a particular difference to the above. They focus on the memory of it (past time). For example, if a person remembers the sound of a car alarm they heard last week, they focus on the memory of the sound instead of paying attention to it in the present.
Extraverted Intuitive Types: a person with this personality type perceives many probable futures. Thus, they conduct swift brainstorming sessions that seek links between individuals and events.
Introverted Intuitive Types: this personality type does not brainstorm, instead, they get insights that seem to originate from nowhere, best described as a sudden feeling of realisation.

It is important to note that the learning personalities and learning preferences discussed in this study are not the same. The learning preferences identified by Nahla (2014) in Table 2.1 represent how a teacher trainee prefers to learn. In a sense, how they 'complete' tasks assigned to them, while the learning personalities described by Jung (1954) in Table 2.2 are the nature of the teacher trainee themselves, Siddiquei and Khalid (2018) support this argument, as their study investigated the difference between learning personalities and learning preferences within an online learning medium (flipped learning) based on students' academic performance in higher education.

Learning personalities have been extensively researched in terms of their relationship with achievement (for example, Bergold and Steinmayr, 2018) or in comparison to learning preferences (for example, Borges and Parmelee, 2011). Learning personalities, as a separate research area in addition to the previously discussed *Community of Inquiry* (Garrison, 2017), learning preferences (Nahla, 2014), and motivation (including self-efficacy) (Zhao, 2012; Bandura, 1997), as a different method of teaching and learning in university education, remain under-explored in non-Western contexts.

Harris (2004), Ackerman and Heggestadt (1997), and Cattell (1957), among others, claim that there is a significant connection between the structures of intelligence and personality, which eventually results in significant correlations between personality and educational attainment. While personality and competence (intelligence) are perceived as distinct concepts in terms of personality traits, for example, in Eysenck's (1994) study, it can be observed that individuals with distinct cognitive abilities differ in their use of resources and capabilities. These differences can result in achievement gaps that are linked to personality (Meyer *et al*., 2019).

Carey and Barthelmeh (2016) argue in their book 'Teaching Approaches and Design Studio' that personality types should be explored as an alternative approach to teaching and learning because there is currently very little research on this component of student learning. They claim that teachers who understand the various personality types can possibly develop techniques that better meet the needs of a larger group of students (Cheaib, 2018). According to the work discussed thus far, personality and personality

traits (types) should be distinguished, with personality denoting a wide range of variables and theoretic constructs and personality traits (types) referring to the measurement of traits as habitual patterns of behaviour, thought, and emotion, as Cheaib (2018) also argues.

In education and research, the concepts of 'learning' and 'personality' are typically studied as separate entities (Borges and Parmelee, 2011). However, considering them together can be beneficial. For example, in non-Western cultures, researchers discovered a link between teacher trainees' personalities and their perceptions of the flipped learning context (Bhagat, Wu and Chang, 2015). A recent study (Keshavarz and Hulus, 2019) conducted at a private university in Northern Cyprus examined learning personalities in relation to student motivation in flipped learning. The findings suggest that students' personalities play an important role in increasing their motivation to use flipped learning, as their personalities determine how they prefer to learn. Students do not have the option of learning with or without flipped learning because flipped learning is only seen in this study as a technological application to gain digital skills based on guidelines revolving around the Department of Education in Northern Cyprus (Tekel and Öztekin, 2021).

According to the research so far, learning personalities can influence flipped learning, and flipped learning can influence learners. However, Jung's (1954) personality types have not been thoroughly investigated in the context of teacher trainees in flipped learning. This is a critical point in the study's investigation of teacher trainees' perceptions of the factors that influence their experience of flipped learning at GAU. Hills's (2017) argument that personality type and personal preferences are relevant to learning supports this. As a result, when training teacher trainees in the field of flipped learning, taking into account learning personalities as well as motivation and learning preferences, including the *Community of Inquiry*, can arguably balance an effective teaching programme. Hills (2017) goes on to argue that people perform best in areas that match their personalities. Teachers and administrators, by acting as a kind of 'performance coach,' play an important role in facilitating the learning process for people with certain personality types.

The personality types proposed by Jung (1954) (Jung, Baynes, and Beebe, 2016) can be considered within the context of flipped learning, according to Hills's (2017) argument.

In this study, for example, one of the factors that may affect teacher trainees' experience in flipped learning is that the teacher trainee has an extraverted intuitive learning personality (Table 2.2). This personality type sees many possible futures and frequently pauses for brief brainstorming sessions to seek connections between individuals and events (Jung, 1954). However, if they lack the digital skills to learn (and eventually teach) with flipped learning, this personality type may switch to another personality type with which they do not associate, leading them to reject flipped learning.

As a result, learning personalities provide a valuable tool when considering learning personality in flipped learning alongside the previously discussed *Community of Inquiry* (Garrison, 2017), learning preferences (Nahla, 2014), and motivation (including self-efficacy) (Zhao, 2012; Bandura, 1997) as factors that can potentially affect teacher trainees within GAU, which may shape teacher trainees' experience of a flipped learning context through their perceived factors. Personality assessments, according to Kamal and Radhakrishnan (2019), can be a useful tool for advising and guiding students. They also argue that it helps instructors understand students' personalities and, as a result, design courses that encourage students to engage more in learning, a factor that can also be considered in teacher training programmes in terms of flipped learning.

This study has discussed all of the factors based on teacher trainees' perceptions of the factors that may affect their flipped learning experience in GAU up to this point; therefore, this chapter will be concluded with empirical research on flipped learning in higher education that has specifically focused on students' perceptions, such as Othman *et al*. (2022), Colomo-Magaa *et al*. (2020), Aljaraideh (2019), and Hessler (2019). In accordance with the discussed introductory chapter and the literature review to this point, this empirical research will highlight the gaps within their literature by discussing the value of this study in filling the identified gaps.

2.5. Flipped learning in Higher Education

Flipped learning is the most effective method of learning in higher education. It encourages students to participate more actively in class discussions and debates by allowing them to learn in a more meaningful way and can help students in higher education learn more effectively by thinking outside the box, being creative, and working collaboratively. It can be useful in classrooms for communication and cooperation between different groups of students (Alam, 2018), as evidenced by Garrison (2017)'s *Community of Inquiry* as the theoretical framework for this study, which investigates students' perceptions of the factors that affect their flipped learning experience.

Othman *et al*. (2022), Colomo-Magaa *et al*. (2020), Aljaraideh (2019), and Hessler (2019), for example, have specifically investigated flipped learning in higher education through students' perceptions. These four studies have emerged to create two specific themes as a synthesisation of an empirical review of these studies discussed below. It is important to note that all these studies focus on one type of flipped learning, which is a mixture of online and face-to-face sessions.

The first theme concerns feedback based on teacher-to-student interactions. On the basis that students within these studies found flipped learning with constant formative evaluation and constructive feedback to be beneficial as a type of individualised learning, students in these studies mention that implementing periodic individualised feedback can help improve their learning experience. As a result, the identified gap within this emerged theme is that students require more personalised learning that is tailored to them.

The second theme concerns autonomous learning and group work. Within these four studies, significant differences in the effectiveness of the flipped classroom in promoting autonomous learning were reported, as many students preferred to learn in groups. The study identified a social dimension regarding the use of autonomous learning versus learning as a community as a form of an identified gap that needs to be tended to.

These identified gaps in the above-mentioned as a whole all underline one key theme, and that is that students have noted that not all flipped learning is effective for them. Other factors that can influence them in flipped learning must be investigated. As a result, the following section will discuss the identified gaps in the literature of the previous four studies in line with the

current study's value, as well as how this study, as discussed thus far, addresses these identified gaps.

2.5.1. The Value of this study in the Identified Gaps of Literature in Higher Education Flipped Learning Research.

The identified gaps in the literature within the studies of Othman *et al*. (2022), Colomo-Magaa *et al*. (2020), Aljaraideh (2019), and Hessler (2019) can be summarised on the basis that all the studies focus on one type of flipped learning (a mixture of online and face-to-face sessions), autonomous learning, group work, and teacher feedback. However, to truly understand students' perceptions of flipped learning, it is necessary to delve into the factors that influence their learning within this type of learning. This study provides a lens for teacher trainees (students) by permitting them to express the factors that affect their learning specifically to them through their voice, as well as providing the possible factors of learning preferences and personalities (Nahla, 2014; Jung 1974), *Community of Inquiry*, motivation, and self-efficacy (Garrison, 2017; Zhao, 2012; Bandura, 1997) according to the GAU, Northern Cyprus setting. The failure to include these factors within educational research (for example, Othman *et al*. (2022), Colomo-Magaa *et al.* (2020) and Aljaraideh (2019), have limited studies to investigate the true nature of students' perceptions on the matter of their flipped learning experience. In response, this creates a unique value for this study.

This study, as discussed up to this point in this current literature review and previous introductory chapter, has investigated, in summary, the following topics: imitation of Western culture in GAU's pedagogy and teacher trainees' relationship with flipped learning. In addition to the factors that may influence teacher trainees' flipped learning experience in GAU (COI, learning preferences and personalities, and motivation, including self-efficacy).

As a result, it has been noted that previous studies have been limited to primarily fostering digital literacy by focusing solely on technological skills such as using Microsoft Office tools (Tekel and Öztekin, 2021; Counsell *et al*., 2000). Thus, excluding COI, learning preferences and personalities, and motivation, including self-efficacy, which are significant factors, using such a framework based on the concept of these stated limitations will not factor in teacher trainees'

learning needs being adhered to. In response to this, this study is set up to explore the perceptions of teacher trainees on the factors that affect their flipped learning experience and will, therefore, aim to answer the following research question:

The Main Research Question:

What are teacher trainees' perceptions of the factors that affect their flipped learning experience in Girne American University?

Accordingly, the following chapter will delve into the methodology of this study surrounding this research question, drawing on the previously discussed literature review and introductory chapter.

CHAPTER 3. METHODOLOGY

3.1. Overview

The meaning and rationale of the research question were framed in the introductory and literature review chapters of this study to provide an initial foundation for the present chapter on methodology. This chapter establishes the methodology of this study by first providing a justification of its research design and the rationale behind the construction of the data tools (questionnaire and interview questions) through this research design. In order to establish the reliability and validity (defined in Section 3.5) of this study, this chapter first discusses a pilot study (defined in Section 3.5) conducted for this study. Then, it discusses the limitations and delimitations of this study (defined in Section 3.6). Finally, the demographic data of the main study are given, and a discussion is presented on how the above-mentioned questionnaire and interview were analysed in Chapter 4 of this study, which ends with a discussion of the ethical considerations of this study alongside the summary of this chapter. Accordingly, the next section deals with the research design of this study, which is further defined as *'[the] process of collecting, analysing, interpreting, and reporting data in a research study'* (Creswell and Clark, 2007, p.58).

3.2. The Research Design of this Study

The philosophy that underpins this research is pragmatism. The philosophy of pragmatism, founded by John Dewey, is based on the premise that beliefs are linked to a believer's actions and that the validity of those actions is related to their effectiveness in achieving a believer's goals; thus, ideas must be evaluated in terms of their practical implications and consequences (Maddux and Donnett, 2015; Dewey, 1938). By employing pragmatism as the supporting philosophy of this study, the definitions of epistemology, ontology, and paradigm structure are outlined.

First, pragmatism is not constrained by any single philosophy or reality system in terms of ontology and epistemology. As individuals, in this study's case teacher trainees, engage in flipped learning (Table 3.1), reality is actively created, and it is thus ever changing, based on teacher trainees' experience, and oriented toward solving practical problems that emerge within this type of learning, namely the factors that influence teacher trainees' flipped learning experience within their perception (Maddux and Donnett, 2015; Dewey, 1938).

Table 3.1. Flipped Learning Courses Investigated in this Study (GAU, 2020)

The Following Programmes are Teaching Degrees or Certification Programmes at Girne American University (GAU) in Northern Cyprus as of 2020:
1. English Language Teaching (ELT) BA (Duration: Four Years) Third Year Course: First Semester: Instructional Technology **2. ELT MA (Duration: Two Years)** First Year, First Semester: Computer-Assisted Language Learning (CALL) **3. ELT PhD (Duration: Two to Five Years)** First Year, First Semester: Approaches to Teacher Education **4. PGCE (Duration: One Year)** First Year, First Semester: Instructional Technology

Second, the claim that knowledge is always founded on experience and can thus be duplicated is a crucial component of pragmatic epistemology in educational research based on teacher trainees. Teachers' opinions of their education are shaped by their social experiences. The knowledge of each teacher trainee is unique since it is formed by his or her own unique experiences (Maddux and Donnett, 2015; Dewey, 1938). This is directly in line with the main rationale of this study, which is to find and explore teacher trainees' unique experiences with flipped learning and the factors that affect them within this type of learning based on their perceptions, which also relates back to the typical uniqueness of this study's value in educational research. Furthermore, the theoretical framework of this study adds social experiences as a factor

based on the Community of Inquiry's social presence (Garrison, 2017). Pragmatism, a concept first articulated by John Dewey addressing the nature of knowledge generation and the process of scientific inquiry, is likewise consistent with this study's theoretical framework of COI (Maddux and Donnett, 2015; Dewey, 1938). *'[The] COI emphasizes that knowledge is necessarily embedded within a social context and, thus, requires intersubjective agreement among those involved in the process of inquiry for legitimacy' (Shields, 2003, p. 513).* Therefore, the philosophy of pragmatism directly supports the theoretical framework of this study and aids in the investigation of teacher trainees' perceptions of their flipped learning experiences based on the aspects that affect their flipped learning experiences.

Finally, to help this study further investigate these opinions of teacher trainees and the aspects that influence their flipped learning experiences, in the following sentences, the paradigm of this study is described and discussed using the supported philosophy of pragmatism. A paradigm is a set of common beliefs and attitudes among research group members that influences data collection methods (Sönmez, 2013). Considering the foregoing of this study's pragmatic philosophy, this study employs exploratory sequential mixed methods, which result in a mix of quantitative and qualitative data collection methods (Greene, 2018). This study agrees with the advocation of using such a type of mixed methods data collection through the argument presented by Shaw *et al.* (2010), in which they note that:

[Pragmatism] is an emerging research paradigm where practical consequences and the effects of concepts and behaviours are vital components of meaning and truth. This research paradigm supports the simultaneous use of qualitative and quantitative methods of inquiry to generate evidence to support best practice. This paper demonstrates that mixed methods research with a pragmatist view provides evidence that embraces and addresses the multiple practice concerns of practitioners better than either qualitative or quantitative research approaches in isolation (Shaw *et al*., 2010, p.510)

Creamer (2018) additionally argues that '*[case] studies are presented as a type of analysis that often links qualitative and quantitative data, and used as a bridge that spans research paradigms'* (p.131). Explanatory design, according to Creswell and Clark (2007), is a two-stage

mixed method design. This pattern begins with the collection and analysis of quantitative data and then progresses to the collection and analysis of qualitative data. In the descriptive design, the researcher recognizes quantitative findings that require further explanation. To delve deeper into the quantitative data, the researcher gathered qualitative information from the participants, which could help explain these findings. The explanatory design is widely regarded as the most basic and simple of the mixed method designs (Creswell and Clark, 2007). They went on to say the following about the benefits of explanatory research design: The two-stage structure streamlines the procedure by allowing the researcher to apply the two methods sequentially and collect only one type of data at a time. The final report can be broken down into two parts, giving the reader a clear picture of the findings. As a result, combining the two methods can yield detailed and comprehensive data, as well as data interpretation.

The current study is based on participant perceptions, and this type of explanatory mixed method design is used in many perception studies. Guillot (2003), for example, devised and carried out a mixed method design to assess teacher and student perceptions of online teaching methodology in higher education. Ismail, Almekhlafi and Al-Mekhlafy (2010) investigated the perceptions of Arabic and English language teachers in United Arab Emirates (UAE) schools regarding the use of technology in their classrooms using qualitative and quantitative methods. As a result, in this study, exploratory sequential mixed methods will be used to investigate the factors that influence teacher trainees' experiences with flipped learning through their perceptions by incorporating questionnaire data collection (quantitative data) and conducting semi-structured interviews (qualitative data), as defined, and explored in the following section. This study has centred all of the questionnaire items and interview questions on the factors introduced and discussed in the literature review in the introductory chapter.

This data collection method has the advantage of balancing the limitations of quantitative and qualitative analysis, making study results more valuable in terms of legitimacy (Turner, Cardinal, and Burton, 2017). As a result, this study uses pragmatism to explore and interpret participants' (teacher trainees') perceptions of what factors shape their experiences of flipped learning, with the sole intention of only using exploratory sequential mixed methods mixed methods for data collection in order to combine the overarching paradigm of interpretivism (Turner, Cardinal, and Burton, 2017).

Other than the philosophy of pragmatism and using exploratory sequential mixed methods for data collection, in order to be successful, this study cannot pursue any other form of philosophy present in the world of social science research, for example positivism, as noted by Hasan (2016), Ali and Chowdhury (2015) and Benton and Craib (2001), '*[is] a philosophy that states that the only authentic knowledge is scientific knowledge and that such knowledge can only come from the positive confirmation of theories through a rigorous scientific method*' (Bryant, 2017, p.46). With regards to the notion that this study is exploring and interpreting teacher trainees' (participants') perceptions of what factors shape their experience of flipped learning, regarding the *Community of Inquiry*, learning preferences, motivation, and learning personalities discussed in Chapter 2 or possibly disagreed on by teacher trainees through this study's data results, which will be discussed in Chapter 4 of this study. As a result, this study considers teacher trainees' experiences as a reliable source of knowledge through their perceptions of these factors. Furthermore, this study is eliciting descriptive data results from the perceptions of teacher trainees through the 'Flipped Learning Courses Investigated in Study' (Table 3.1), as part of the mixed method data collection. The descriptive data results and how they will be obtained using the method of data collection chosen for this study will be discussed further in the upcoming subsections.

Greene (2018) states that '*pragmatism proposes a realist perspective of the physical world in conjunction with a constructionist perspective of the social world, which lends itself to the integration of both quantitative and qualitative lines of inquiry' (p.4)*. Second, as argued in an example by Papadopoulou (2021), who conducted a case study on the topic of pragmatism in online education based on three adult trainers (teachers) through flipped learning, utilizes pragmatism as the underpinning philosophy, similarly to this study, on the basis that, further according to Papadopoulou (2021), after exploring the characteristics of flipped learning, the philosophy of pragmatism is most suitable for case studies concerning flipped learning based on the following three reasons: first, the context and methodology of mixed research yield the results of perceptions in detail. Second, the nature of mixed research yields further depth into analysing professional practices and situations. Finally, the discussion of results through the philosophy of pragmatism yields a comprehensive discussion in which emerging themes are

supported by both quantitative and qualitative results. Following this, Shaw *et al.* (2010), argue that:

[Critiques] of pragmatism and mixed methods research are generally targeted at researchers who do not investigate the philosophical implications of using pragmatism This philosophy, has important epistemological tenets that determines the knowledge claims that researchers are able to make from within a pragmatist viewpoint' (Shaw *et al*., 2010, p.516).

Further advocation and the reasons for using pragmatism in this study in order for this study to be effective in determining what elements affect teacher trainees' flipped learning experience in GAU will be examined throughout this methodology chapter with regard to this current section. In conclusion, based on the previously described major purpose of this investigation, the philosophy of pragmatism will aid this study in addressing the research issue. The research question of this study has been restated below:

The Main Research Question:

What are teacher trainees' perceptions of the factors that affect their flipped learning experience in Girne American University?

The next section outlines how the philosophy of pragmatism was utilized to develop the questionnaire and interview for this study in order to aid the study in determining which aspects affect teacher trainees' flipped learning experience.

3.3. The Construction of the Questionnaire and Semi-Structured Interview of this Study through Exploratory Sequential Mixed Methods

As previously stated, this study has linked all the questionnaire items and interview questions to the factors introduced and discussed in the introductory chapter's literature review. The following paragraph will go over how the factors of Garrison's (2017) *Community of Inquiry* as a theoretical framework, learning preferences (Nahla, 2014), motivation (including self-efficacy) (Zhao, 2012; Bandura, 1997), and learning

personalities (Jung, Baynes, and Beebe, 2016; Jung, 1954) interact with each other within the flipped learning environment. In turn, the questionnaire items and interview questions have been shaped.

The questionnaire (Appendix B) is divided into two sections. The first section consists of three open-ended questions developed by the study's researcher in accordance with the *Community of Inquiry* theoretical framework discussed in Chapter 2: Section 2.4.1. As a result, these questions are specific to this study. As a result, the first open-ended question, '*What is your overall general experience with flipped learning*?' is associated with the *Community of Inquiry*'s teaching presence, which is based on the strategy, enablement, and achievement of independently meaningful and educationally important learning through flipped learning, as well as the promise of student-centred learning on which the COI is based (Garrison, 2017).

The second open-ended question is, *'specifically, what has your experience been in the comprehension (understanding) of taught course materials through flipped learning?*' is based on the cognitive presence of the *Community of Inquiry*, the extent to which students can produce and affirm understanding through continuous thought and debate in flipped learning, and the tasks assigned to them in this type of learning (Garrison, 2017).

The final open-ended question of *'what is your experience of interpersonal relationships within flipped learning?*'. The *Community of Inquiry*'s social presence is associated with interpersonal relationships, which are two or more people's social connections, interactions, or affiliations (Stebbins, 2015), based on the propensity of participants' engagement with a specific community (Garrison, 2017). This question is based on the teacher trainees' participation in flipped learning with their peers and teachers.

In line with the epistemology of this research, these open-ended questions have been incorporated into the questionnaire because participants will frequently share their unique, personal experiences through open-ended questions. This type of sharing allows the researcher to investigate how the interviewee perceives their surroundings, for example, through flipped learning (Allen, 2017; Agee, 2009). As a result, the illuminating nature of the stated inquiry aligns with this study's overarching interpretivism paradigm in combination with the theoretical perspective design based on aspects of positivism,

where knowledge is gained through experience. These questions probe teacher trainees' experiences in the flipped learning context, allowing them to identify the factors that have influenced their perceptions. The open-ended qualitative questions allow participants to respond from their point of view before answering the quantitative questions, which have been shaped by the factors influencing teacher trainees' flipped learning experience.

The second section of the questionnaire (Appendix B) follows the open-ended questions with a five-point Likert scale of: Strongly agree (1), Somewhat agree (2), Neither agree nor disagree (3), Somewhat disagree (4), and Strongly disagree (5), which participants used to rate their level of agreement with the twenty-six statements. The twenty-six statements consist of a survey instrument based on the factors that affect teacher trainees' experiences in flipped learning discussed in Section 2.4: *the Community of Inquiry,* learning preferences, motivation (including self-efficacy), and learning personalities.

The twenty-six statements, as mentioned, were developed by this study. As the twenty-six statements were created by this study, the statements are original and unique in nature to this study, in addition to the open-ended questions described above. The practical guide (Table 3.2) followed in creating questionnaire items and the placement of these items are based on best practice by Gehlbach and Artino Jr. (2018) and Gehlbach and Brinkworth (2011).

Table 3.2. Practical Guide Followed in Creating Questionnaire Items in this Study

(Gehlbach and Artino Jr., 2018; Gehlbach and Brinkworth, 2011)

Ask about one idea at a time
Use at least five response options per scale
Maintain equal spacing between response options
Ask the open-ended questions earlier in the questionnaire
Maintain a consistent visual layout of questionnaire

With regards to the above practical guide by Gehlbach and Artino Jr., (2018) and Gehlbach and Brinkworth (2011), the number of statements was chosen based on the seven learning

preferences (Section 2.4.2), the eight learning personalities (Section 2.4.4), the two types of motivation, including self-efficacy expectations (Section 2.4.3), and the three presences (social, teaching, and cognitive) explored through this study's theoretical framework based on Garrison's (2017) *Community of Inquiry* (Section 2.4.1). It is also worth noting that certain statements within the groups (Table 3.3) consisting of learning preferences, learning personalities, and motivation, including self-efficacy, are consistent with (integrated with) the *Community of Inquiry*, as this is the theoretical framework of this study. This is because a theoretical framework is a framework that contains or supports an understanding of ideas and concepts relevant to the study's topic and provides a broader perspective on the area of knowledge under consideration (Dolan and Taylor-Piliae, 2019).

In summary, each of the four factors and their relationship is represented by one of the twenty-six statements in Table 3.3. For example, the statement *'flipped learning increases a student's technical ability'* (Table 3.3) is consistent with motivation in relation to self-efficacy (Zhao, 2012; Bandura, 1997) and its relationship with flipped learning and teacher trainees as discussed in this study's literature review. Finally, the rationale for basing the questionnaire items on the literature review factors (COI, learning preferences, learning personalities, and motivation, including self-efficacy) is based on the relevance of the relationship between these factors, teacher trainees, and their experience with flipped learning discussed in the literature review. This is the setting for this research, which focuses on teacher trainees' perceptions of the factors influencing their flipped learning experience at GAU. As a result, basing the questionnaire items on the factors mentioned in the literature review demonstrates the study's uniqueness and relevance and justifies the questionnaire item construction.

Table 3.3. The Twenty-Six Likert Scale Statements Concerning the Four Factors Affecting Teacher Trainees in Flipped Learning

Motivation Including Self-efficacy (Section 2.4.3)	**The *Community of Inquiry: Theoretical Framework* (Section 2.4.1)**

○ I enjoy using flipped learning because I find it fun to learn with. (*Intrinsic Motivation)*
○ I only engage in flipped learning approach, as it is a mandatory part of my course. *(Extrinsic Motivation)*
○ Flipped learning increases a student's technical ability. *(Self-efficacy Expectation)*
	○ The isolation factors of flipped learning does not motivate me. *(Social Presence)*
	○ Flipped learning prevents a teacher not to give efficient feedback individually. (*Teaching Presence).*
	○ The selected content on my flipped learning course provides me with a better understanding. *(Cognitive Presence)*
	○ Flipped learning has helped my critical thinking skills progress even further than before. *(Cognitive Presence)*
	  ○ My teacher has designed a flipped learning course that has established meaningful learning for me. (*Teaching Presence).*
	  ○ I feel pressured when logging into the flipped learning platform. *(Social Presence)*
	  ○ The discourse which occurs in the flipped learning approach is meaningless to me. *(Social, Teaching, and Cognitive Presence Combined)*
	  ○ Overall, I never want to retake another flipped learning course. *(Social, Teaching, and Cognitive Presence Combined)*

Learning Preferences (Section 2.4.2)	**Learning Personalities (Section 2.4.4)**
It is important to note that all statements are concerned with the *Community of Inquiry*'s cognitive presence alongside the associated learning preference (Section 2.4.1) ○ I enjoy learning with visuals (graphs and pictures) instead of written text. (*Visual)* ○ I comprehend information in an audio format (online) in flipped learning more effectively. *(Aural)* ○ The lack of body movement in the online media of flipped learning demotivates me. *(Kinaesthetic)* ○ The lack of hands-on activities in flipped learning demotivates me. *(Haptic)* ○ I prefer to learn with printed materials, reading books, and a whiteboard for writing instead of flipped learning. *(Print)* ○ I prefer to engage in authentic discussions and ask questions in real life instead of digitalised (typed) discussions and answers online. *(Interactive)* ○ The lack of correlating tasting and smelling senses with my learning in	○ I prefer to work and make choices on my own. Thus, mandatory peer work in flipped learning demotivates me. *(Introverted Thinking) (Community of Inquiry: Social Presence)* ○ Flipped learning provides an environment for unbiased learning and facts. *(Extraverted Thinking) (Community of Inquiry: Teaching Presence)* ○ Flipped learning is concerned with the well-being of all students and creates a positive social environment. *(Extraverted Feeling) (Community of Inquiry: Teaching presence)* ○ Flipped learning disregards individual learning in terms of learning needs. *(Introverted Feeling) (Community of Inquiry: Teaching Presence)* ○ Flipped learning does not simulate present time learning by using the five senses efficiently. *(Extraverted Sensation) (Community of Inquiry: Cognitive Presence)* ○ Flipped learning does not simulate reminiscing past events in learning by using the five senses efficiently. *(Introverted sensation) (Community of Inquiry: Cognitive Presence)*

flipped learning demotivates me. *(Olfactory)*	

	Learning Personalities (Section 2.4.4)
	○ Flipped learning stimulates swift brainstorm sessions that enable a student to see links between them and events. (*Extraverted Intuitive) (Community of Inquiry: Cognitive Presence)* ○ Flipped learning does not allow students to gain their insights autonomously. *(Introverted Intuitive) (Community of Inquiry: Teaching Presence)*

To this point, the reasons for developing each section of the questionnaire have been discussed. This sets the stage for the second section of this mixed methods data collection, which discusses how the interview questions were developed based on the study's research design.

3.3.1. Interview Questions

In qualitative research interviews, an interviewer asks respondents questions in order to elicit subjective information about a specific topic or experience (McGrath, Palmgren and Liljedahl, 2019). Although the definitions and goals of qualitative research interviews vary slightly across the research literature (for example, Cropley, 2019; Biesta and Burbules, 2003; Green, 1999), the overall focus is on exploring respondents' perceptions of their environment. The illuminative nature of the research is therefore consistent with the paradigm of this study (interpretivism) and aspects of its theoretical perspective (positivism) in that it pursues the critical detail of qualitative research findings using

interviews to achieve a *'[thick] definition by explaining and exploring intentions, motivations, meanings, backgrounds, conditions, and circumstances of experiences'* (Minichiello, Aroni and Hays, 2008, p. 5). The semi-structured interview is the most common type of interview used in educational research (DeJonckheere and Vaughn, 2019). According to Cohen, Manion, and Morrison (2018), themes and questions are posed in semi-structured interviews, but the questions themselves are open-ended, and the interview script sequence can be tailored to each respondent and the answers given, using prompts and probes when clarification and elucidation are required. Allowing the participant to comment on the research based on his or her experience, which emerges from the semi-structured questions asked, falls under the category of interpretivism (furthermore, semi-structured interviews combine features of both structured (prepared questions based on a schedule) and unstructured (questions that are not planned) interviews and thus offer the benefits of both) (National Defense Research Institute [RAND], 2009). Adhering to an objective comparison of participants while providing the opportunity to spontaneously discuss issues tailored to each participant as they arise is consistent with the study's overarching interpretivism paradigm.

Appendix C contains thirteen open-ended, semi-structured interview questions designed to elicit each participant's interpretation (perception) of their experience with the flipped learning context at the time of the interview. Each of the thirteen questions in Table 3.4 is tailored to the *Community of Inquiry's* teaching, cognitive, and social presences (as was the design and implementation of the twenty-six Likert scale statements in Table 3.3) and is concerned with factors that influence teacher trainees' experience with flipped learning. In the first question of the interview, there is also an essence of motivation as a factor that affects teacher trainees' experience with flipped learning. This study designed the thirteen interview questions to allow participants to describe and reflect on their experiences in the context of flipped learning through their relationship with it in terms of COI and motivation (Garrison, 2017; Zhao, 2012; Bandura, 1997). Based on the foregoing, the interviewer listens, observes with sensitivity, and encourages the participant to speak (DeJonckheere and Vaughn, 2019) in order to investigate their perceptions of the factors influencing their flipped learning experience at Girne American University.

Table 3.4. Open-ended Semi-structured Interview Questions (Thirteen)

1. What inspired (motivated) you to become a teacher trainee? *(Motivation) (Community of Inquiry: Social Presence)*
2. How is your flipped learning course conducted, as in what is required of you as a teacher trainee? *(Community of Inquiry: Teaching Presence)*
3. Could you tell me about your opinion on your institution's policy that all teacher training programmes should include '*Technological Pedagogical Content Knowledge'* (*TPACK*) in the form of flipped learning? *(Community of Inquiry: Teaching Presence)*
4. Has your experience with previous courses (Modules) in your teacher training programme affected your experience in your flipped learning course? *(Community of Inquiry: Cognitive Presence)*
5. What specific previous learning experiences shape how you experience flipped learning in your current course? *(Community of Inquiry: Cognitive Presence)*
6. Could you tell me how your views and actions may have changed regarding your flipped learning course? *(Community of Inquiry: Teaching Presence)*
7. How have you developed as a teacher trainee since starting your flipped learning course? *(Community of Inquiry: Cognitive and Teaching Presences)*
8. When you reflect on your flipped learning experience, what aspects are positive and why? *(Community of Inquiry: Teaching Presence)*
9. As a follow-up question, when you reflect on your flipped learning experience, what aspects are negative and why? *(Community of Inquiry: Teaching Presence)*
10. After having this flipped learning course experience, what advice would you give to another teacher trainee who will start this course? *(Community of Inquiry: Social Presence)*
11. Is there something you might not have thought about before that occurred to you during this interview regarding your flipped learning experience? *(Community of Inquiry: Teaching and Cognitive Presences)*

12. Is there anything else you would like to add? *(Community of Inquiry: Social Presence)*
13. Finally, is there anything else you would like to ask me? *(Community of Inquiry-social presence)*

As previously stated, using exploratory mixed methods in this manner compensates for some of the shortcomings that quantitative and qualitative data have on their own (this was demonstrated above by exploring the construction of the questionnaire and semi-structured interview of this study through the advantages of both instruments based on the ideas underlying the study's research design). By focusing on how the questionnaire and semi-structured interview construction relate to the research question, the rationale, and the research design of the study. In addition to providing participants an opportunity to express their views without limiting them to one form of expression (for example, expressing their views through open-ended questions). The analysis of these two data collection methods are discussed in the upcoming sections. However, to test the feasibility (‘*degree of ease or convenience in conducting a study’* [Creamer, 2018]) of the discussed questionnaire and interview, a pilot study was conducted to pave the way for the main study, as described and defined in the next section.

3.4. The Pilot Study

This study employs a pilot study in accordance with van Teijlingen and Hundley’s (2001) research, who define a pilot study as the feasibility of experiments, which are scaled-down versions or a sample run performed as groundwork for a more extensive analysis, answering the question '*[can] this study be done?*' (van Teijlingen and Hundley, 2001, p.4). As a result, in accordance with van Teijlingen and Hundley's (2001) definition of a pilot study, the pilot study provided an early warning in terms of where the main research initiative could fail, where research approaches might not be implemented, or where planned research tools or resources are ineffective or overly complex (Creamer, 2018).

As a result, a pilot study was conducted from 16th September to 30th September, 2020, with twelve participants (Tables 3.5 and 3.6), with at least two participants from each target teacher education programme, chosen because there are four different program groups in the research context of this study in Northern Cyprus, as shown in the tables below. In order to anonymize the data within the ethical considerations of this study, discussed and defined in Section 3.8, each teacher trainee was assigned an 'ID,' as shown in Tables 3.5 and 3.6.

Table 3.5. Teacher Trainee Demographics for the Questionnaire (Pilot Study)

Pilot Study- Teacher Trainee: ID	**Gender**	**Age (Years)**	**Programme of Study**
1	Female	25–34	PGCE
2	Female	25–34	PGCE
3	Male	25–34	ELT Bachelor
4	Male	25–34	ELT Bachelor
5	Female	25–34	ELT Master
6	Female	18–24	ELT Master
7	Female	35–44	ELT PhD
8	Female	35–44	ELT PhD
9	Male	25–34	ELT Master
10	Female	25–34	ELT Bachelor
11	Female	25–34	ELT PhD
12	Male	18–24	PGCE

Table 3.6 Teacher Trainee Demographics for the Semi-Structured Interview (Pilot Study)

Pilot Study- Teacher Trainee: ID (See Table 3.5: ID number is carried on from questionnaire)	**Gender**	**Age (Years)**	**Programme of Study**
1	Female	25–34	PGCE
4	Male	25–34	ELT Bachelor
12	Male	18–24	PGCE
5	Female	25–34	ELT Master
11	Female	25–34	ELT PhD
8	Female	35–44	ELT PhD

Furthermore, only twelve participants were chosen based on the recommendation of Williams (2003) and van Belle (2002), who recommend the 'rule of twelve' for pilot studies with a primary emphasis on estimating average values and uncertainties in preparation of major follow-up studies, as this scale is realistic for most researchers to conduct across multiple sites while still providing useful preliminary information. This study followed Taylor, Sinha, and Ghoshal (2006)'s recommendation for the semi-structured interview, which states that a sample size of five or six will provide valuable information in preparation for the main study.

The pilot study included twelve volunteer teacher trainees who completed the questionnaire, with six selected for semi-structured interviews from the questionnaire. The semi-structured interviews lasted between thirty and forty-five minutes in total. It is critical to emphasize that this study uses the pilot study method to assess feasibility in preparation for the main study. As a result, Section 3.7 delves into the duration of each

semi-structured interview conducted in the main study. Furthermore, it would not have been feasible to select participants from outside the target groups of teacher trainees in Northern Cyprus for feasibility reasons. The pilot study was designed to determine whether participants understood the written and posed questions in both the questionnaire and the interview in terms of teacher trainee content (Williams, 2003). As a result, someone unfamiliar with this field may comprehend the research design of the questions asked in the questionnaire and interview but not the content of these questions (for example, regarding pedagogy).

Understanding of the questionnaire and interview (further summarised in the discussion below) was achieved in the current pilot study by following Sudman, Bradburn, and Schwarz (1996) within their 'cognitive model' (Figure 5). Participants' feedback also revealed:

(1) *'The questions in the questionnaire were readable, easy to follow and comprehend.'*
(2) '*The questions in the interview were comprehendible.'*

The participants only asked that the definition of 'flipped learning' be added at the beginning for a clear understanding of this type of learning, as well as a definition of 'interpersonal communication.'

Figure 5. Model of the Cognitive Processes Involved in Responding to a Survey Item
(Sudman, Bradburn, and Schwarz, 1996, p.305)

Furthermore, the pilot study results were only used to test the validity and reliability (defined below) of the factors that may affect teacher trainees' experience in flipped learning (the *Community of Inquiry*, learning preferences, motivation, and learning

personalities) in developing the research tools and research question, so the interviews and questionnaire analyses were not included in the pilot study. It is important to note that the reliability of a research study is defined either as measurement accuracy (Bollen, 1989) or measurement consistency over a range of conditions under which the same results can be obtained (Nunnally, 1978). While validity is defined as the extent to which the research's validity in relation to the research question tests the concept under study in relation to the research (Mohajan, 2020), this study adheres to Converse and Presser's (1986) argument that using a pilot study to test the validity and reliability of a study's instruments and research questions ensures that the research instrument questions (questionnaire and interview) are explicitly formulated and that the options (factor and research question) included in the two research instruments' questions are valid, detailed, and independent of one another. As a result, the mentioned instruments are valued not only by this study but also by the participants.

The four factors that may affect teacher trainees' experience in flipped learning (the *Community of Inquiry*, learning preferences, motivation, including self-efficacy, and learning personalities) used to facilitate the instruments and the research question of this study were found to be applicable (feasible) in terms of validity and reliability from the participants' perspective.

For example, in the second section of the questionnaire (Appendix B), which consists of a Likert scale, one of the twenty-six statements stated as *'the flipped learning disregards individual learning in terms of learning needs*' (Table 3.7) indicated the need for further exploration of the factors through the perceptions of teacher trainees. On this basis, 58.3% (seven out of twelve) of the participants agreed with this statement, while three neither agreed nor disagreed (25%), and two (16.7%) somewhat disagreed.

Table 3.7. Flipped Learning Disregards Individual Learning in Terms of Learning Needs

Likert Scale	**Frequency**	**%**
Strongly Agree	6	50
Somewhat Agree	1	8.3
Neither Agree nor Disagree	3	25
Somewhat Disagree	2	16.7

Furthermore, in the flipped learning interviews, four of six interviewees (an ELT MA, BA, and PGCE) stated that the teacher of their course did not tailor their flipped learning course in a meaningful way that initiates learning, as shown in the following statement:

(1) 'Technical difficulties and not much cooperation between students.'(Participant: PGCE).

(2) '*Not bad, I just hate the constant 'forced' conversation'* (Participant: ELT PhD).

(3) '*It was fine'* (Participants: PGCE and ELT BA).

(4) 'It was not good at all because our teacher was not good enough with [the] flipped learning approach' (Participant: ELT MA).

Based on the examples above, the pilot study of this study found some factors that influence teacher trainees' experiences of flipped learning from the perspective of teacher trainees themselves at Girne American University. For example, communication between teacher trainees, the lecturer's technical skills, and individual learning needs are not included in the analyses of these interview and questionnaire results in the pilot study because the pilot study only served to test the validity and reliability of the four factors (the *Community of Inquiry*, learning preferences, motivation, including self-efficacy, and learning personalities) that affect teacher trainees' experience in flipped learning in the

design of the research instruments and the research question. However, as teacher trainees have outlined the factors that affect them in flipped learning, these findings confirm that the research question of this study is valid in terms of Converse and Presser's (1986) argument. The validity and reliability of this study will be discussed further in the following section.

Finally, the results of the pilot study confirmed that the structure of this study and the philosophy of pragmatism that it follows 'works' specifically for this study. As previously stated, no other research design than the use of exploratory sequential mixed methods stemming from the underlying philosophy of pragmatism allows the data results of this study to be revealed, as demonstrated by the results of this pilot study. This also demonstrates that the data collection techniques used in this pilot study work particularly well for this study and produce the answers needed to answer the research question, which pertains to the feasibility point addressed at the beginning of the section (van Teijlingen and Hundley, 2001). The structure of the research design did not need to be changed as a result of this outcome; just the minor recommendation above for clarity in the definitions within the questionnaire needed to be changed.

3.5. The Reliability and Validity of the Main Study

The feasibility of this study was determined by the results of the pilot study in the previous section. As a result, this section focuses on the reliability and validity of the main study, as defined in the previous section. This main study achieved both reliability and validity. First, in terms of reliability, this study employs reliability analysis in two ways. Second, the standard advice in social science research based on this type of analysis is to have at least ten participants per item of a scale (Boateng *et al*., 2018) in terms of qualitative and quantitative data. As a result, this study adheres to this standard by enlisting forty participants (four multiplied by ten equals forty) to investigate the four different types of 'teaching programmes' mentioned in the preceding section. Third, to test reliability, this study employs the SPSS 'Scale' function to run reliability analysis using the Cronbach's alpha statistic. Cronbach's alpha (Equation 1) is a reliability metric that compares the amount of shared variance, or covariance, among the items that comprise

an instrument to the amount of overall variance. If the instrument is reliable, the items should have a lot of covariance relative to the variance (Park and Choi, 2021; Taber, 2018).

$$p_T = \frac{k^{2-}_{\sigma_i j}}{\sigma_x^2}$$

Equation 1. Cronbach's Alpha Formula

(Cho and Kim, 2015, Fig.1, p.2)

p_T = tau-equivalent reliability

k = number of items

$\sigma_i j$ = covariance between Xi and Xj

σ_x^2 = item variances and inter-item covariances

This study used George and Mallery's (2003) rule to interpret Cronbach's alpha output for reliability. George and Mallery (2003) developed a rule of thumb (Table 3.8) for calculating Cronbach's Alpha for a dichotomous or Likert scale instrument, which was used in this study for the quantitative section of the questionnaire discussed in this chapter.

Table 3.8. Cronbach's Alpha *(George and Mallery, 2003)*

$\alpha \geq 0.90$	Excellent
$0.80 \leq \alpha < 0.90$	Good
$0.70 \leq \alpha < 0.80$	Acceptable
$0.60 \leq \alpha < 0.70$	Questionnaire
$0.50 \leq \alpha < 0.60$	Poor
$\alpha < 0.50$	Unacceptable

The Cronbach's Alpha has a value between 0 and 1. The closer the Cronbach's Alpha value is to 1, the greater the internal consistency of the item within the scale. According to George and Mallery (2003), a Cronbach's Alpha value above 0.90 indicates excellent internal consistency; a value above 0.80 is good; a value above 0.70 is acceptable; a value above 0.60 is questionable; a value above 0.50 is poor; and a value below 0.50 is unacceptable. Accordingly, this study's Cronbach's Alpha output for reliability was found to be .800 (Table 3.9). Thus, based on George and Mallery's (2003) rule to interpret Cronbach's Alpha output for reliability, this study has good reliability.

Table 3.9. Reliability Statistics of this Study

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.800	.818	26

The second factor is based on 'validity,' which is derived from the previous paragraph's standard of reliability of the analysis of forty participants in relation to the quantitative data of the twenty-six Likert scale statements discussed in Section 3.3. As a result, to ensure the validity of the quantitative results, this study uses the 'confidence interval' formula (Equation 2) as its standard. The following explains what this standard is and why it was chosen. Because a researcher conducting a study can only approximate the parameters of a population, the confidence interval formula is a type of estimated data obtained from statistics obtained from quantitative data to support the validity of research (Sedgwick, 2014). The 95% (out of 100%) confidence interval (1.96) shown in Equation 2 is considered standard in research as it proposes a range of probable values for an indefinite parameter of a specific population (See Machin *et al*., 2018).

$$\bar{x} \pm z \frac{S}{\sqrt{n}}$$

Equation 2. Confidence Interval Formula

X: is the mean

Z: is the chosen Z-value (1.96 for 95%)

S: is the standard error

N: is the sample size

(McLeod, 2019, Fig.1, p.2)

As a result, this study adopts this standard by taking into account the forty participants based on the above-mentioned reliability analysis and the 95% confidence interval (1.96) in terms of validity to accept a 5% margin of error according to the confidence interval standard set in research by Machin *et al.* (2018). As a result, the confidence interval in this study is calculated using the formula in Equation 1 by first performing a central tendency calculation (calculating the mean: 'X') of the four factors against the average of the forty participants in this study regarding the twenty-six Likert scale statements discussed previously.

It is important to note that the mean (calculation of central tendency) is calculated as the sum of all values in a data collection and divided by the total number of values. It is the most commonly used measure of central tendency because it uses all values in the calculation (Brase and Brase, 2017).

Numerous studies have criticized the use of central tendency calculation (calculating the mean in this study's case) to analyse Likert scale questions owing to the ordinal nature of the Likert scale. According to Prasojo *et al.* (2020), it is possible to make conclusive decisions on whether to reject or accept a Likert scale statement by using the average of participants, the mean of the data set, and the standard deviation. This method proved to be significantly beneficial in areas where factors were evaluated on scales, which corresponds with the objectives of this study, which consider the four factors identified

in the literature review (the *Community of Inquiry*, learning preferences, motivation, including self-efficacy, and learning personalities).

As a result, the mean (Equation 3) of the four factors is calculated as previously stated by the sum of all values divided by the total number of values, with each factor's sub-category considered. It is important to note that the calculation has been presented numerically in order to aid comprehension of these calculations (Yang *et al*., 2018).

$$\frac{\sum xi}{\mathrm{N}}$$

Equation 3. Formula to Calculate the Mean

(McLeod, 2019, Fig.2, p.2)

Where xi = The sum of all the data points (4+3+2 +1)

N = The number of all the data points (4)

The mean of the four factors to the nearest ten is:

$$\text{Mean} = \frac{4+3+2+1}{4} = M = 2.5$$

It is important to note that the data points in the above calculation are the four factors (the *Community of Inquiry,* learning preferences, motivation, including self-efficacy, and learning personalities) that influence teacher trainees' flipped learning experience. The confidence interval can now be calculated because the mean of the four factors has been determined.

Accordingly, based on Equation 2, the mean of the four factors is 'M = 2.5,' the '1.96 (95%)' confidence interval is the Z-value (Z), the 5% margin of error is the standard error (S), and the forty participants are the sample size (N). As a result, the formula will yield a 95% confidence interval within the forty participants, as shown below:

$$\text{Confidence Interval} = 2.5 \pm 1.96\frac{5}{\sqrt{40}}$$

$$= 2.5, 95\% \text{ CI } [0.951, 4.049]$$

As a result of the above-mentioned result, it is 95% certain that the confidence interval for the mean falls between 0.951 and 4.049. As a result, the formula will produce a 95% confidence level among the forty participants. According to this result, in order for a result based on the four factors (the *Community of Inquiry*, learning preferences, motivation, including self-efficacy, and learning personalities) that affect teacher trainees' experience in flipped learning that arose within the Likert scale statements to be valid and reliable, more participants must agree with the factor than those who disagreed with the factor in the context of the noted factor. This point of agreement and how it will be decided will be discussed further in Section 3.7 and the sub-sections provided within this section regarding the questionnaire analysis and the application of the calculation of central tendency and the confidence interval formula to the twenty-six Likert scale responses. The following section discusses and defines the main study's limitations and delimitations in order for this discussion to take place.

3.6. The Limitations and Delimitations of the Main Study

Research limitations are defined as factors that the researcher cannot control (Ross and Bibler Zaidi, 2019). There are flaws, circumstances, or factors beyond the control of a researcher that result in limitations that affect or influence the interpretation of research findings. This definition can be narrowed further to limitations in generalizability, application to practice, or use of the findings that are a result of how the researcher initially chose to design the study or the research design used to conduct it, which are typically discussed in the study's conclusion (Brutus, Aguinis and Wassmer, 2013; Schanzenbach, 2012; Hackshaw, 2008). Through the results of the pilot study, the potential limitations of the research design in terms of applicability and understandability, including limitations of validity and reliability, have been explored in this chapter. In addition to research limitations, there are limitations in the researcher's decisions that

define the scope of the study (Theofanidis and Fountouki, 2019; Schanzenbach, 2012). The research question, research design, reasons for choosing this study in GAU, Northern Cyprus, and the number of participants selected have all been discussed formally to this point in this study. Furthermore, this study has decided not to include nationality (or ethnicity) in the demographic data. This decision was made in response to Levitas *et al*. (2007)'s argument that ethnicity is a multifaceted, sensitive topic. Levitas *et al.* (2007) go on to argue that including a section directly related to ethnicity within a data collection tool (for example, a questionnaire) may elicit feelings of prejudice based on ethnicity or national descent. As a result, in order to maintain the study's ethical integrity, the participants' demographic information on age and gender (with the 'prefer not to say' option because of gender equality [Roberts, Smith, and Pollock, 2011]), study programme (ELT BA, MA, PhD, and PGCE), and study location (Northern Cyprus) are divided in the following paragraph.

As stated in the written informed consent form obtained for both the questionnaire and the interview, participants have the right to refuse to participate or withdraw from this study at any time (See forms in Appendices A and B). This study adheres to the guidelines for obtaining informed consent established by Roberts, Smith, and Pollock (2011), who state that, prior to participating in the study, the participant's permission should be obtained (prospectively). The participant must understand what the research is about and what they are consenting to in order to provide informed consent. A typical consent procedure for adults in higher education consists of two distinct stages:

In Stage One: ‘Giving Information,’ the individual evaluates the issue (research topic) offered. They are not obligated to respond immediately to the researcher.

In Stage Two: ‘Obtaining Consent,’ the researcher repeats the research conditions, usually presented as separate bullet points or sentences. Before agreeing to the study, the subject agrees to each item (consent) by stating their agreement in writing (for example, by signing their signature in the given blank space [Appendix B]).

Based on the guidelines of Roberts, Smith, and Pollock (2011), the aforementioned consent was graphically coded into the online questionnaire as shown in Appendix B, and the interview consent form was emailed to the respondent to sign before the interview

began (Appendix C). The main study of this research is examined in terms of the data collection process in the following section, which is based on the previously discussed research design of this study. This will also address the ethical considerations of data confidentiality based on the GDPR (2018) and the Great Britain Data Protection Act (2018), which will be discussed and defined in the following sections. It also describes the demographic characteristics of the main study's participants as well as the methods used to analyse the data.

3.7. The Data Collection Procedures

Section 3.3 looked at how the mixed method approach was built in relation to the data collection instruments used in this study, which included a questionnaire and an interview. This section discusses the main study of this research in terms of the data collection process, and then the ethical considerations of data confidentiality are discussed.

The main study of this research was conducted from 29th June to 31st August, 2021, based on ethical approval granted by the Faculty of Research Ethics at University of Greenwich on June 29th, 2021. Permission was obtained from the respective programme leaders to contact potential participants (GAU, through this mentioned ethical approval). The programme leader was asked to forward the initial recruitment email from this study to the potential participants and include them in the email's 'CC' (carbon copy). For reasons related to the General Data Protection Regulation, GAU programme leaders were advised to 'Bcc' (blind carbon copy) the registered email addresses of the participants (teacher trainees) (GDPR, 2018). In accordance with the British Psychological Society (BPS) ethical guidelines articulated by Krotoski and Oates (2017), the first email was used to recruit ten participants from each programme on a first-come, first-served basis (Appendix B). Participants who were recruited received a participant information sheet and an initial email (Appendix B), which also included information about the interview recruitment process as a follow-up to the questionnaire and a gateway to the Qualtrics (defined and disused below) questionnaire.

Krotoski and Oates (2017) articulated the BPS, which recommends the online Qualtrics software because it meets their guidelines for internet-mediated research. The software is an online questionnaire tool that enables researchers to create, distribute, and analyse questionnaire responses from a convenient online location (in line with COVID-19 restrictions). It is important to note that the data was collected via the Qualtrics link provided for questionnaire distribution and was automatically anonymised and stored on the researcher's password-protected private computer. As each participant received an automatic participant ID via the Qualtrics software, the data contained personal information (for example, demographic data) that was stored alongside the questionnaire data. This ID remained with the participant throughout the interview data analysis. The email addresses of the participants (those of the trainee teachers) were also included in the data in order to conduct a possible follow-up interview based on the questionnaire results.

Following the completion of the interview and data analysis, all participant email addresses and audio recordings were deleted, but the participant ID was retained to link to the questionnaire and associated interview. It is important to note that data will be retained for one year after the publication of this study in accordance with the provisions of the General Data Protection Regulation (GDPR, 2018) and the Great Britain Data Protection Act (2018) to support any further dissemination activities.

Moreover, considering the ethical considerations of this study, as mentioned above, participants' email addresses (student email) have been requested when completing the questionnaire (as shown in Appendix B). If a participant wished to withdraw from the questionnaire, their email address was used to identify the questionnaire responses to be deleted, and the participant was informed that this had been done. The Qualtrics software used in this study has a push-button data deletion feature in accordance with GDPR (2018) and the Great Britain Data Protection Act (2018), which provides participants with proof that their data has been deleted (Case, 2020). It is important to note that no participants withdrew from this study; all have responded accordingly.

Further to this, the semi-structured interviews (Appendix C) were conducted through Microsoft Teams (an online conferencing tool) invitations (which have the function of

inviting external guests [Case, 2020; Krotoski and Oates 2017]) by sending a 'join Microsoft Teams meeting' link to the selected participant through the email provided in the questionnaire; this email was deleted after the interview. The interview was recorded (including taking notes) based on the participant's consent, which they signed prior to the interview (See Appendix C: Interview Consent Form, *'I agree for my interview to be audio- recorded and written down in note form'*). The consented interview was recorded using an offline iPhone voice memo recorder and then transferred to the researcher's personal password-protected computer as an MP3 audio file through a USB cable. After the transfer, the data were deleted from the iPhone memo recorder; thus, no data were stored in the iPhone memo recorder or in Microsoft Teams. However, if participants wished to withdraw from the study after their interviews have been completed, their recorded interview files are accordingly deleted from the researcher's password-protected computer. And evidence is provided through a Windows 10 dialogue confirming the permanent deletion of their interview file.

Since ethical considerations concerning data confidentiality have been established, the following sub-sections will explore the demographics of participants (age, gender, programme of study) in terms of the questionnaire and the interview, including a description regarding the conduction processes of both.

3.7.1. The Questionnaire:

The questionnaire for this study was completed and disturbed through the dates of the 29th June 2021 till the 31st August 2021. This study took about two months to complete because many teacher trainees were attending online summer courses and conferences at the time of the study. According to the study's researcher, the questionnaire took at least fifteen to thirty minutes to complete. No one wanted to withdraw from the questionnaire while it was being administered, and no problems arose. This highlights the significance of conducting a pilot study to determine feasibility and minimize problems that may arise in the main study (van Teijlingen and Hundley, 2001). It is also worth noting that, as a

result of the COVID-19 pandemic preparation measures, these teacher trainees (participants) had no prior exposure to the method of flipped learning, nor did they have any experience with the method of solely Internet-based learning. This lack of prior experience with flipped learning is acknowledged first in the previously discussed teacher training programmes investigated in the study, as well as by Güzer and Caner's (2016) recommendation that teacher trainees be exposed to flipped learning based on their degree programmes. Secondly, through the findings and discussion of this study in Chapter 4, where the forty participants stated that: *'previously, we never used to be online and we never used to have technology courses*' (PhD ELT [Appendix I]).

Furthermore, Figures 6 and 7 show the demographics of the forty participants who completed the questionnaire in terms of age and gender, with ten teacher trainees from each course of study based on the reliability analysis, which states that at least ten participants are required per item of a scale (Boateng *et al*., 2018). The gender balance of the forty GAU participants is shown in Figure 6 as fourteen men and twenty-six women. Figure 7 also shows the age groups of the participants, which ranged from eighteen to forty-four years old, as no participant over forty-five years old took part in this study. It is important to note that the age groups were divided into eighteen to twenty-four, twenty-five to thirty-four, thirty-five to forty-four, and over forty-five years, in accordance with the American Academy of Paediatrics (2019) age categorisation and identification guidelines These two figures were created specifically for the study's visual clarity.

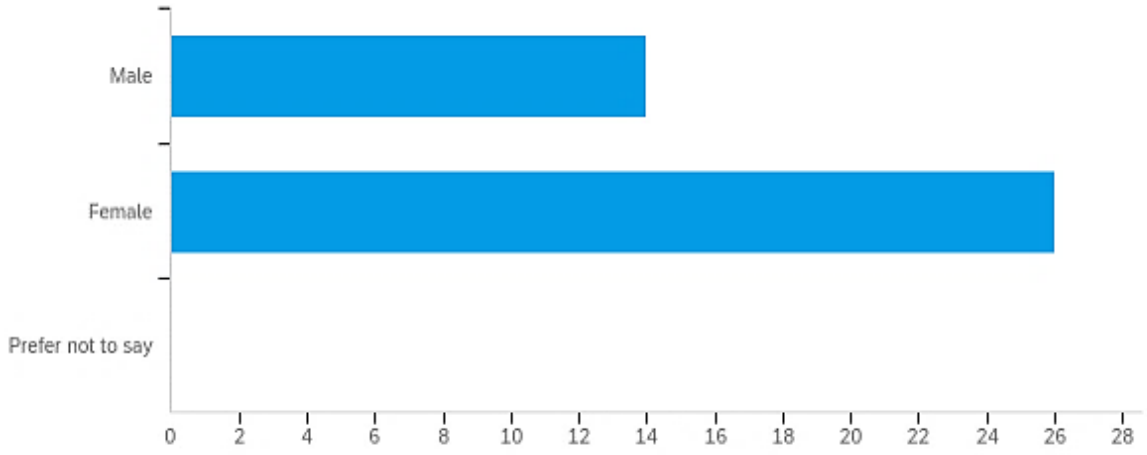

Figure 6. Gender Ratio of the Forty Participants in GAU (Fourteen Males and Twenty-Six Females)

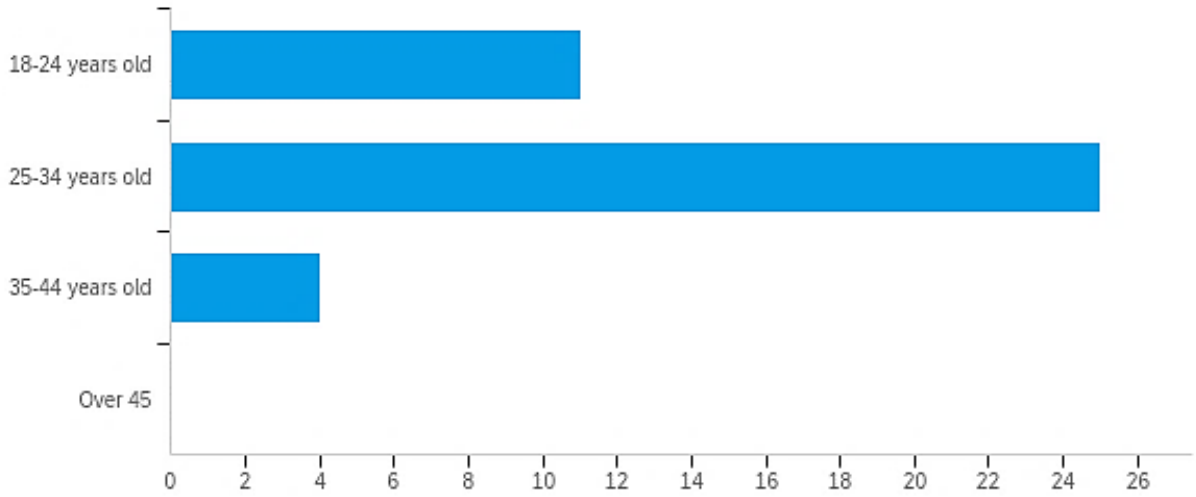

Figure 7. Age Groups of the Forty Participants in GAU

3.7.2. The Interview:

The interviews were conducted between 29th June 2021 and 31st August 2021 with fifteen participants who agreed to be interviewed. Fifteen participants were selected from the forty questionnaire respondents on a first-come, first-served basis (those who volunteered) by taking into account the rationale of Faulkner and Trotter (2017) and Braun and Clarke (2013) that qualitative studies require a sample size of at least twelve participants to achieve data saturation, which is, '[the] *point in the research process when no new information is discovered in data analysis, and this redundancy signals to researchers that data collection may cease'* (Faulkner and Trotter, 2017, p.2).

Table 3.10 presents the demographic data of these fifteen participants. The teacher trainee ID numbers are carried over from their assigned ID numbers in the questionnaire. Furthermore, the duration of each interview, ranging from closest to the nearest minute, with a minimum duration of five minutes to a maximum duration of nineteen minutes (including the date of the interview), has been provided in numeric form in Table 3.10 in order to aid the understanding and visuality of these durations (Yang *et al*., 2018). As previously noted in the pilot study, a collective total duration of time and date was noted to test the feasibility of the interview in terms of the reliability and validity of this study discussed to this point. The transcripts of the individual interviews are allocated via Appendix D to Appendix S for each teacher type from the four selected study programmes.

Table 3.10. Teacher Trainee Demographics for the Semi-Structured Interview (Main Study)

(ID numbers are carried on from the questionnaire)

Interview: Teacher Trainee: ID	**Programme of Study**	**Gender**	**Age (Years)**	**Date and Duration of the Interview**
2	BA ELT	Female	25-34	12/08/2021 17 minutes and 13 seconds
3	BA ELT	Male	25-34	12/08/2021 18 minutes and 30 seconds
5	BA ELT	Female	18-24	14/08/2021 19 minutes and 58 seconds
11	MA ELT	Male	35-44	12/08/2021 17 minutes and 30 seconds
15	MA ELT	Female	25-34	29/06/2021 16 minutes and 52 seconds
17	MA ELT	Female	25-34	26/08/2021 18 minutes and 33 seconds
19	MA ELT	Female	25-34	27/08/2021 12 minutes and 13 seconds
22	PhD ELT	Female	25-34	31/08/2021 18 minutes and 46 seconds
25	PhD ELT	Female	25-34	30/06/2021 10 minutes and 15 seconds
27	PhD ELT	Female	25-34	02/08/2021 15 minutes and 8 seconds

Interview: Teacher Trainee: ID	**Programme of Study**	**Gender**	**Age (Years)**	**Date and Duration of the Interview**
31	PGCE	Female	25-34	14/07/2021 18 minutes and 6 seconds
32	PGCE	Female	25-34	06/08/2021 6 minutes and 30 seconds
37	PGCE	Female	18-24	20/07/2021 17 minutes and 45 seconds
38	PGCE	Male	18-24	23/07/2021 5 minutes and 51 seconds
40	PGCE	Female	18-24	01/07/2021 11 minutes and 8 seconds

This study took handwritten notes during each interview, which were recorded and conducted using Microsoft Teams (discussed further in the upcoming ethical considerations section). According to Jamshed (2014), taking notes during an interview allows the interviewer to focus on the participant's perspective and lived experience when it comes to the proposed study. The interviewer's increased focus aids in the development of rapport and improves the relationship between participant and researcher. Taking handwritten notes allows for genuine interaction between the interviewee and the researcher and encourages the researcher to be highly reflective. According to Jamshed (2014), note-taking helps participants and researchers maintain important contact throughout data collection and analysis, resulting in a mutually respectful engagement

that is all too often lost when relying on more mechanical methods such as audio recordings and data transcripts. This was seen in this study's interview, for example, when a PhD ELT-teacher trainee verbalised gratitude with a thank-you note (Appendix D) by stating:

[Thank you] very much for listening. It's very hard to find people who understand this because when we try to tell our teachers they just say that we have to do it, and there is nothing else to do about it, which I find very difficult.

Additionally, Mfaume, Bilinga, and Mgaya (2018) state that taking notes allows the interviewer to identify and highlight important comments made by the participant at a time when the context of the participant's statements can be properly assessed and appreciated. The researcher in this study took handwritten notes to record nonverbal communication, such as facial expressions and hand gestures. According to Denham and Onwuegbuzie (2013), paying attention to nonverbal communication improves data interpretation. Through the analysis of the questionnaire and interview, this interpretation is further explored and discussed in Chapter 4 of this study. Following an examination of the demographic data and the implementation process of this main study, the sections that follow discuss the research instruments (SPSS and NVivo, as discussed below) and the rationale used to analyse the questionnaire and interviews of this study in preparation for the findings and discussion of this study in the following chapter.

3.7.3. The Analysis of the Questionnaire

The quantitative (numeric) data from the questionnaire's twenty-six statements about the Likert scale discussed in this current chapter were analysed using the software SPSS Statistics Version twenty-six (Liu *et al*., 2012). This software's primary goal is to investigate empirical findings in the social sciences in relation to quantitative data (Arkkelin, 2014). Many researchers (for example, Ong and Puteh, 2017; Hinton, McMurray, and Brownlow, 2014; Landau and Everitt, 2004) recommend it for efficient

data analysis in terms of time and human error. This current chapter has established the foundation for this study's reliability and validity by using the 'confidence interval formula' (Equation 1) at 95%. It is important to note that, as a result of the ordinal nature of the Likert scale, the use of descriptive statistics to analyse Likert scale questions has been frequently criticized by numerous studies (for example, Iam, 2019; Liu and Jiang, 2018). However, Sofyan *et al*. (2020) discovered that using the average and standard deviation, it is possible to make definitive decisions on whether to disagree or agree with a Likert scale statement. This approach proved to be significantly beneficial in areas where factors were evaluated on a scale, which corresponds with the objectives of the current study, which takes four factors into account. As a result, the questionnaire data based on this correlation was analysed solely through these means.

The questionnaire was designed with the four flipped learning factors in mind. The four factors of 'the *Community of Inquiry*,' 'learning preferences,' motivation (including self-efficacy), and 'learning personalities' are treated as parent factors in order to analyse the results. The rationale for this parent factor stems from each of the four factors discussed in Chapter 2's literary review, as well as the types of these factors presented as sub-categories, as shown in 'Table 3.11. Example of Parent Factor and Sub-Category Identification' below.

Table 3.11. Parent factor and Sub-Category Identification

Parent Factor	**Sub-Category Identification**
Garrison (2017)'s Community of Inquiry	1-Social Presence, 2- Teaching Presence 3- Cognitive Presence
Learning Preferences	1-Visual Learners 2-Aural Learners 3- Kinaesthetic Learners 4- Haptic Learners, 5- Print Learners, 6-Interactive Learners 7- Olfactory Learners
Motivation (including Self-efficacy)	1- Intrinsic motivation 2- Extrinsic motivation 3- Self-efficacy
Learning Personalities	1- Extraverted Thinking Types 2- Introverted Thinking Types 3- Extraverted Feeling Types 4- Introverted Feeling Types 5- Extraverted Sensation Types 6- Introverted Sensation Types 7- Extraverted Intuitive Types 8- Introverted Intuitive Types

As a result, the four factors (the *Community of Inquiry*, learning preferences, motivation, and learning personalities) that affect teacher trainees' experience in flipped learning were divided into parent factors and sub-factors based on the reliability and validity analysis of this questionnaire analysis for this study, using the 95% confidence interval regarding

the calculation of the central tendency (the calculation of the mean in this study). Table 3.12 provides an example of this division based on Likert scale statements.

Table 3.12. Example of Parent factor and Sub-Category Identification

No.	**Likert Scale Statement**	**Parent Factor and Sub-Category Identification**
Q1	I enjoy using flipped learning because I find it fun to learn with	**Parent Factor:** Motivation ⬇ **Sub-category:** Intrinsic Motivation

The following table format (Table 3.13) was used in the analysis of this quantitative study conducted using SPSS version twenty-six to illustrate the findings of this study by dividing the above four factors that affect teacher trainees' experience in flipped learning into parent and sub-category identification. This analysis is based on using the descriptive statistics function available in SPSS through the rationale presented and explained in Table 3.12, along with the discussed 'good' result of this study's Cronbach's Alpha reliability (George and Mallery, 2003), represented in Table 3.9.

Table 3.13. Example of Parent factor and Sub-Category Identification (Analysis)

No.	**Factor**	**Mean ± Standard Deviation**	**Response**

Within Table 3.13, first: 'no.' is the given Likert statement's assigned question number; second: 'factor' is the sub-category of the parent factor; for example, motivation is a parent factor, and intrinsic motivation is the sub-category of this parent factor (as shown above in Table 3.12). Third, the mean ± standard deviation calculation consists of a two-part calculation noted as (A) and (B) below by taking 'Q1' in Table 3.12 as an example and presented in a numeric form in order to aid the understanding of these calculations (Yang *et al*., 2018).

(A) The 'mean' in which the average of forty participants is taken is calculated by adding all the responses chosen based on the five-point Likert scale consisting of Strongly agree (1), Somewhat agree (2), Neither agree nor disagree (3), Somewhat disagree (4), and Strongly disagree (5).

Accordingly, the mean for 'Q1' in Table 3.12 is calculated by dividing the sum of all data points (sum of chosen Likert scale points) by the number of the forty participants who responded (count). The mean was calculated by:

Step One: adding all the response points for 'Q1' in Table 3.12:

$\sum xi=1+5+4+1+4+2+5+5+5+4+5+5+5+4+4+3+4+3+4+5+3+5+5+1+5+4+5+5+4+4+4+3+4+4+4+5+3+5+3+4 = 158$

Step two: dividing by the count of responses:

$158/40 = 3.95$, therefore, the mean = 3.95

Since the mean has been found, the next step concerning the standard deviation calculation can now be carried out. It is important to note that the plus-minus sign (±) was used as a separator in Table 3.12 for the mean and the standard deviation, since the mean can either be less than the standard deviation or greater than the standard deviation. This

helps in estimating the range of values, shown below in the standard deviation calculation.

(B) The standard deviation based on the 95% confidence interval was calculated using Equation 3 below in the following steps for 'Q1' (Table 3.12):

$$\sqrt{\frac{1}{N}\sum_{i=1}^{n}(xi - x)^2}$$

Equation 4. Standard Deviation Formula

(Ayeni, 2014, p.7)

Step one: take the difference between each point and the mean, then square the answer. $(1\text{-}3.95)^2 + (5\text{-}3.95)^2 + (4\text{-}3.95)^2 + (1\text{-}3.95)^2 + (4\text{-}3.95)^2 + (2\text{-}3.95)^2 + (5\text{-}3.95)^2 + (5\text{-}3.95)^2 + (5\text{-}3.95)^2 + (4\text{-}3.95)^2 + (5\text{-}3.95)^2 + (5\text{-}3.95)^2 + (5\text{-}3.95)^2 + (4\text{-}3.95)^2 + (4\text{-}3.95)^2 + (3\text{-}3.95)^2 + (4\text{-}3.95)^2 + (3\text{-}3.95)^2 + (4\text{-}3.95)^2 + (5\text{-}3.95)^2 + (3\text{-}3.95)^2 + (5\text{-}3.95)^2 + (5\text{-}3.95)^2 + (1\text{-}3.95)^2 + (5\text{-}3.95)^2 + (4\text{-}3.95)^2 + (5\text{-}3.95)^2 + (5\text{-}3.95)^2 + (4\text{-}3.95)^2 + (4\text{-}3.95)^2 + (4\text{-}3.95)^2 + (3\text{-}3.95)^2 + (4\text{-}3.95)^2 + (4\text{-}3.95)^2 + (4\text{-}3.95)^2 + (5\text{-}3.95)^2 + (3\text{-}3.95)^2 + (5\text{-}3.95)^2 + (3\text{-}3.95)^2 + (4\text{-}3.95)^2 = 52.9$

Step two: dividing by 'N' (count) = 52.9/40 = 1.32.

Step three: square root of step two = $\sqrt[2]{1.32}$.

Thus, the standard deviation for 'Q1' in Table 3.11 is = 1.15.

As a result, the mean ± standard deviation for 'Q1' in Table 3.12 is: 3.95 ± 1.15.

This means that 'Q1' in Table 3.12, is disagreed with by the participants, as the rationale for the five-point Likert scale are as aforementioned: Strongly agree (1), Somewhat agree

(2), Neither agree nor disagree (3), Somewhat disagree (4), and Strongly disagree (5). Therefore, a mean value less than three indicates acceptance from the participants, and values greater than three show that the participants rejected the statement. The use of the mean is to ensure that all forty responses are taken into account and that the majority decision can be evaluated within the 95% confidence interval regarding reliability and validity discussed within this chapter.

Since the parent factor and sub-category identification (analysis) rationale has been presented, the descriptive statistics of this analysis conducted using SPSS version twenty-six are presented in Table 3.14 to illustrate the findings of this study. These descriptive statistics will be discussed and analysed further in the study's upcoming Chapter 4.

Table 3.14. Descriptive Statistics of this Study

	N	Minimum	Maximum	Mean	Std. Deviation
Q1	40	1.00	5.00	3.9500	1.15359
Q2	40	1.00	4.00	1.7750	.86194
Q3	40	1.00	5.00	3.1750	1.25856
Q4	40	1.00	5.00	2.9250	1.36603
Q5	40	1.00	5.00	3.3500	1.18862
Q6	40	1.00	5.00	1.8250	1.21713
Q7	40	1.00	5.00	1.3750	.86787
Q8	40	1.00	5.00	1.3500	.89299
Q9	40	1.00	5.00	1.5250	1.06187
Q10	40	1.00	5.00	1.4500	.93233
Q11	40	1.00	5.00	2.1000	1.10477
Q12	40	1.00	5.00	2.0250	1.29075
Q13	40	1.00	5.00	3.4750	1.15442
Q14	40	2.00	5.00	3.9750	.97369
Q15	40	1.00	5.00	1.2750	.78406
Q16	40	1.00	5.00	1.4500	.90441
Q17	40	1.00	5.00	1.7500	1.05612
Q18	40	1.00	5.00	1.8750	1.04237
Q19	40	1.00	5.00	3.6250	1.21291
Q20	40	1.00	4.00	2.0500	1.13114

Q21	40	2.00	5.00	3.9000	1.05733
Q22	40	1.00	5.00	3.7750	.99968
Q23	40	1.00	5.00	3.9250	1.18511
Q24	40	1.00	5.00	1.7500	.95407
Q25	40	1.00	5.00	1.7750	1.02501
Q26	40	1.00	5.00	1.8250	1.05945

3.7.4. The Analysis of the Interview and Open-ended Questions

The semi-structured interview (Appendix C) and open-ended qualitative sections of the questionnaire (Appendix B) were transcribed (semi-structured interview) and grouped (qualitative sections of the questionnaire) into a password-protected Microsoft Word document before being thematically coded using the NVivo Version 20 software. This software enables the researcher to establish links between thematic codes, research questions, and the literature (Maguire and Delahunt, 2017; King, 2004). The following will first discuss the rationale for the processes used by this study in using NVivo to generate the emergence of the themes of the data results discussed in the upcoming Chapter 4 in relation to Lumivero (2023) and Allsop *et al.* (2022) conjoined NVivo guidelines on how to approach thematic analysis based on Braun and Clarke's (2006) thematic analysis. First, it is important to note that Braun and Clarke (2006), argue that the process of identifying trends or themes in qualitative data is part of the social science field of educational research. They also acknowledge that this is the first qualitative approach that should be used, as *'[it] offers essential skills that can be useful in many other forms of research'* (p.78). Another advantage, particularly in terms of learning and teaching, is that it is a technique rather than a tactic (Braun and Clarke 2013; 2006).

According to Maguire and Delahunt (2017), this advantage implies that, unlike many qualitative techniques, it is not tied to a specific epistemological or ideological viewpoint.

As a result, it is a very flexible method, which is extremely valuable given the diversity of work in education in terms of teaching and learning. This flexibility and diversity factor is, first and foremost, consistent with the interpretivism paradigm of this study, which, as previously stated, focuses on the experiences of individuals, specifically how a particular phenomenon is viewed and decoded (interpreted) by them, individually or socially, in a specific external context (Pham, 2018; Chowdhury, 2014; Berger and Luckmann, 1966).

Second, it is consistent with the overarching paradigm of interpretivism, which advocates the use of mixed methods in research studies to avoid arguing about 'reality and truth,' and which offers (accepts) a different focus on 'what works' as the truth about the phenomenon under study, disagreeing choices associated with theoretical perspective wars about which methodology design is the 'superior' method (Pham, 2018; Dalsgaard, 2014).

Based on Maguire and Delahunt's (2017) argument above for the interpretivist paradigm and positivist theoretical perspective discussed throughout this chapter, Braun and Clarke's (2006) definition of thematic coding draws on their six-phase framework for conducting thematic analysis (Table 3.15), which is explained below.

Table 3.15. Braun and Clark's (2006) Six-Phase Framework for Completing a Thematic Analysis

(Maguire and Delahunt, 2017, p.4)

Step One: Become Acquainted with the Results	Step Four: Evaluate Themes
Step Two: Create Initial Codes	Step Five: Illustrate Themes
Step Three: Search for Themes	Step Six: Report

Step one, becoming acquainted with the results, consists of understanding and re-reading the interview transcripts and taking notes.

Step two, creating initial codes, concentrates on arranging interview and qualitative sections of a questionnaire in a meaningful and structured way based on the main themes of this study and the research concerns discussed to this point.

Step three, theme searching, is based on a sequence that captures specific information that is important or interesting about the data and the analysis question. As Braun and Clarke (2006) point out, there are no rules about what constitutes a theme. A theme is distinguished by its meaning. At the end of this phase, the theme 'codes' should be grouped into topics that illustrate something concrete about the research questions under investigation.

Step four, the evaluation of themes, is based on modifying and improving the preliminary themes found in Step three through clarification. In this stage, it is helpful to collect all the data that are relevant to each theme. Braun and Clark (2006) suggest colour-coding themes to help the researcher reach a conclusion quickly by highlighting some parts of the 'word' that are related to key positions and research questions in the report.

Step five, illustrating the themes, is about the final refinement of the themes through thematic mapping in educational research (a form of map showing the pattern of themes in a particular topic). The main aim of this step and the use of a thematic chart is to *'[identify] the significance of what each theme is about'* (Braun and Clarke, 2006, p.92), in terms of, *'[what] does the theme suggest about it? If there are sub-themes, how do they correlate and connect to the main theme? How are they going to relate to each other?'* (Braun and Clarke, 2006, p. 92; Maguire and Delahunt, 2017, p. 8). Finally, Step six, 'report,' focuses on the writing of an analysis, which will be discussed in Chapter 4 through the analysis and results of this study.

In accordance with Allsop *et al.* (2022) and their NVivo guidelines for this framework, the processes undertaken by this study in using NVivo to generate the emergence of the themes of the data results as noted for the following data discussion chapter were carried out in the following steps:

Step 1: The research question was reviewed and imported into the NVivo software for reference.

Step 2: The audio extracts were transcribed from the interview as a word document and imported into NVivo to use the memo feature to take note of key points that relate to the study's research question. For instance, a stated learning factor influenced the teacher trainee's perception of their flipped learning experience.

Step 3: This study then created a research memo journal to group these key points and identify themes within these memos.

Steps 4 and 5: This study then created initial codes based on these themes and then began coding using a mind map, as shown in Figure 8.

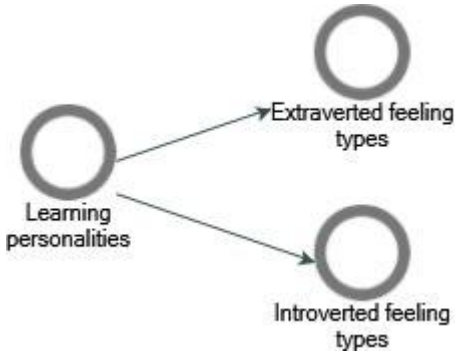

Figure 8. Example of a Mind Map of this Study's Thematic Coding

Step 6: The data discussion report was written.

Since this section established the method of analysis of the semi-structured interview and the qualitative sections of the questionnaire through thematic coding and the research tool used (NVivo), the following two sections will first visit the ethical considerations of this study and then offer a chapter summary.

3.8. The Ethical Considerations of this Study

Ethics is a mandatory component of research; it is the choice between what is acceptable and what is not in research; however, it is not that simple (Kaptein and Wempe, 2002). Research often requires a high degree of cooperation and organisation between different people and organisations. Therefore, it is not enough to simply decide what is 'right' or 'wrong'. Studies should promote principles that are essential to maintaining a collaborative, trusting, accountable, mutually respected, and fair research environment (Roberts, Smith and Pollock, 2011; Tenbrunsel and Smith-Crowe, 2008). In recognition of these factors, this study draws on the British Educational Research Association

(BERA) (2018) guidelines regarding ethics in research, which state that:

[Educational] researchers should operate within an ethic of respect for any persons - including themselves - involved in or touched by the research they are undertaking. Individuals should be treated fairly, sensitively, and with dignity and freedom from prejudice, in recognition of both their rights and of differences arising from age, gender, sexuality, ethnicity, class, nationality, cultural identity, partnership status, faith, disability, political belief, or any other significant characteristic (BERA, 2018, p. 3).

The ethical considerations of this study are discussed in the following paragraphs by first considering the ongoing COVID-19 pandemic and its impact on participants, as well as the ethical implications of this study's insider research stance discussed in the introductory chapter and in the following sub-section. Finally, this section looks at the rights of participants and discusses data protection.

The COVID-19 outbreak that started in March 2020 in Northern Cyprus was still ongoing during the pilot study discussed in this chapter and was expected to continue during the main study of this study (December 2020 to August 2021). Therefore, the original plans for this study had to be changed. Northern Cyprus closed all physical sites and switched to solely virtual teaching media to ensure the safety of students and staff and permit the continuation of teaching and learning (Cyprus Ministry of Education and Culture, 2020). Therefore, this study followed the recommendation of the BERA (2020) for educators and researchers to follow the proposed *'COVID-19: Guidance for Education Settings'* established by Public Health England (2020) in collaboration with the BERA (2020). The guidance takes into account the safety and psychological wellbeing of students (teacher trainees as participants in this study) and is used within this study on the basis that this study is conducted by a researcher in the United Kingdom. The guidelines primarily advise:

1. *'Social distancing between teachers and students (Participants), for example, the usage of virtual platforms.'*

2. *'Online support tools for academic study and online wellbeing support for students (participants), provided by their academic institutes.'*
3. *'Following medical advice issued by the government (Not unreliable sources).'*

(Public Health England, 2020, p.2)

This study follows the guidelines established by Public Health England (2020) by avoiding face-to-face social contact and administering this study's questionnaire and interviews online, as discussed in this chapter. This study also considers that the psychological well-being of teacher trainees (participants) may be affected during this period, as they may isolate themselves or even be unfortunate enough to be exposed to COVID-19. In this regard, this study recognises that while participants are 'virtually' and remotely engaged with their studies, they may not wish to participate in this research and have every right either not to participate or to withdraw from this study at any time (as indicated in the participant consent form for this study [Appendices C, D, and E]). Within this study, such a case of withdrawal did not occur; therefore, this study did not engage with this type of withdrawal. If such a case were to occur, it is also important to note that even before the onset of COVID-19, participants (teacher trainees) had the right to refuse to participate in this study or to withdraw from it at any time. This is evident from the written consent form (Appendices C, D, and E) obtained for both the questionnaire and the interview, which contain a clear indication of set dates for withdrawal, for example, '*You may withdraw from this project at any time you wish to until the project completion date of the 31st of August 2021,'* and a clear statement in the letter of consent that references this right to withdrawal, for example*, 'If you wish to withdraw from this study, you may do so anytime you wish. You will not be questioned on the reason why you have withdrawn.'*

Accordingly, the noted consent form was integrated into the online questionnaire through graphic coding, and the interview consent form was emailed to the respondent to sign before the interview began by using the British Psychological Society's (BPS) ethical guidelines for internet-mediated research elaborated by Krotoski and Oates (2017), which state:

[Information] sheets should explain in advance the purpose of the study and the true nature of the questions that follow. This includes the fact that valid consent is given when the questionnaire/interview has been completed by the participant by (for example) responding to an explicit consent form (Offered both at the beginning and at the end of the procedure) by ticking the box that the questionnaire/interview has been completed by the participant. For example, how the information will be disseminated and data protection rights, including withdrawal rights (Krotoski and Oates, 2017, 2017, p.3).

3.8.1. Positionality

The researcher was an educator in the training of teacher trainees in flipped learning and a teacher trainee in this type of learning in GAU, Northern Cyprus. Many researchers (for example, Pham, 2018; Hackett *et al*., 2008) would argue that this factor could be a source of conflict of professional interest, defined as the vested interests of an individual or organisation that raise questions about whether their conduct, judgement, and decision-making in research can be impartial (Pham, 2018). However, Pham (2018) and Chowdhury (2014) refute this claim with the counterargument that the researcher is part of what is being studied. The researcher and the subject being studied are thus inextricably linked. The researcher influences and is influenced by the social phenomena they study (Tekin and Kotaman, 2013). Consequently, the process of analysis involves the researcher and the aspect under study (Brannick and Coghlan, 2007). This reflexivity (defined below) is brought to bear in the analysis of this study, in which the researcher explores and interprets the perceptions of the participants (teacher trainees) about what factors shape their experiences of flipped learning discussed in the literature review. Reflexivity, according to Braun and Clarke (2013), is the critical engagement with the research process and personal responsibility as a researcher within this process.

Accordingly, this reflexivity is exemplified by the dichotomy of 'insider and outsider researchers'. Gair (2012) suggests that the terms ‘insider’ and ‘outsider’ status can be understood to refer to the extent to which the researcher is insider or outside of the

community or organisation under study (as a member). Insider researchers appear to have extensive experience of the community because they observe from both an insider and an outsider perspective, while outsider researchers do not have intimate knowledge of the group under study until they reach the context of the study (Griffith, 1998).

Historically, insider research has been conducted in ethnographic studies in 'sociology and anthropology' (Hellawell, 2006). However, as more scholars engage with their practice in education, insider study methods have become increasingly popular. For example, as demonstrated in studies by Floyd and Arthur (2012); Brannick and Coghlan (2007) and Mercer and Littleton (2007), according to Fleming (2018), a variety of methods can be used to conduct insider research, including but not limited to case studies, action research, and ethnography. Fleming (2018) further notes that the insider status of the researcher also determines the type of study, the type of data collected, and the type of data analysis discussed in this chapter.

In most cases, insider researchers in higher education are academic staff who are immersed in and deeply connected to the world of education and others who take place in this world, within a shared space where they routinely collaborate (Smyth and Holian, 2008). Insider research is often used to try to improve practice by understanding, controlling, and changing the path and role of others (Dwyer and Buckle, 2009). Many researchers (for example, Pham 2018; Savvides *et al*., 2014) note that having a member of an academic staff researching, both as a member of the academic staff or faculty and as an insider researcher, opens up a range of possibilities that can have a significant impact on the individuals involved, be they students, other staff, or educational institutions. For this reason, as an insider researcher study, the researcher chose the research context of GAU, Northern Cyprus, to provide an emancipatory response to teacher trainees' concerns about their relationship to flipped learning within the context of Northern Cyprus educational policies (discussed in more detail in Chapters 4 and 5), without compromising the ethical precautions of this study. In order to take advantage of the above-mentioned benefits of insider research by contributing to an understanding that directly relates to and is applicable to practice (as explored in Chapter 1). On this basis, to not compromise the ethical caveats of this research, although the researcher of this study has previous experience as an educator at

GAU, the researcher has been formally enrolled at University of Greenwich (UoG) in the United Kingdom since October 2019 as a PhD student. Therefore, the researcher of this study does not have access to previous student emails from GAU, as the researcher of this study is neither a teacher nor a student at GAU. In addition, the researcher of this study's previous access as an employee and student of GAU has been terminated since the researcher joined the UoG under the General Data Protection Regulation 2018 (GDPR) (See the GDPR, 2018 and the Great Britain Data Protection Act, 2018).

Therefore, in accordance with all that has been stated, the teacher trainees that have participated in this study will be teacher trainees that have no association with the researcher of this study, having undertaken their flipped learning course (taught by other programme leaders) as of January 2021. All of this information has been verified by the ethical approval gained to carry out this study in Northern Cyprus through the Faculty Research Ethics Committee at University of Greenwich on 16th September 2020 for the pilot study and 29th June 2021 for the main study. With this last point, the ethical considerations of this study have been discussed in detail. The next section will provide a summary of the current chapter.

3.9. The Summary of the Chapter

The methodology in relation to the research design of this study was described in this chapter using the overarching paradigm of interpretivism with aspects of positivism as a theoretical perspective in relation to the main research question. The data collection instruments were discussed in terms of their design and analysis using exploratory sequential mixed methods (Creswell and Clark, 2007). In light of the discussion of data collection tools, the validity, reliability, and ethical considerations of this study, including a pilot study, were also discussed. Furthermore, based on the context of GAU described in Chapter 2, participant demographics were presented. As a result, the methodology has been thoroughly established. This methodology will be used to discuss the analysis and findings in the following chapter.

CHAPTER 4: DATA ANALYSIS AND DISCUSSION

4.1. Overview

This chapter delves into the findings of this study by starting with a discussion of the mixed method analytical procedure for the questionnaire and semi-structured interview analysis. The chapter then presents the outline and discussion of this analytical procedure. The interpretation of the qualitative and quantitative data follows. The research question (restated below) is then answered by connecting the qualitative and quantitative findings of the factors influencing teacher trainees' flipped learning experiences. Following the linking of the results to identify these factors, the chapter then provides suggestions for these identified factors to assist teacher trainees in flipped learning. Finally, a chapter summary is provided.

The Main Research Question:

What are teacher trainees' perceptions of the factors that affect their flipped learning experience in Girne American University?

4.2. Findings Concerning the Factors that Affect Teacher Trainees in Flipped

Chapter 3 discussed the methodology of this study's research design, leading up to the eventual adoption of exploratory sequential mixed methods (Creswell and Clark, 2007) for the sole purpose of data collection. Further to this, Creamer (2018) and Creswell and Clark (2007) argue that there is no single recommended technique for identifying, comparing, and merging thematically related outcomes using more than one source or type of data. Creamer (2018) and Creswell and Clark (2007) have recommended using the 'linking' mixed method analytical procedure for case studies to assist researchers in their data analysis by increasing the overall reliability of their case studies (discussed in Section 3.5) by overcoming arguments made against their data analysis in terms of transferability, defined as the extent to which findings can be applied in other contexts and studies (Schloemer and Schröder-

Bäck, 2018). The following sub-sections explore and revisit the methodology chapter to bring into light, in summary, how the quantitative and qualitative data were analysed, leading up to the eventual representation of the above-mentioned linking of the linked data analysis representation.

4.2.1. Quantitative Data

Chapters 2 and 3 discussed the four factors that affect teacher trainees (the *Community of Inquiry*, learning preferences, motivation, including self-efficacy, and learning personalities). Within Chapter 3, the quantitative portion of the questionnaire consists of twenty-six Likert scale statements that were designed in response to the four aforementioned factors affecting teacher trainees (Table 4.1 has revisited these twenty-six Likert scale statements by grouping them into parent factors and sub-category identifications, based on the rationale explored in Chapter 3 that the four factors of *'The Community of Inquiry*,' 'learning preferences,' and 'learning preferences.' The rationale for this parent factor stems from each of the four factors discussed in Chapter 2's literary review, as well as the sub-categories of these factors.

Table 4.1. Parent Factor and Sub-Category Identification of the Likert Scale Statements

No.	Likert Scale Statement	Parent Factor and Sub-Category Identification
Q1	I enjoy using flipped learning because I find it fun to learn with.	**Parent Factor:** Motivation ⬇ **Sub-category:** Intrinsic Motivation
Q2	I only engage in flipped learning, as it is a mandatory part of my course	**Parent Factor:** Motivation ⬇ **Sub-category:** Extrinsic Motivation

Q3	Flipped learning increases a student's (teacher trainees') technical ability.	**Parent Factor:** Motivation ⬇ **Sub-category:** Self-efficacy Expectation
Q4	I enjoy learning with visuals (graphs and pictures) instead of written text.	**Parent Factor:** Learning Preferences ⬇ **Sub-category:** Visual Learners
Q5	I comprehend information in an audio format (online) within flipped learning more effectively.	**Parent Factor:** Learning Preferences ⬇ **Sub-category:** Aural Learners
Q6	The isolation factors of flipped learning do not motivate me.	**Parent Factor:** The *Community of Inquiry* ⬇ **Sub-category:** Social Presence

No.	**Likert Scale Statement**	**Parent Factor and Sub-Category Identification**
Q7	The lack of body movement in the online media of flipped learning demotivates me.	**Parent Factor:** Learning Preferences ⬇ **Sub-category:** Kinaesthetic Learners
Q8	The lack of hands-on activities within flipped learning demotivates me.	**Parent Factor:** Learning Preferences ⬇ **Sub-category:** Haptic Learners
Q9	I prefer to learn with printed materials, reading books, and a	**Parent Factor:** Learning Preferences ⬇

	whiteboard for writing instead of flipped learning.	**Sub-category:** Print Learners
Q10	I prefer to engage in authentic discussions and ask questions in real life instead of digitalised (typed) discussions and answers online.	**Parent Factor:** Learning Preferences ⬇ **Sub-category:** Interactive Learners
Q11	The lack of correlating tasting and smelling senses with my learning within flipped learning demotivates me.	**Parent Factor:** Learning Preferences ⬇ **Sub-category:** Olfactory Learners
Q12	I prefer to work and make choices on my own. Thus, mandatory peer work within flipped learning demotivates me.	**Parent Factor:** Learning Personalities ⬇ **Sub-category:** Introverted Thinking
Q13	Flipped learning provides an environment for unbiased learning and facts.	**Parent Factor:** Learning Personalities ⬇ **Sub-category:** Extraverted Thinking
Q14	Flipped learning is concerned with the wellbeing of all students and creates a positive social environment.	**Parent Factor:** Learning Personalities ⬇ **Sub-category:** Extraverted Feeling

No.	Likert Scale Statement	Parent Factor and Sub-Category Identification
Q15	Flipped learning prevents a teacher from giving efficient feedback individually.	**Parent Factor:** The *Community of Inquiry* ⬇ **Sub-category:** Teaching Presence
Q16	Flipped learning disregards individual learning in terms of learning needs.	**Parent Factor:** Learning Personalities ⬇ **Sub-category:** Introverted Feeling
Q17	Flipped learning does not simulate present-time learning by using the five senses efficiently.	**Parent Factor:** Learning Personalities ⬇ **Sub-category:** Extraverted Sensation
Q18	Flipped learning does not simulate reminiscing past events in learning by using the five senses efficiently.	**Parent Factor:** Learning Personalities ⬇ **Sub-category:** Introverted Sensation
Q19	Flipped learning stimulates swift brainstorm sessions that enable a student to see links between them and events.	**Parent Factor:** Learning Personalities ⬇ **Sub-category:** Extraverted Intuitive
Q20	Flipped learning does not allow students to gain their insights autonomously.	**Parent Factor:** Learning Personalities ⬇ **Sub-category:** Introverted Intuitive
Q21	The selected content on my flipped learning course provides me with a better understanding.	**Parent Factor:** The *Community of Inquiry* ⬇ **Sub-category:** Cognitive Presence

No.	Likert Scale Statement	Parent factor and Sub-Category Identification
Q22	Flipped learning has helped my critical thinking skills progress even further than before.	**Parent Factor:** The *Community of Inquiry* ⬇ **Sub-category:** Cognitive Presence
Q23	My teacher has designed a flipped learning course that has established meaningful learning for me.	**Parent Factor:** The *Community of Inquiry* ⬇ **Sub-category:** Teaching Presence
Q24	I feel pressured when logging into the flipped learning platform.	**Parent Factor:** The *Community of Inquiry* ⬇ **Sub-category:** Social Presence
Q25	The discourse that occurs within flipped learning is meaningless to me.	**Parent Factor:** The *Community of Inquiry* ⬇ **Sub-category:** Social, Teaching and Cognitive Presences Combined
Q26	Overall, I never want to retake another flipped learning course.	**Parent Factor:** The *Community of Inquiry* ⬇ **Sub-category:** Social, Teaching and Cognitive Presences Combined

Furthermore, as mentioned in Chapter 3, the analysis of the twenty-six Likert scale statements of the questionnaire, based on the five-point Likert scale, employs a confidence interval of 95% for the calculation of the central tendency (calculating the mean). This calculation is based on the rationale that a mean value on this five-point Likert scale of less than three indicates participant acceptance (agreement), while values greater than three indicate participant disagreement with the Likert scale statement (McLeod, 2019). The use of a mean value as a reminder ensures that all forty participants are considered and that the majority decision can be evaluated within the 95% confidence interval.

4.2.2. Qualitative Results

NVivo (R-1) software was used to analyse the qualitative data (interview transcripts and open-ended questions) (version twenty). All transcripts and open-ended questions were imported into NVivo as separate files (Appendices F–U). The open-ended questions were integrated into the initial codes of the interview questions according to the rationale provided by Braun and Clarke's (2006) thematic analysis, in accordance with the rationale provided in Chapter 3 and how this study explored and interpreted these themes to come to be.

It should be noted that, while the researcher for this study was taking notes to obtain the nonverbal cues mentioned in Chapter 3, it was difficult to take note of any nonverbal communication, such as hand or facial gestures, because of either the low-resolution video quality or the researcher's inability to see the participant in full frame. This limitation is discussed further in Chapter 5 of this study.

In Table 4.2, all the themes are described, along with their initial codes. Within this table, 'themes' refers to the qualitative data's emerging theme; 'initial code' refers to the code specified by the participants, 'frequency' refers to the number of times this code has occurred; and proof of this initial code is provided from the interview transcripts as a 'representative statement' taken from the Appendices (F-U). To avoid data redundancy, the open-ended responses have been coded into the 'initial codes' and 'frequencies' within this format. Mariko and Mari (2016) define data redundancy *'[to] being redundant, in terms of prominence, cohesion, logicality, and coherence'* (Mariko and Mari, 2016, p.1). Moreover, Marko and

Mari (2016) note that data redundancy diminishes the heightening awareness of a data result and the emerging theme that has occurred.

Table 4.2. Thematic Analysis Format of the NVivo Analysis

Themes	Initial Codes	Frequency	Representative Statements from the Interviews

Furthermore, to assist the reader in navigating the qualitative interpretation of the results, the study's researcher labelled each participant with an alphabetical letter and noted the associated transcript location for each participant who has been assigned an alphabetical categorisation in Table 4.3. Appendix S contains the responses to open-ended questions from the forty participants.

Table 4.3. Interviewee's Participant Letter and Transcript Location

Participant Letter	**Transcript Location**
PA	Appendix D
PB	Appendix E
PC	Appendix F
PD	Appendix G
PE	Appendix H
PF	Appendix I
PG	Appendix J
PH	Appendix K
PI	Appendix L
PJ	Appendix M
PK	Appendix N
PL	Appendix O
PM	Appendix P
PN	Appendix Q
PO	Appendix R
The Given Open-ended Question Results are Allocated in Appendix S	

4.3. The Linked Quantitative and Qualitative Data Results

Through the above sections, it was explored in summary how the quantitative and qualitative data were analysed through the previous methodology chapter. Table 4.4, 'Codebook' shows

the qualitative data's initial sixty-six codes (open-ended questions and interview questions) that were coded through thematic coding in the manner described above, using in summary the logic of Braun and Clark's (2006) thematic analysis with the annotated steps in Chapter 3 concerning the NVivo software. These themes were then reduced, through the combination of the qualitative data, to the twelve themes explored in the next paragraphs.

Table 4.4. Codebook: Qualitative Data (Open-ended and Interview Questions)

Themes and Codes	**Files**	**References**
1. Community of Inquiry		
Cognitive presence		
Login and turn camera on	1	1
Required to do some debates about flipped learning	3	3
Taking notes	1	1
Use of online learning tools and applications	11	11
Watch videos for flipped learning	3	3
Social presence		
Group learning has compromised	3	3
Group learning helped me developed in flipped learning	1	1
Teaching presence		
Cannot concentrate in home environment	3	3
Confusing messages about efficacy of technology in teaching in flipped and non-flipped sessions	1	1

Face to face experiences suggest flipped learning sessions aren't that effective	7	9
Face-to-face was better	8	12
Online is hard to study format	5	7
Previously not used to of flipped learning so there is much difference	5	7
Role plays to understand information	1	1
Whole online exams situation	1	1
2. Learning personalities		
Extraverted feeling types	1	6
Introverted feeling types	1	8
3. Motivation (External and Internal)		
Ambition to help others	1	1
Family inspired me to	3	3
Good salary	1	1
Only suitable career choice	5	6
Teaching will be ideal job	4	4
To open my art studio	1	1
4. Economic Value		
Forced to take it	1	1
5. Accessibility issues		
Deal with a lot of technical issues	3	6
Electricity cuts	1	1

Internet connection	4	5
Lack of suitable environment	2	4
6. Policy of TPACK		
Beneficial	2	3
Don't find it productive	2	2
Except us to know good ICT things	1	1
Flipped learning has increased the complexity	1	1
If its requirement, we should do it	6	6
In-adequate policy	1	1
Learning to produce materials	1	1
Overwhelming (time consuming)	1	1
7. Teacher Feedback		
No feedback from teacher in flipped learning	4	6
Teachers don't listen to student feedback about the utility of flipped learning	1	1
Used to get a lot of feedback in traditional learning	1	1
8. Covid 19		
Distance learning	1	1
Flipped learning is worst with zoom	2	2
Good to keep people safe	1	1
Psychological distress	1	2
Try to find open bookstore and printed books	1	2
9. Teacher's literacy for digital learning		

Lack of competence of teachers	3	4
Poor instruction quality	2	2
10. Over all views (experience) about flipped learning as an experience	0	0
Can't keep track of everyone	4	4
Do not approve flipped learning	2	4
Don't want to be an online teacher	2	2
Flipped learning provides opportunity for learning	1	1
Flipped learning wasn't worth it	3	4
Flipped learning provides informal environment	1	1
Group work fails in flipped learning	1	1
Insufficient	1	2
Limited interaction in flipped learning	4	8
Limited to online learning	1	2
Negative impact of flipped learning	4	6
Not suitable for all courses	1	2
Very bad experience	2	8
11. Interpersonal relationships with flipped learning experience		
Artificial relationships in flipped learning	1	2
Collective learning in flipped learning	1	2
Focuses on the teacher only	1	2
Negative effects of flipped learning	1	1

No interaction	2	3
No problem solving	1	3
No social skills	1	7
Not the same as face-to-face learning	1	2
Results in cold learning	1	2
Technical difficulties	1	1
Time consuming	1	1
Unproductivity in flipped learning	1	3
Weak communication	1	8
12. Comprehension Experience		
Flipped learning is in-effective	1	6
Flipped learning is not real learning	1	5
Flipped learning results in self-teaching	1	2
Increases the complexity	1	3
Not satisfied	1	5
Readings are not helpful	1	1
Technical problems in flipped learning	1	6
13. Efficacy of flipped learning in trainee's development		
Can develop more technology wise	2	3
Can learn visually	1	3
Communication problem	4	8
Didn't learn a lot	2	2

Doesn't develop trainees	6	8
Independent learning	1	3
Just improve ICT skills	2	3
Reduced commitment and interest to learn	2	2
14. Suggestions for new trainees about flipped learning		
Buy a home printer	1	1
Choose a lecturer who's actually good in flipped learning	2	2
Communication is the key	1	1
Do a lot of research	2	2
Don't take flipped learning sessions	3	3
Find a way to work with negative aspects	2	2
Focus on self-learning	2	2
Make sure to have good ICT skills	2	2
Peer feedback is more important as compared to teacher's feedback	1	1
15. Learning Preferences		
Interactive learner	1	1
Kinaesthetic learner	3	3
Aural learner	2	2
Olfactory learner	2	2
Visual learner	2	2
Print learner	1	1

Haptic learner	2	3

With reference to the above, Table 4.5 shows that twelve themes emerged from the combined analyses of the qualitative data's initial sixty-six codes (shown above) and the quantitative data (Likert scales) combined. These included the *Community of Inquiry*'s findings on factors that affect teacher trainees' experience of flipped learning, learning personalities, learning preferences, and motivation (including self-efficacy), as well as factors that arose from the perspective of teacher trainees themselves in terms of their effect on their flipped learning experience. Each theme will be discussed in detail in the sub-sections that follow the linked qualitative and quantitative data.

Table 4.5. Themes that Arose from the Quantitative (Likert Scale) and Qualitative Data (Open-ended and Interview Questions)

Theme 1	The *Community of Inquiry*
Theme 2	Learning Personalities
Theme 3	Learning Preferences
Theme 4	Motivation Including Self-Efficacy
Theme 5	Accessibility Issues
Theme 6	Policy of *TPACK*
Theme 7	Teacher Feedback and Digital Literacy
Theme 8	COVID-19
Theme 9	Interpersonal Relationships Within Flipped Learning
Theme 10	Comprehension and Experience
Theme 11	The Efficacy of Flipped Learning in Teacher Trainees' Development
Theme 12	Suggestions for New Teacher Trainees on Flipped Learning

4.3.1. Theme 1: The *Community of Inquiry* Data Analysis

Within Table 4.6, qualitative data were discussed in the *Community of Inquiry* regarding cognitive, social, and teaching presence. These findings suggest that this framework can be used as an educational lens, with a focus on the development of personal meaning in knowledge and understanding (Garrison, 2017). The participants first emphasized the use of online learning tools and applications in eleven cases based on cognitive presence. Participants stated that they are required to conduct debates on the topic of flipped learning from a cognitive presence standpoint in three cases: for example, the positive and negative aspects of flipped learning in Table 4.6.

Another cognitive presence response, as mentioned in statements, was based on watching videos about flipped learning. One of the participants also mentioned that they are required to log in and turn on their camera as part of cognitive presence. Second, the theme of teaching presence, which emerged from the eight initial codes, captures the essence of teacher trainees' concerns about the efficacy of technology in comparison to online flipped learning and traditional face-to-face learning. First, during the discussion on teaching presence, one participant expressed reservations about the following testimony, citing the effectiveness of technology versus online flipped learning and traditional face-to-face learning.

Furthermore, another statement was presented in eight cases that addressed the notion that face-to-face sessions are perceived as more effective than flipped learning in terms of the learning experience (Table 4.6). Furthermore, in seven cases, the initial code of 'face-to-face sessions helped suggest that flipped learning is ineffective' (Table 4.6) was noted. Participants stated that studying online is difficult in five cases and that they were not used to the flipped learning experience in five cases, indicating a significant difference between flipped learning and traditional face-to-face sessions. Furthermore, three participants stated that they were unable to concentrate in a household setting, and one participant stated that it was not possible to conduct role-plays to aid understanding (learning) of the presented curriculum. Finally, two initial codes yielded the theme of social presence: '*flipped learning*

has compromised the traditional face-to-face essence of group work' (Table 4.6) and '*working in groups has helped me develop in flipped learning*' (Table 4.6).

Another advantage of using the *Community of Inquiry* was increased engagement and learning. Because of the combination of the *Community of Inquiry* and technology-enhanced learning, participants' experiences were enhanced not only on a student-to-student basis but also on a student-to-teacher and student-to-content understanding basis (Garrison, Anderson and Archer, 2019). The second major challenge is to create and facilitate educational courses related to the Community of Inquiry, as well as educational values and the effective application of active technology-based learning (Kim *et al*., 2016). These findings and the aforementioned discussion will be expanded upon in the following discussion section, which connects both the qualitative and quantitative findings of this study through this current theme and the rest discussed below.

Table 4.6. The Community of Inquiry (Qualitative Theme)

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
	Use of Online Learning Tools and Applications	11	We [are] learn [learning] about online education, and how to use applications like Edmodo, Zoom, as well. And we learn about how to make [an] effective PowerPoint and many other things (PA).
	Required to Conduct Debates on the Topic of Flipped Learning	3	We are only required to [conduct] some debates [on the topic of] flipped learning and we read some articles about it. There [is not] much requirement [needed]. [only] to know how to use it [to have digital literacy] (PC).

Cognitive Presence	Watching Videos on the Topic of Flipped Learning	3	I used to find that reading [did not] help a lot, but in order to understand the topic more easily, I kept playing the video [videos] over and over again, like a record player audio [tape], and it really helped me (PN).
	Log in and Turn the Camera on	1	They require us to log in, turn on our cameras, and use our microphones to listen to the lecture (PJ).
	Taking Notes	1	We are taking notes, we were called [through Zoom] every day for our lesson (PK).

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
Teaching Presence	Doubt of the Efficacy of Technology with Regards to its Usage in Comparison to Online Flipped Learning and Face-to-face Traditional Learning	1	It's really weird because in that lesson our teacher always talks about how technology is not as effective [in traditional learning] and then we have learning courses where technology is said to be effective, so in my mind, I'm confused about how to make [create an] effective learning [environment] (PA).
	Face-to-face Sessions were More Effective	8	Yes, it has affected me a lot. I think also because we are always online now. I really miss the face-to-face [learning environment], and I think [the] face-to-

			face [learning environment] is better because, I don't know, this online situation is very weird (PA).
	Face-to-face Sessions Helped Suggest that Flipped Learning is Not Effective	7	I think [believe that] that my experience with face to face [learning] is showing me that maybe technology shouldn't [Should not] be used in different ways in education (PA).
	Studying Online is Difficult	5	I think [I believe that] it is very difficult, because I already find it hard to learn online. Also, there is very few actions you can do. Everything is just so difficult, like reading stuff online, constantly being online, it's very hurtful for me (PG).

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
Teaching Presence	Previously Not Used to the Experience of Flipped Learning, Therefore, there is Much Difference Between Flipped Learning and the Traditional Face-to-face Learning Sessions	5	I think, previously we never used to be online, and we never used to have technology courses, we had an ICT course which taught us Excel and PowerPoint, including word techniques, but other courses were mainly about [based on] learning theories and material design. So I don't [therefore, I do

			not] think there is much connection between my previous courses and my flipped learning, except for the [required] ICT skills (PC).
	Cannot Concentrate in a Household Environment	3	I can't concentrate because we keep looking on [to] the screen, and I have ended up taking some of those blue-screen glasses that are used to stare at the screen to help my eyes (PM).
	Conducting Role Plays to Aid the Understanding of the Presented Curriculum Was Not Possible	1	Actually, me and my friends were doing [conducting] role-plays to understand information where we act like teachers and students to teach each other. I really missed that, and that's really impossible with flipped learning (PN).

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
Teaching Presence	Online Delivery of Exams	1	It makes me think about the whole online exams that we have, as before our exams would be on paper, and we'd [we would] have to

			study for hours, but now we're [we are] just opening books, clicking, multiple-choice questions online. In fact, they make us turn on our microphones to make sure there's no cheating, yet the books are i' front of us (PB).
Social Presence	Flipped Learning Has Compromised the Traditional Face-to-face Essence of 'Group Work'	3	Yes, before we were doing group projects, and we were talking, but this entire flipped learning experience has made the idea of group work [a] terrible [experience] (PL).
	Working in Groups Helped Me Develop in Flipped Learning	1	The most important thing was making a group of friends who also wanted to teach and have the same aspirations, that is the only thing that helped me develop more in flipped learning and concentrate (PN).

Furthermore**,** the impact of the *Community of Inquiry* was investigated using eight different questions (Table 4.7), which included the *Community of Inquiry*'s social, teaching, and cognitive presence as sub-factors. In response to questions six (Table 4.7: Q6) and fifteen (Table 4.7: Q15), 75% (Q6) and 92.5% (Q15) of participants agreed, while 12.5% (Q6) and 2.5% (Q15) disagreed. In the case of questions twenty-one to twenty-three (Table 4.7: Q21–23), the individual proportions were 60% (Q21), 60% (Q22), and 65% (Q23). The case was different for questions twenty-four to twenty-six (Table 4.7: Q24–26), as a higher percentage of the participants agreed with the statements, and the individual results were accounted for as: 82.5% (Q24), 75% (Q25), and 80% (Q26). This is consistent with the arguments

discussed in the literature review, which state that COI teacher trainees' perceptions of social presence are influenced by the type of communication they have with their peers and lecturers during a flipped learning course (Garrison, Anderson and Archer, 2019). Furthermore, when it comes to teaching presence, the findings show that teacher trainees are affected by the implementation (design) of their flipped learning course (Anderson *et al*., 2019). Finally, the combination of social, teaching, and cognitive presences demonstrates that when these presences are combined as a factor, learners are encouraged to develop autonomous and independent thought in the context of flipped learning (Garrison, 2017).

Table 4.7. The Summary of the Impact of Factors Regarding the Community of Inquiry on Teacher Trainees

No.	**Factor**	**Mean ± Standard Deviation**	**Response**
Q6	Social Presence	1.83 ± 1.22	Agree
Q15	Teaching Presence	1.28 ± 0.78	Agree
Q21	Cognitive Presence	3.90 ± 1.06	Disagree
Q22	Cognitive Presence	3.78 ± 0.99	Disagree
Q23	Teaching Presence	3.93 ± 1.19	Disagree
Q24	Social Presence	1.75 ± 0.95	Agree
Q25	Social, teaching, and Cognitive Presence combined	1.78 ± 1.03	Agree
Q26	Social, teaching, and Cognitive Presence combined	1.82 ± 1.06	Agree

Through the combination of these results, it is demonstrated that the effect of factors regarding the *Community of Inquiry* on teacher trainees in their flipped learning experience is agreed with by teacher trainees. This is in accordance with the argument presented by

Cleveland-Innes *et al.* (2019) that students may lack enthusiasm or willingness (motivation) to engage in and remain in a course or programme tailored to the *Community of Inquiry*. This study observes through the discussed literature review that the *Community of Inquiry*, on the other hand, is built on collaborative learning. As a result of the combination of qualitative and quantitative data on this theme, if students do not interact with one another or trust their teachers enough to initiate discussions when problems arise, the *Community of Inquiry* will fall short of its full potential in prompting student-centredness through the social, teaching, and cognitive presences it pertains to (Garrison, 2017).This is critical to remember in a flipped learning setting because collaboration is one of the key benefits of flipped learning in the form of interactive learning discussed in Chapter 1 (Birgili, Seggie, and Oğuz, 2021).

4.3.2. Theme 2: Learning Personalities: Data Analysis

In the qualitative findings of this study, the two types of learning personalities: 'extraverted feeling' and 'introverted feeling' (Jung, 1954), were found to be present. Braun and Clarke (2006)'s thematic analysis was used by this study through the step-by-step rationale for this analysis, with the integration of NVivo noted in Chapter 3 and acknowledgement to the literature review and definition of learning personalities provided in Chapter 2. Because the participant is expressing remorse about the topic of COVID-19 and the impact it has had on the well-being of others, this demonstrates that the participant is an extraverted feeling type.

According to Chapter 2's definition of introverted feeling learning personality, the participant is an introverted feeling type based on the above-mentioned identification using thematic analysis because the participant focuses on how flipped learning affects the participant personally rather than others.

Hills (2017) contends that the Jung (1954) personality types (Jung, Baynes, and Beebe, 2016) can be considered in the context of flipped learning. One factor that may influence teacher trainees' experience with flipped learning in this study is the teacher trainee's extraverted intuitive learning personality (Chapter 2). This personality type sees many possible futures and frequently pauses for brief brainstorming sessions to look for links between people and events (Jung, 1954). However, if they lack the digital skills necessary

to learn (and eventually teach) with flipped learning, they may switch to another personality type with which they are unfamiliar, leading them to reject flipped learning.

Furthermore, within the quantitative data, different personalities were analysed regarding thinking, feeling, sensation, and intuition types as eight sub-factors and regarding teacher trainees' perceptions of learning personalities as factors that affect their experience within flipped learning. Table 4.8 summarises the responses for these eight sub-sections in the form of questions consisting of: Q12 (62.5%), Q16 (90%), Q17 (67.5%), Q18 (65%) and Q20 (65%) had higher participants in agreement, respectively. While Q13 (42.5%), Q14 (62.5%), and Q19 (52.5%) had a higher proportion of participants disagreeing. As a result, learning personalities can influence flipped learning, and flipped learning can influence learners (Hills, 2017). Furthermore, people perform best in areas that match their personalities. Teachers and administrators play an important role in facilitating the learning process for people with certain personality types by acting as a kind of 'performance coach' (Hills, 2017).

Table 4.8. The Summary of the Impact of Factors of Learning Personalities on Teacher Trainees

No.	**Factor**	**Mean ± Standard Deviation**	**Response**
Q12	Introverted Thinking Types	2.03 ± 1.29	Agree
Q13	Extraverted Thinking Types	3.48 ± 1.15	Disagree
Q14	Extraverted Feeling Types	3.97 ± 0.97	Disagree
Q16	Introverted Feeling Types	1.45 ± 0.90	Agree
Q17	Extraverted Sensation Types	1.75 ± 1.06	Agree
Q18	Introverted Sensation Types	1.87 ± 1.04	Agree
Q19	Extraverted Intuitive Types	3.63 ± 1.21	Disagree

Q20	Introverted Intuitive Types	2.05 ± 1.13	Agree

Through the combination of these results, it is demonstrated that the effect of factors regarding learning personalities on teacher trainees in their flipped learning experience is agreed with by teacher trainees. This study observes that, in line with Carey and Barthelmeh's (2016) argument in their book *'Teaching Approaches and Design Studio*,' that personality types should be explored as an alternative approach to teaching and learning because there is currently very little research on this component of student learning. They claim that teachers who understand the various personality types can possibly develop techniques that better meet the needs of a larger group of students.

4.3.3. Theme 3: Learning Preferences: Data Analysis

Table 4.9 shows the learning preferences of the participants in this study, as well as the justification for why the participants were matched with their exerted preference of learning, based on the definitions of learning preferences given in Chapter 2 of Section 2.4.2 and Braun and Clarke (2006)'s thematic analysis through the step-by-step rationale for this analysis with the integration of NVivo mentioned in Chapter 3. The data analysis revealed that all seven different types of learning preferences noted in Chapter 2 within Section 2.4.2, which included haptic, print, visual, olfactory, interactive, aural, and kinaesthetic learners, were applicable among the participants. This result supports Walters' (2018) argument that the ability to explain and understand the basic mechanisms by which cognitive minds work is still required to optimize individuals' efficiency and capacity.

Furthermore, this supports Malvik's (2020) and Skooler's (2018) argument that creating functional groups based on learning preferences within flipped learning settings allows for a collaborative, interactive learning environment in which students share ideas and then collaborate to develop them. This teaches students the importance of sharing and giving, as well as working together to solve problems. Students, whether teacher trainees or other higher education students, learn to adapt to this type of group work for their future by either working with the same learning preference or multiple matching diverse learning preferences.

In two cases, it was noted that participants preferred the form of haptic learning, because they preferred learning with hands-on tasks (Chapter 2: Section 2.4.2). For example, by feeling the physical materials used in their sessions, as stated by one of the participants below:

'As I said before, it is all about materials for me, and I really like feeling the material, drawing, highlighting as well, so I don't [do not] like doing everything online, I don't [do not] think it's effective' (PA).

Moreover, four participants were in the favour of the form of print learning, because they prefer reading and highlighting print materials (Chapter 2: Section 2.4.2), as pointed out by one of the participants within their statement of:

'[I] *Just highlight my books, which makes me feel less pressure in this situation*' (PB).

One of the participants preferred visual learning because the participant sees and learns from others (Chapter 2: Section 2.4.2). In addition, two participants favoured olfactory learning, because they both prefer to learn through memories (Chapter 2: Section 2.4.2). For example, as noted by one of these two participants, the participant remembered the scent of coffee consumed while learning.

In four cases, participants preferred interactive learning because they preferred to learn by communicating with their peers (Chapter 2: Section 2.4.2), as quoted by one participant:
'Yes, before we were communicating in lessons, but now it's just as I [Have] said I'm [I am] just staring at a blank screen [with no communication]' (PF).

Finally, one participant was in favour of aural learning because the participant prefers to listen within a classroom setting (Chapter 2: Section 2.4.2), and another participant, as quoted below, also preferred kinaesthetic learning:

'I [have] become [a] lazy person. I do not feel like joining in the lesson, I prefer to sleep' (PJ).

Table 4.9. Learning preferences (Qualitative Theme)

Theme	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
Learning Preferences	Haptic Learner	2	As I said before, it's all about materials for me, and I really like feeling the material, drawing, highlighting as well, so I don't [do not] like doing everything online, I don't [do not] think it's effective (PA). The participant is a haptic learner, based on the preference of learning with hands-on tasks such as feeling the material Chapter 2: Section 2.4.2).
	Print Learner	4	[I] Just highlight my books, which makes me feel like pressure in this situation (PB). The participant is a print learner, based on the preference of reading and highlighting print materials (Chapter 2: Section 2.4.2).
	Visual learner	1	Actually, there isn't much difference here. I mean, most of the things that we learn about. I did see from other teachers, so it's just really me learning [to] passing [pass my lesson], just [in order] to be able to get my job (PD). The participant is a visual learner because the participant sees and learns from others (Chapter 2: Section 2.4.2).

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
Learning Preferences	Olfactory Learner	2	I find it very annoying to be on my laptop constantly and I prefer to be outside studying, in our Kozy café [the name of café is Kozy] with smells [whiffs] of fresh coffee' (PE). The participant prefers to be outside and remembers the scent of coffee while studying. He is an olfactory learner (Chapter 2: Section 2.4.2).
	Interactive Learner	4	Yes, before we were communicating in lessons, but now it's just as I [have] said I'm [I am] just staring at a blank screen [with no communication] (PF). The participant is an interactive learner, because the participant learners by communicating with peers (Chapter 2: Section 2.4.2).
	Aural Learner	1	It has [affected me] because I used to listen much better [more effectively] in the classroom. I cannot concentrate in a virtual home environment (PI). The participant Chapter 2: Section 2.4.2 is an aural learner, because the participant prefers to listen in class (Chapter 2: Section 2.4.2).

Themes	Initial Codes	Frequency	Representative Statements from the Interviews
Learning Preferences	Kinaesthetic Learner	1	I [have] become [a] lazy person. I don't feel like joining in the lesson. I prefer to sleep (PJ). The participant is a kinaesthetic learner, because flipped learning was noted to have made the participant 'lazy'. The participant wants to move about (Chapter 2: Section 2.4.2).

Moreover, in terms of the quantitative data, seven different sub-factors were examined in relation to learning preferences, and the summary of the questions can be found in Table 4.10 below. For question 4 (Table 4.10: Q4), although the majority of participants (37.5%) were neutral in their opinions, it was noted that the percentage of participants who agreed was 7.5% higher than those who disagreed. For question five (Table 4.4: Q5), 40% of the participants disagreed with the statement, noting this disagreement to be the highest score given within Table 4.10. Further noted in Table 4.10, the individual proportions for the participants regarding the rest of the questions were in agreement with scores noted as: Q7 (92.5%), Q8 (90%), Q9 (85%), Q10 (87.5%), and Q11 (57.5%), respectively. These findings adhere to the findings of Malvik (2020) and Skooler (2018), in which both studies and this study's findings observe a pattern of creating functional groups based on learning preferences within flipped learning settings, which enables a collaborative, interactive learning environment in which students share ideas and then collaborate to develop them.

Table 4.10. The Summary of the Impact of Factors of Learning Preferences on Teacher Trainees

No.	Factor	Mean ± Standard Deviation	Response
Q4	Visual Learners	2.93 ± 1.37	Agree
Q5	Aural Learners	3.35 ± 1.19	Disagree
Q7	Kinaesthetic	1.37 ± 0.86	Agree
Q8	Haptic Learners	1.35 ± 0.89	Agree
Q9	Print Learners	1.53 ± 1.06	Agree
Q10	Interactive Learners	1.45 ± 0.93	Agree
Q11	Olfactory Learners	2.10 ± 1.10	Agree

Through the combination of these results, it is demonstrated that the effect of factors regarding learning preferences on teacher trainees in their flipped learning experience is agreed with teacher trainees. These findings based on learning preferences in this study resonate with a study by Rahman *et al*. (2015), who argue that students can learn more effectively in a flipped learning environment tailored to their learning preferences, in line with the aforementioned pattern of creating functional groups based on learning preferences within flipped learning (Malvik, 2020; Skooler, 2018).

4.3.4. Theme 4: Motivation (Including Self-Efficacy): Data Analysis

The theme of motivation was recognized as an extrinsic form because extrinsic motivation, defined by Zhao (2012) in Section 2.4.3, is defined as performing an action in order to obtain a reward or a specific outcome. As a result, all of the initial codes in Table 4.11 are based on external influences that instilled in the participants in this study the desire to become teacher trainees. One participant, for example, stated that he aspired to help others by becoming a teacher trainee, as shown below:

'I wanted to be a teacher to help people learn' (PA).

Another participant stated that teaching was the only suitable career choice within Northern Cyprus, as mentioned in five cases and presented as an example below:

'I chose English language teaching because my English is good. The only suitable job here is being a teacher, I guess. I had no choice' (PB).

It was also noted that teaching would be an ideal job (four cases) for the participants in this study. And in three cases, participants mentioned that their families inspired them to become teacher trainees so that they could follow in their families' footsteps in becoming teachers, as shown below:

'My whole family are teachers. They mentored me to become a teacher. They inspired me in a way. So, I decided to become a teacher, and I really loved it' (PK).

Moreover, one of the participants wanted to study pedagogy (PGCE), on the basis that the participant could use the degree to open an art studio and teach students how to draw, as noted through the given statement of:

'Because I am an art major, I'm [I am] not allowed to legally teach without a pedagogy certificate' (PM).

Finally, the initial code of the notion that teaching in Northern Cyprus provides a good salary in relation to the above-mentioned initial code of teaching noted as an ideal job was also noted by one of the participants, as referred to in the given statement below:

'[Teaching provides a] Very good salary according to the conditions of Northern Cyprus' (PO).

The motivation factor, as well as its relationship to flipped learning and the COI theoretical framework, is based on the idea that teacher trainees must participate in both asynchronous and synchronous sessions of peer-to-peer group discussions. Teacher trainees must be motivated to learn through these activities or discussions, whether through extrinsic or intrinsic motivation, in order to achieve this level of active discussion. As a result, the COI's social presence (group discussions), teaching presence (tailoring teaching methods), and cognitive presence (connecting ideas to learn) are used to tailor to these two types of motivations that teacher trainees follow in flipped learning (Özüdoğru, 2021). The above-mentioned findings, as well as those listed in Table 4.11, are linked to Bandura's (1997) definition of self-efficacy, which is discussed in the literature review. Teacher trainees enter teacher training programmes with their own self-efficacy expectations, which are aligned with their intrinsic and extrinsic motivation as factors that can affect teacher trainees in flipped learning (Kass and Miller, 2015).

Many teacher candidates enter teacher education programmes expecting to be personally equipped with the skills required to become the 'effective' teacher they aspire to be, as well as shaped into their personal image of an effective teacher (intrinsic motivation). Others come with the expectation of meeting their programmes' achievement and mastery goals, such as assessing the needs of their future students (Watson and Marschall, 2019; Bray-Clark and Bates, 2003). As noted by Özüdoğru (2021), this is also related to the COI's cognitive presence, as teacher trainees analyse their expectancies, as well as the teaching presence of their needs being met through the flipped learning teaching environment and the social presence of the COI in their student-student and teacher-student relationships of their expectancies being tended to in this environment. In the upcoming discussion section, these findings will be expanded upon by connecting both the quantitative data on motivation and self-efficacy as well as the current qualitative data on the subject.

Table 4.11. Motivation (Extrinsic) (Qualitative Theme)

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
Motivation (Extrinsic)	Ambition to Help Others	1	I wanted to be a teacher in order to help people [to] learn (PA).
	Only Suitable Career Choice	5	I chose English language teaching because my English is good. The only suitable job here is being a teacher, I guess. I had no choice (PB).
	Teaching Will Be an Ideal Job	4	I love learning new things. So I decided that teaching will be my ideal dream job (PJ).
	Family Inspired Me to Follow in Their Footsteps to Become a Teacher	3	My whole family are teachers. They mentored me to become a teacher. They inspired me in a way. So, I decided to become a teacher, and I really loved it (PK).
	To Open My Art Studio	1	I wanted to study pedagogy so I can use it to open my own art studio and teach students how to draw. Because I am an art major, I'm [I am] not allowed to legally teach without a pedagogy certificate (PM).
	Good Salary	1	[Teaching provides a] Very good salary according to the conditions of Northern Cyprus (PO).

The Likert scale statements: questions one to three (Table 4.1: Q1–Q3), assessed the impact of the factors of motivation and self-efficacy through teacher trainees' (participants')

perceptions of factors that affect their flipped learning experience. Motivation, including self-efficacy, was divided into sub-factors, as shown in Table 4.1. It was found that for question one (Table 4.1: Q1) relating to intrinsic motivation, 75% of the participants disagreed with the statement, while 10% agreed with the statement. For question two (Table 4.1: Q2) relating to extrinsic motivation, 77.5% of the participants agreed and 2.5% disagreed. For question three (Table 4.1: Q3) on self-efficacy, the proportions of participants who agreed and disagreed only had a 2.5% difference. According to the literature review, extrinsic motivation for Q2 *'I only engage in flipped learning because it is a mandatory part of my course'* is based on the expectation that teacher trainees will learn from a teacher with digital literacy and skill in using and teaching the digital skills required for flipped learning, which will prepare them for their future careers as teachers (Ranieri and Bruni, 2018; Olsson and Edman-Stalbrant, 2008). However, these teacher trainees discover that this is not the case because the teachers who are supposed to train them to be 'effective' teachers in their minds lack the necessary digital skills. As a result, teacher trainees experience demotivation and a shift in self-efficacy expectations (Share, Mamikonyan and Lopez, 2019; Ranieri and Bruni, 2016).

Through the combination of these results, it is demonstrated that the effect of factors regarding learning preferences on teacher trainees in their flipped learning experience is agreed to some degree by teacher trainees. It is observed by this study and the discussed literature review that teacher trainees enter teacher education programmes with the expectation that they will learn from a teacher with digital literacy and skill in using and teaching the digital skills required for flipped learning, which will prepare them for their future careers as teachers (Ranieri and Bruni, 2018; Olsson and Edman-Stalbrant, 2008). However, in many cases, teacher trainees note that the teachers who are supposed to train them to be 'effective' teachers in their minds do not have the necessary digital skills to do so; for example, many teachers do not have the skills to upload learning tasks or videos on virtual learning platforms. This results in demotivation and a shift in self-efficacy expectations among teacher trainees (Share, Mamikonyan and Lopez, 2019; Ranieri and Bruni, 2016).

4.3.5. Theme 5: Accessibility Issues: Data Analysis

Accessibility issues (Table 4.12) as a factor that affects teacher trainees within flipped learning have emerged from the initial codes of 'lack of suitable environment,' '[dealt] with a lot of technical issues,' 'internet connection [problems]' and 'electricity cuts [blackouts].' With regards to the stated initial codes above, accessibility of a suitable environment (two cases) and technical issues (three cases) experienced within the medium of flipped learning are the most frequently mentioned forms of accessibility issues, highlighted by two example statements from the participants given below:

(1) *'I was forced to turn on my camera which I find very disturbing as I did not have a suitable environment'* (PB).

(2) '*I guess, it isn't [is not] that much, is just basic, you know, I mean, in terms of technology, we had to deal with a lot of technical issues, but that's about it'* (PD), respectively.

Finally, other factors that affected the teacher trainees in the form of accessibility issues are: internet connection problems (four cases) and electricity blackouts, as stated by the participants in the given examples below:

(1) *'Internet connection problems'* (PD).

(2) *'We have a lot of [blackouts]'* (PD).

This study observes that these findings support Katircioğlu, Fethi, and Kilinç's (2015) claim that learning is obsessed with technology. Technology allows for more adaptable learning. The pedagogical limitation of flipped learning at GAU is a lack of access to technology owing to a number of factors. Teacher trainees from low-income families may be unable to afford a device such as a personal computer or a smartphone, let alone the cost of internet access. Another constraint is geography. Several areas in Northern Cyprus do not have a consistent internet or electricity connection, making it impossible for them to complete the online portion or solely online synchronous and asynchronous sessions of flipped learning that they are required to do.

Table 4.12. Accessibility Issues

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
Accessibility Issues	Lack of Suitable Environment	2	I was forced to turn on my camera, which I find very disturbing, as I didn't [did not] have a suitable environment (PB).
	Deal with a Lot of Technical Issues	3	In terms of technology, we had to deal with a lot of technical issues, but that's about it (PD).
	Internet Connection [Problems]	4	Internet connection [problems] (PD).
	Electricity Cuts [Blackouts]	1	We have a lot of cuts [blackouts] (PD).

4.3.6. Theme 6: Policy of *TPACK: Data Analysis*

The teacher trainees in this study perceived the *TPACK* policy (Table 4.13; Koehler and Mishra, 2006) differently amongst each other because some of them (two cases) found the TPACK policy to be beneficial for flipped learning, while another participant perceived the mentioned policy to be overwhelming (time-consuming), as seen through the participant's statement shown below:

'It is like we only focus on rules: for example, we have to attend four conferences about technology learning. So we ended up being forced to go to those, which take [takes] time' (PA).

Similarly, to the given statement above, other participants perceived the *TPACK* policy as an inadequate policy (one case) and a policy that has increased the complexity of flipped learning (one case), as quoted:

'I think it is terrible because flipped learning has increased the complexity of the course materials. So, it is really hard to understand things' (PG).

On the other hand, other participants noted that learning to produce materials during flipped learning was important for their future teaching careers (one case). Contrary to this, two other participants found flipped learning to not be a productive policy as part of *TPACK*. Because of this policy, one participant highlighted that since it is a requirement to follow the *TPACK* policy, one should accept that they must undertake flipped learning, as mentioned in his statement:

'I think if it is the law, it is the law. I mean, if we have to learn it, we have to learn it, just like how I've [I have] had to do this Master's [degree] to be an English teacher' (PJ).

Finally, one participant stated that there is an expectation of teacher trainees to have efficient ICT skills with regards to the *TPACK* policy, as referred to in this statement given below:

'They expect a lot from us to know very good [efficient] ICT things [skills] like [how to] make Power Points' (PO).

These findings support, as observed by this study and the discussed literature review, that the argument addressing the incorporation of flipped learning as an educational policy intervention 'through the recommendations of Güzer and Caner (2016) using the *TPACK*

framework' ignores the intention of Koehler and Mishra (2006) who created this framework with the goal of understanding and identifying the type of knowledge a teacher (including teacher trainees) requires in an ICT-enhanced classroom climate to help with complexities around technology. In addition, these results are in line with Zaho's (2017) argument that this imitation of Koehler and Mishra's (2006) *TPACK* framework in GAU, exerts a 'fatal attraction'. This 'fatal attraction' through GAU's focus on technology and the American model system, based on Güzer and Caner's (2016) *TPACK* recommendation, is visible in the above-mentioned results.

Table 4.13. Policy of TPACK

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
Policy of *TPACK*	Beneficial	2	I mean, we just started to have good online banking systems. I think technology is good (PC).
	Overwhelming (Time-Consuming)	1	It's like we only focus on rules: for example, we have to attend four conferences about technology learning. So we ended up being forced to go to those, which take [takes] time (PA).
	Inadequate Policy	1	The approach that we're [we are] taking is very wrong, because we talk about needs, yet we don't approach them. I mean, the exams we had [were] open book. I was forced to turn on my camera, which I find very disturbing (PB).

	Flipped Learning has Increased the Complexity of the Curriculum	1	I think it's terrible because flipped learning has increased the complexity of the course materials, so it's really hard to understand things (PG).
	Learning to Produce Materials	1	It is important for us when we're learning to make PowerPoints, and documents during our lectures (PJ).

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
Policy of *TPACK*	Don't Find It Productive	2	I think it's [it is] a very bad teaching method because I don't find it productive enough for it to teach us everything [we need] (PK).
	If It's a Requirement, We Should Do It	6	I think if it's the law, it's the law. I mean, if we have to learn it, we have to learn it, just like how I've [I have] had to do this master's [degree] to be an English teacher (PD).
	Expect Us to Know Good [Efficient] ICT Things [Skills]	1	They expect a lot from us to know very good [efficient] ICT things [skills], like [how to] make PowerPoints (PO).

4.3.7. Theme 7: Teacher Feedback and Digital Literacy: Data Analysis

Table 4.14 describes the feedback given to teacher trainees in flipped learning by their teacher. One participant expressed that these teachers in flipped learning courses do not listen to their students' feedback based on the utility of flipped learning, as quoted below:

'It's [it is] very hard to find people who understand this because when we try to tell our teachers, they just say that we have to do it, and there is nothing else to do' (PA).

Another participant noted that there was a lot of feedback given by teachers in traditional face-to-face learning when compared to the amount of feedback given in online media of flipped learning. Apropos of this remark, in the last four cases, there were also findings of a lack of feedback from teachers regarding the usage of flipped learning, as stated by one of the participants below:

' [As] I have said, being constantly on the laptop and being given constant homework with no teacher feedback, is terrible (PE).

According to Othman *et al*. (2022), Colomo-Magaa *et al.* (2020), Aljaraideh (2019), and Hessler (2019), students find flipped learning with constant formative evaluation and constructive feedback to be beneficial as a type of individualised learning. Individualised feedback delivered on a regular basis can help to improve their learning experience. As a result, students require more personalised, tailored learning, and the current findings indicate that these teacher trainees did not receive personalised or constructive feedback.

Table 4.14. Teacher Feedback

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
Teacher Feedback	Teachers Don't Listen to Student Feedback Based on the Utility of Flipped learning	1	It's [It is] very hard to find people who understand this because when we try to tell our teachers, they just say that we have to do it, and there is nothing else to do (PA).
	Used to Get a Lot of Feedback in Traditional Learning	1	I used to get a lot of feedback because I need to learn. I've [I have] never taught in my life (PL).
	No Feedback from Teachers in Flipped Learning	4	[As] I have said, being constantly on the laptop and being given constant homework with no teacher feedback, is terrible (PE).

In addition, participants' perceptions of their teacher's digital literacy with regards to their utilisation of flipped learning are presented in Table 4.15. Participants noted in two cases that there was a lack of effective teaching practices presented in their flipped learning courses. Further to this, the participants in three cases emphasised that their teachers lack the digital literacy to teach within the medium of flipped learning, as pointed out by one of the participant's statement below:

'I mean, the flipped learning course is just our teacher telling us how to make good education [an effective learning environment], but she is not making us good education [an effective learning environment]: she is just reading slides, and I am drinking coffee, eating food. I don't [do not] feel it's [this is] education' (PA).

The findings support this study's argument through the introductory and literature chapters that the notion of Northern Cyprus, including the Department of Education's goal of fostering digital literacy, with teacher trainees serving as critical agents in meeting this goal, has failed to recognize that, in addition to these implications, teacher trainees bring something unique to the flipped learning table (Counsell *et al*., 2000). As previously stated, teacher trainees are students who will later teach other students in flipped learning. As a result, their relationship within flipped learning is critical because if they lack the necessary pedagogical skills for using flipped learning (for example, eliciting active student-centred learning [Webb *et al*., 2021]), they will be unable to care for their students and the factors that affect them in flipped learning.

Table 4.15. Teachers' Digital Literacy

Themes	**Initial Codes**	**Frequency**	**Representative statements from the Interviews**
Teachers' Digital Literacy	Lack of Competence in Teachers' Digital Literacy	3	I mean, the flipped learning course is just our teacher telling us how to make good education [an effective learning environment], but she is not making us good education [an effective learning environment]: she is just reading slides, and I am drinking coffee, eating food. I don't[do not] feel it's [this is] education (PA).
	Poor Instruction Quality	2	Most of the time it is just a person reading slides for us, and we don't [do not] do [use] any form of using technological applications, which I actually do want to learn [about] (PA).

4.3.8. Theme 8: COVID-19: Data Analysis

The participants noted the impact of COVID-19 (Table 4.16) as one of the main factors affecting their experience during flipped learning. For example, one participant stated on the matter of COVID-19 that:

'It is a psychological distress' (PA*).*

Another participant noted that, as part of the COVID-19 impact on flipped learning, the participant could not find an open bookstore and could not access printed versions of books, as mentioned below:

'I had to go and try and find an open bookstore, which was very hard during this lockdown, because of COVID [COVID-19]' (PC).

In contrast to the above, the initial code of distance learning (one case) in Table 4.16 is perceived beneficial by participants, based on COVID-19, as an advantage of online flipped learning in order to keep participants safe during the pandemic. However, in two cases, participants highlighted that flipped learning is not efficient with the usage of 'Zoom' (a video conferencing application [Case, 2020]) for the transfer to solely online learning as part of the COVID-19 safety precautions discussed in Section 1.8, as quoted in the following sentence:

'*The pandemic happened recently, and we were on Zoom. But there is not enough interaction with the students. Flipped learning is worse with Zoom*' (PI).

These findings are consistent with the impact of COVID-19 on flipped learning discussed in the introductory chapter of this study. In this chapter, this study observes that teacher trainees and teachers were forced to take fast-track courses on online learning strategies and technologies, transforming the pandemic into a major flipped learning experiment in

educational research (Gao, 2021; Dill *et al*., 2020). It is also worth noting that this study also observed that , as a result of the COVID-19 pandemic preparation measures, these teacher trainees (participants) had no prior exposure to the method of flipped learning, nor did they have any experience with the method of solely Internet-based learning. This lack of prior experience with flipped learning is acknowledged first in the previously discussed teacher training programmes investigated in the study, as well as by Güzer and Caner's (2016) recommendation that teacher trainees be exposed to flipped learning based on their degree programmes.

Table 4.16. COVID-19

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
COVID-19	Psychological Distress	1	COVID [COVID-19] is making everyone's psychology very bad (PA).
	Trying to Find Open Bookstore and Printed Books	1	I had to go and try to find an open bookstore, which was very hard during this lockdown, because of COVID *[COVID-19]* (PC).
	Distance Learning	1	It's good in terms of distance learning, especially in a pandemic we learned in order to keep people safe (PD).
	Good to Keep People Safe [During the Pandemic]	1	I think because of the pandemic. It's [it is] good to keep people safe. But as I said, it's [it is] a negative experience for me (PG).
	Flipped Learning Is Worse with Zoom	2	The pandemic happened recently, and we were on Zoom. But there is not enough interaction with the students. Flipped learning is worse with Zoom (PI).

4.3.9. Theme 9: Interpersonal Relationships Within Flipped Learning: Data Analysis

Table 4.17 shows the interpersonal relationships with flipped learning experienced by the teacher trainees in this study. One of the participants pointed out below that the relationships in flipped learning are artificial:

'Relationships are starting to get a little artificial in flipped learning' (Appendix S: open-ended results: Q3).

Moreover, it was acknowledged that in flipped learning, there is little to no communication experienced by teacher trainees regarding student-to-teacher interactions, as referred to by the given statement below:

'*Communication skills have become weak, active student-teacher dialogue [has] disappeared in flipped learning*' (Appendix S: open-ended results: Q3).

Within the topic of communication, it was also found that flipped learning does not support the development of social skills in participants (one case), which is because of the difficulties presented with working in groups in flipped learning (one case), as shown through a participant quote below:

'Difficulty in planning in flipped learning for people who do not have the routine of self-study [autonomous learning] and have not established this capability during the situation of working in groups' (Appendix S: open-ended results: Q3).

Moreover, it was noted in one case that in flipped learning, there are no problem-solving skills present as an active form of learning (Webb *et al*., 2021) (one case). In addition, it was noted that flipped learning is teacher-centred (one case); it is time-consuming (one case), and that it results in artificial learning (per the previous statement given above), as quoted by a participant:

'There is no kindness in flipped learning: it's [it is] too cold [artificial] like learning with no warm friendship, I don't [do not] find it logical' (Appendix S: open-ended results: Q3).

Another participant noted that flipped learning generates negative effects for interpersonal relationships, as these relationships are different from those within face-to-face traditional learning, as quoted below:

'Flipped learning is not the same as face-to-face education based on friendship, cultural activity and communication' (Appendix S: open-ended results: Q3).

It was additionally noted that there is also a lack of productivity (one case) and a lack of one-to-one interaction (two cases) in flipped learning, as stated by participants below:

(1) *'Flipped learning is very hard: I try to type questions, but [the] teachers move [moves on] fast'* (Appendix S: open-ended results: Q3).

(2) *'There is no one-on-one interaction because you get interrupted by other students'* (Appendix S: open-ended results: Q3).

Finally, it was noted by participants that there are technical difficulties in flipped learning (one case), leading to problems in communication because of the unfortunate issues encountered with internet connections in Northern Cyprus.

This study observes that these findings highlight the significance of social presence in COI, because it entails effectively connecting in a trusting environment and establishing interpersonal relationships while retaining their unique characteristics (Garrison, Anderson, and Archer, 2019). These findings show the teacher trainees in GAU did not experience this and will be discussed further in the upcoming discussion section. Therefore, if students do not interact with one another or trust their teachers enough to initiate discussions when problems arise, the *Community of Inquiry* will fall short of its full potential (Garrison, 2017). This is critical to remember in a flipped learning setting because collaboration is one of the key benefits of flipped learning in the form of interactive learning (Birgili, Seggie, and Oğuz, 2021).

Table 4.17. Interpersonal Relationships Within Flipped Learning

Theme	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
Interpersonal Relationships Within Flipped Learning	Artificial Relationships in Flipped Learning	1	Relationships are starting to get a little artificial in flipped learning (Appendix S: open-ended results: Q3).
	Weak Communication	1	Communication skills have become weak, active student-teacher dialogue [has] disappeared in flipped learning (Appendix U: open-ended results: Q3).
	No Social Skills	1	I don't [do not] value flipped learning. It is a class on computer [skills], [there is] no social skills for job development (Appendix U: open-ended results: Q3).
	Difficulty in learning in Groups	1	Difficulty in planning in flipped learning for people who do not have the routine of self-study [autonomous learning] and have not established this capability during the situation of working in groups (Appendix U: open-ended results: Q3).
	No Problem-Solving Skills	1	I think this also had an effect on making the lesson easy, we just talked about the lesson so it was meaningless. [There was] No problem-solving [Skills] like we do in the [traditional] class [classroom] with flipped learning (Appendix U: open-ended results: Q3).

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
	Focuses on the Teacher Only	1	We did not talk [communicate] much, more focus was on the teacher in flipped learning (Appendix U: open-ended results: Q3).
	Time Consuming	1	[There is] No time, we are too busy trying to understand how to use flipped learning (Appendix U: open-ended results: Q3).
	Results in Cold [Artificial] Learning	1	There is no kindness in flipped learning: it's [it is] too cold [artificial] like learning with no warm friendship, I don't [do not] find it logical (Appendix U: open-ended results: Q3).
Interpersonal Relationships Within Flipped Learning	Negative Effects of Flipped Learning Based on Interpersonal Relationships	1	[I am] Being socially affected too much in flipped learning, falling into negative factors of just being on [the] laptop (Appendix U: open-ended results: Q3).
	Not the Same as Face-to-face learning	1	Flipped learning is not the same as face-to-face education based on friendship, cultural activity, and communication (Appendix U: open-ended results: Q3).
	Unproductivity is Present in Flipped Learning	1	Flipped learning is very hard. I try to type questions, but [the] teacher move [moves on] fast (Appendix U: open-ended results: Q3).

Themes	Initial Codes	Frequency	Representative Statements from the Interviews
Interpersonal Relationships Within Flipped Learning	No One to One Interaction	2	You cannot interact one on one [with each other] because you get interrupted by other students (Appendix S: open-ended results: Q3).
	Technical Difficulties	1	I had many difficulties in communication, especially because of Wi-Fi [internet connection issues]. Some days I struggled with attending meetings and lectures in flipped learning (Appendix S: open-ended results: Q3).

4.3.10. Theme 10: Comprehension and Experience: Data Analysis

Participants expressed their comprehension and experience of flipped learning (Table 4.18) through different perceptions. One of the participants expressed that reading online texts in flipped learning does not contribute to learning, as quoted below:

'Flipped learning creates an environment that is very suitable for cheating in online exams. No real learning [occurs]' (Appendix S: open-ended results: Q2).

Furthermore, it was noted that technical difficulties with flipped learning (one case) caused participants to not learn effectively. With these difficulties mentioned, it was noted by a participant that they had to result in auto-didacticism in order to comprehend the given course material, as quoted below. It is important to note that auto-didacticism is defined as '*[the] process or practice of learning a subject without a teacher or formal education'* (Alexander *et al.*, 2021, p.3).

'*I have moved on to self-teaching myself [auto-didacticism] in flipped learning, as noted, my teacher was just reading the slides, no discussion took place*' (Appendix S: open-ended results: Q2).

Finally, in one case, a participant expressed that flipped learning was ineffective as it increased the complexity of the comprehension of their course materials (similar to the given statement above), leading to dissatisfaction with the education received through flipped learning (one case), as quoted by the participant:

'[I am] not satisfied with flipped learning' (Appendix S: open-ended results: Q2).

With these findings, this study observes that using COI's cognitive presence and learning preference as a guide, teacher trainees can identify which factors influence how they learn or understand the material (presented in their flipped learning context). Teacher trainees can demand that teachers diversify their teaching methods, allowing students to thrive in an active learning environment (Rahman *et al*., 2015), as shown in the results and Table 4.18 and further discussed in the following sections.

Table 4.18. Comprehension and Experience

Themes	**Initial Codes**	**Frequency**	**Representative Statements from Interviews**
Comprehension and Experience	Readings Online Texts Are Not Helpful for Comprehension	1	In flipped learning, I don't [do not] think [believe] there is an advantage, [we are] just reading things online [with] no help (Appendix S: open-ended results: Q2).
	Flipped Learning Is Not a Real Learning Tool	1	Flipped learning creates an environment that is very suitable for cheating on online exams. No real learning [occurs] (Appendix S: open-ended results: Q2).

	Technical Problems in Flipped Learning	1	Technical problems in flipped learning have [has] caused me to not learn well [efficiently] (Appendix S: open-ended results: Q2).
	Flipped Learning Results in Self-teaching [Auto-didacticism]	1	I have moved on to self-teaching myself [auto-didacticism] in flipped learning, as noted in my teacher was just reading the slides, no discussion took place (Appendix S: open-ended results: Q2).

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
Comprehension and Experience	Flipped Learning Is Ineffective	1	In flipped learning, it is not mandatory to attend live sessions, so I just watch the videos. I don't [do not] believe it's [it is] effective (Appendix S: open-ended results: Q2).
	Flipped Learning Increases the Complexity of Taught Courses	1	Comprehension of taught course materials was terrible for me. Flipped learning increased the complexity of the course materials, which made it harder to

			comprehend (Appendix S: open-ended results: Q2).
	Not Satisfied	1	[I am] Not satisfied with flipped learning (Appendix S: open-ended results: Q2).

4.3.11. Theme 11: The Efficacy of Flipped Learning in Teacher Trainees' Development: Data Analysis

Participants additionally discussed the effectiveness of flipped learning in teacher trainees' development (Table 4.19). In six cases, participants agreed that flipped learning does not support the development of teacher trainees' skills regarding teaching, as quoted by one of the participants:

'So, in terms of me as a teacher trainee. I don't [do not] think [believe] I have developed, I think, I am the same level, I was before' (PA).

Furthermore, the degree of engagement and interest in learning was found to be subordinate in flipped learning (two cases). It was viewed that this form of engagement supported only the development of technical skills and independent learning, as noted by two of the participants below:

(1) *'If I had to be honest, I'm [I am] not sure. I guess. Technology-wise, I developed more'* (PC).

(2) *'I've [I have] learned to become independent. Because I'm [I am] not going to get the information from the teacher who is teaching us about flipped learning'* (PF).

In four cases, the participants stated that there are communication issues in relation to the previously discussed theme of interpersonal relationships (Table 4.17) and that flipped learning only supports the development of the ICT skills of the participants in regards to their given assessments (two cases).

Finally, one of the participants stated that the impact of learning was minimal in flipped learning, yet another participant noted that through this impact, the advantage of flipped

learning is that participants can learn visually, echoing the theme of learning preferences in Table 4.9. Both example statements regarding these two perceptions by these participants are given below:

(1) *'There was, only mandatory completing [completion of] tasks. Attendance wasn't [was not] mandatory as well, so I guess I just didn't [did not] learn a lot'* (PM).

(2) *'There's also good sides of flipped learning because we learn visually'* (PN).

This study and many others have observed (for example, Birgili, Seggie, and Oğuz, 2021; Al-atabi and Al-noori, 2020) that the promise of student-centredness in flipped learning is to change the relationship between teaching and learning by creating a shift from teacher-led to student-centred learning, from a didactic transfer-based method (behaviourism) to an interactive construction of knowledge (constructivism), and these findings support this claim. These results will be further discussed in detail in the upcoming section.

Table 4.19. The Efficacy of Flipped Learning in Teacher Trainee's Development

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
The Efficacy of Flipped Learning in Teacher Trainee's Development	Doesn't Develop Teacher Trainees' Skills	6	So, in terms of me as a teacher trainee. I don't [do not] think [believe] I have developed, I think, I am the same level, I was before (PA)
	Reduced Commitment and Interest to Learn in Flipped Learning	2	That's [that is] not how education should be. If I am to go on to teach my students, I would hate for that to happen because that is not the joy of teaching. You know, there is this quote, where they say that you need to love your job in order to be happy and I

			don't [do not] think our teacher is happy teaching, and it does affect us a lot (PF).
	Can Develop More Technology-wise	2	If I had to be honest, I'm [I am] not sure. I guess. Technology-wise, I developed more (PC)
	Independent Learning [Autonomous Learning]	1	I've [I have] learned to become independent. Because I'm [I am] not going to get the information from the teacher who is teaching us about flipped learning (PF).
	Communication Problems	4	The whole communication thing is an issue, because, you know, I don't [do not] even open my camera. My friends and I are text messaging each other [on our mobile phones] between the lesson and that's it (PF).

Themes	Initial Codes	Frequency	Representative Statements from the Interviews
The Efficacy of Flipped Learning in Teacher Trainee's Development	Only Improves ICT Skills	2	During learning, we just improve our ICT skills, which will be useful for exam week. For example, PowerPoints and flashcards. But apart from that, I didn't [did not] find any benefits (PK).
	Minimal Impact of Learning	2	There was, only mandatory completing [completion of] tasks. Attendance wasn't [was not] mandatory as well, so I guess I just didn't [did not] learn a lot (PM).
	Can Learn Visually	1	There are also good sides of flipped learning because we learn visually (PN).

4.3.12. Theme 12: Flipped Learning Suggestions for New Teacher Trainees: Data Analysis

Participants were also asked to give their suggestions for the new trainees who will start their flipped learning course (Table 4.20). In three cases, participants suggested not taking flipped learning courses. Another participant suggested that a printer should be accessible within teacher trainees' households and that a lot of research should be conducted on how to learn with flipped learning (two cases), as quoted by one of the participants:

'*I would tell them to, you know, do a lot of research [on flipped learning]'* (PD).

In two cases, participants suggested choosing a lecturer who has the digital skills to convey course material in an effective manner in flipped learning; otherwise, they will encounter negative impacts in their development as teacher trainees, as quoted by one of the participants below:

'I would advise them to be very careful about the negative aspects I've [I have] talked about before and find a way to work around them. Because if they don't [do not], they are going to have a terrible time' (PI).

Furthermore, one of the participants stated that peer feedback is more effective than teacher feedback and that communication regarding this type of peer feedback is a key factor in flipped learning (one case), as noted by the participant below:

'It's [It is] very important to pick a group of friends who will support you through this course. Communication is important with both the teacher and other teacher trainees' (PN).

In two cases, participants suggested having good ICT skills when it comes to flipped learning and focusing on auto-didacticism (Table 4.20) within flipped learning, as stated below:

'I would tell them to focus on self-learning [Auto-didacticism] because they won't [would not] get any feedback [from their teachers] as I've [I have] noted' (PE).

Bergmann and Sams (2012) developed flipped learning to support the value of active and student-centred learning as well as the application and testing of knowledge previously engaged with independently in online sessions in synchronous learning and teaching sessions. The findings presented above and in Table 4.20 demonstrate the significance of investigating teacher trainees' perceptions, which is central to the study's rationale. These suggestions emphasize that the emphasis in GAU is on the flipped learning technology rather than how teachers, including teacher trainees, adopt, interact with, or learn from digital technology in the context of flipped learning at GAU (Cinarbas and Yagci, 2015).

Table 4.20. Flipped Learning Suggestions for New Teacher Trainees

Themes	**Initial Codes**	**Frequency**	**Representative Statements from the Interviews**
Flipped Learning Suggestions for New Teacher Trainees	Do Not Take Flipped Learning Courses	3	I would tell them to research, flipped learning. They [can] maybe use Google or YouTube. They should not trust our university's flipped learning courses (PA).
	Buying a [Home] Printer	1	Buy a [home] printer (PC).
	Doing a Lot of Research	2	I would tell them to, you know, do a lot of research [on flipped learning] (PD).
	Choose a Lecturer Who is Good [Skilled] in Flipped Learning	2	I will tell them to if they have the option to choose a lecturer who's [who is] good [skilled] at flipped learning, and who will help them become a good [skilled] teacher within flipped learning (PF).
	Find a Way to Work with Negative Aspects	2	I would advise them to be very careful about the negative aspects I've [I have] talked about before and find a way to work around them. Because if they don't [do not], they are going to have a terrible time (PI).
	Peer Feedback is More Important as Compared to Teacher's Feedback	1	More important than teacher feedback as you help each other and you give each other feedback, more than your teacher (PN).
	Communication is the Key	1	It's [It is] very important to pick a group of friends who will support you through this course. Communication is important with both the teacher and other teacher trainees (PN).

Themes	Initial Codes	Frequency	Representative Statements from the Interviews
Flipped Learning Suggestions for New Teacher Trainees	Make Sure to Have Good ICT Skills	2	I would tell them if they want to be a teacher, they have to put up with it and make sure they have good ICT skills (PO).
	Focus on Self-Learning [Autodidacticism]	2	I would tell them to focus on self-learning [Autodidacticism] because they won't [would not] get any feedback [from their teachers] as I've [I have] noted (PE).

4.4. Answering the Research Question: Discussion of 'Linking' the Qualitative and Quantitative Results of the Factors that Affect Teacher Trainees' Experience in Flipped Learning

The quantitative data (twenty-six Likert scale statements) and qualitative data (open-ended questions and interviews) collected using exploratory sequential mixed methods (Creswell and Clark, 2007) were interpreted in terms of the factors that affect teacher trainees' experience in flipped learning by interpreting them through the philosophy of pragmatism (Chapter 3). As stated in the methodology chapter, the interpretation of these findings (factors) is how teacher trainees individually interpret the content knowledge they receive in flipped learning while acknowledging which factors affect their experience within flipped learning based on their background. perceptions, to decipher the main research question re-stated below.

Main Research Question:

What are teacher trainees' perceptions of the factors that affect their flipped learning experience in Girne American University?

The following sub-sections will discuss these accounted factors as they are interpreted throughout the interlinked quantitative and qualitative results, in accordance with the literature review thoroughly discussed in Chapter 2, by using mind-maps to justify the accounted factors to the reader. As a result, first, by discussing the four factors influencing teacher trainees' flipped learning experience in GAU regarding the *Community of Inquiry*, learning preferences, learning personalities, and motivation (including self-efficacy) in relation to both quantitative and qualitative data interlinked. Second, by discussing teacher trainees' stated perceptions of factors influencing their flipped learning experience in GAU and categorizing them into three primary categories by interlinking quantitative and qualitative data as follows: first, comprehension and experience of flipped learning: regarding teachers who lecture teacher trainees. Second, *TPACK* policy: teacher trainees; and finally, accessibility issues with flipped learning.

4.4.1. Factors that Affect Teacher Trainees' Flipped Learning Experience in GAU

This study observes that the interlinked qualitative and quantitative results of factors influencing teacher trainees' flipped learning experience, first show that motivation, including self-efficacy, is not a factor influencing teacher trainees' flipped learning experience. Despite this, the quantitative findings revealed that 33.30% (thirteen) of the forty participants agreed that motivation, including self-efficacy, influenced their flipped learning experience. Concerning the use of the 'mean standard deviation' rationale, which was formally discussed in Chapter 3, to ensure that all forty responses are considered and the majority decision is taken into account within the 95% confidence interval regarding reliability, Chapter 3: Table 3.9 shows the reliability result of 'good' using descriptive statistics. Although elements of extrinsic motivation can be found in the qualitative data (open-ended questions and interviews).

Furthermore, no evidence of self-efficacy was found in the qualitative data. Extrinsic motivation can be linked to the justification that, as discussed in the literature review,

motivation in Northern Cyprus is associated with academic success in relation to taught literature (Clark *et al*., 2014; Guay *et al*., 2010).This was also acknowledged in a study by Safaklı and Ihemeje (2015), which focused on the impact of intrinsic and extrinsic motivation on learning among international students at the European University of Lefke in Northern Cyprus and found that students with extrinsic motivation performed better academically. Furthermore, as noted in the literature review, teacher trainees enter teacher training programmes with high expectations of self-efficacy (Kass and Miller, 2015). Therefore, self-efficacy as a factor that affects teacher trainees' experience in flipped learning may need to be further explored, which will be further discussed in Chapter 5's concluding remarks regarding the recommendations section.

Second, the interlinked qualitative and quantitative findings indicated that the *Community of Inquiry* and learning personalities were both factors influencing teacher trainees' experience with flipped learning at GAU, as both ranged at 62.50 % acceptance in the quantitative results and emerged in the qualitative results. The following paragraphs will first discuss the interpretation of the initial codes of the *Community of Inquiry* before moving on to learning the initial codes of personalities.

Because teacher trainees' perceptions of the factors were based on the impact of the type of communication they experience with their peers and lecturers in flipped learning, the initial codes of the *Community of Inquiry* highlighted the importance of social presence in the *Community of Inquiry* through the interlinked qualitative and quantitative results. First, the social presence of the *Community of Inquiry* in terms of peer work was an important factor that influenced teacher trainees' experience with flipped learning. The social presence of the *Community of Inquiry* is also noted in the initial code in the qualitative results as: 'interpersonal relationships within flipped learning,' and is summarised in Figure 9 below, created through teacher trainees' perceptions of the factors influencing their flipped learning experience at GAU, including quantitative results of agreement on the topic of social presence ranging from 75–82.5% of participants. Overall, this confirms the argument presented in the literature review by Garrison, Anderson and Archer (2001) and thebenefits of the *Community of Inquiry* include collaboration and that the:

[Community] of Inquiry framework brought them together to appreciate the value of learning together and help them improve connections and collaboration for a meaningful learning experience (Garrison, Anderson and Archer, 2001, p.3).

Therefore, teacher trainees in GAU find that primarily peer work and communication between all members in the form of collaborations (including teachers and fellow teacher trainees) in the form of social presence are one of the factors that affect their experience within flipped learning.

Figure 9. **The Interlinked Qualitative and Quantitative Results** ***Regarding Interpersonal Relationships Within Flipped Learning (COI: Social presence)***

Furthermore, this study observes that because teacher trainees can propose factors that affect them based on the implementation (design) of their flipped learning course within their perceptions, teaching presence in the *Community of Inquiry* is an agreed factor in the quantitative and qualitative results combined. Finally, cognitive presence in COI is an agreed-upon factor, as teacher trainees can decipher how they learn or understand the material presented in their flipped learning course through their perceptions as a factor that affects their experience of this type of learning, as seen in quantitative and qualitative results combined.

Based on cognitive presence and teaching presence in relation to the notion of auto-didacticism defined in this chapter, it can be noted that, while this echoes the intent of flipped learning's origins in Western culture, it is based on the goal of assisting students in thinking critically and autonomously using IT in the twenty-first century (Joynes, Rossignoli and Fenyiwa, 2019).The participants' auto-didacticism is viewed negatively by teacher trainees in GAU, as these teacher trainees are engaging in a form of auto-didacticism to not think critically or assimilate any form of positive attributes intended by the origin of flipped learning, as noted. Rather, they use autodidacticism as a rallying cry to improve their digital literacy through flipped learning. In response to this outcry, the next sections of this study will provide suggestions for these participants.

The importance of the combination of teaching presence and cognitive presence was also evident in the teacher trainees' perceptions of which factors affect their experience in flipped learning, as summarised in Figure 10 below.

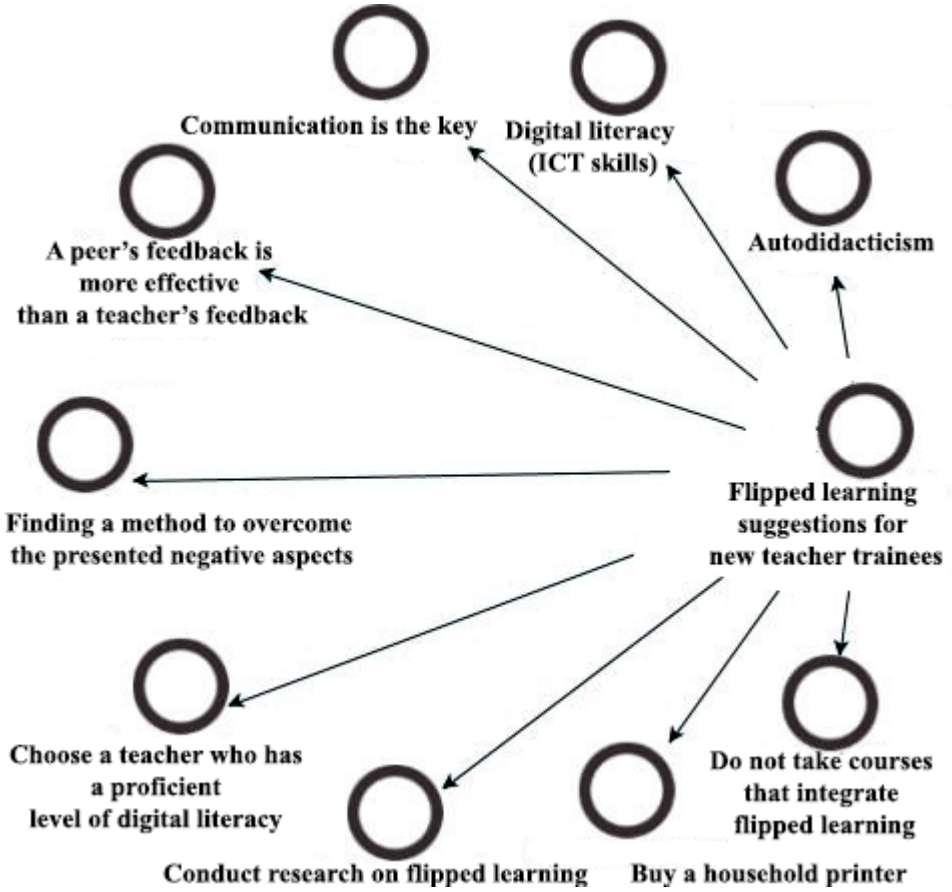

Figure 10. The Interlinked Qualitative and Quantitative Results Regarding Flipped Learning Suggestions for New Teacher Trainees

Based on the figures and discussion presented above, it is possible to conclude that the importance of teaching presence in the strategy, enablement, and achievement of independently meaningful and educationally important learning outcomes based on cognitive and social presences through flipped learning is a factor that influences teaching trainees' perceptions of their experiences at GAU.

Through this result, this study observes that when designing a flipped learning course, using the *Community of Inquiry* and its three presences of social, teaching, and cognitive elements can provide a more effective flipped learning experience. Because this study was conducted in a higher education setting, tailoring courses based on the *Community of Inquiry* on flipped learning at GAU and other Northern Cyprus higher education institutes can provide an

experience that is suitable to teacher trainees' perceptions of the factors that affect them in flipped learning. The initial purpose for which Garrison (2017) established the *Community of Inquiry*'s theoretical framework, to provide an educational lens in the world of flipped learning from the perspective of students rather than a technological perspective, is highlighted in the literature review. The *Community of Inquiry* demonstrates a commitment to assisting learners in developing autonomous and independent thought while also developing this independence of thought within the context of a social setting (Garrison, 2017). As a result of the study's findings, teacher trainees in GAU expect the *Community of Inquiry* to initiate a meaningful, complete learning environment for themselves in flipped learning through their perceptions.

As previously stated, the following paragraphs will now discuss learning personalities as a factor that affects teacher trainees' experience in flipped learning in GAU, before moving on to discuss the remaining factors noted by GAU teacher trainees.

4.4.2. Learning Personalities

This study observes that learning personalities in the qualitative data initial codes demonstrated that although 62.50% (twenty-six) out of the forty participants agreed with all eight types of the learning personalities (Chapter 2), only two types of learning personalities occurred in the mentioned qualitative data results as 'extraverted feeling types' and 'introverted feeling types', summarised in Figure 11 below.

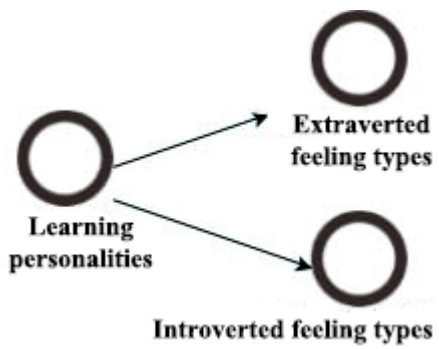

Figure 11. Learning Personalities (Qualitative Data)

This study contends that learning personalities can influence teacher trainees in flipped learning and that flipped learning can influence the learning personalities of teacher trainees. Prior to this study, the personality types defined by Jung (1954) had not been thoroughly investigated in the context of teacher trainees in flipped learning. This is an important point because the factor of learning personalities in teacher trainees' perceptions as a factor influencing their flipped learning experience in GAU demonstrates the importance of focusing on the personality types outlined by Jung (1954). This is supported by a recent study (Keshavarz and Hulus, 2019), which was conducted in a private university in Northern Cyprus and is discussed in the literature review, which observes, based on the study's findings, that students' personalities play an important role in increasing their motivation to use flipped learning, as their personalities determine the method they prefer to learn with. As a result, using Jung's (1954) personality types to accommodate learning personalities as a factor that affects teacher trainees in flipped learning can improve a teacher trainee's experience in flipped learning.

With this final point, both the *Community of Inquiry* and the learning personalities have been discussed using a combined interpretation of quantitative and qualitative data. The following sections will examine learning preferences as one of the factors influencing teacher trainees' experiences with flipped learning at GAU.

4.4.3. Learning Preferences

A total of 85% (thirty-four) of forty participants, including 100% (fifteen) of the fifteen interviewees, all agreed on seven types of learning preferences (summarised in Figure 12 below) and agreed that they were a major factor that affected their experience in flipped learning in GAU. Therefore, learning preferences are agreed upon within this study.

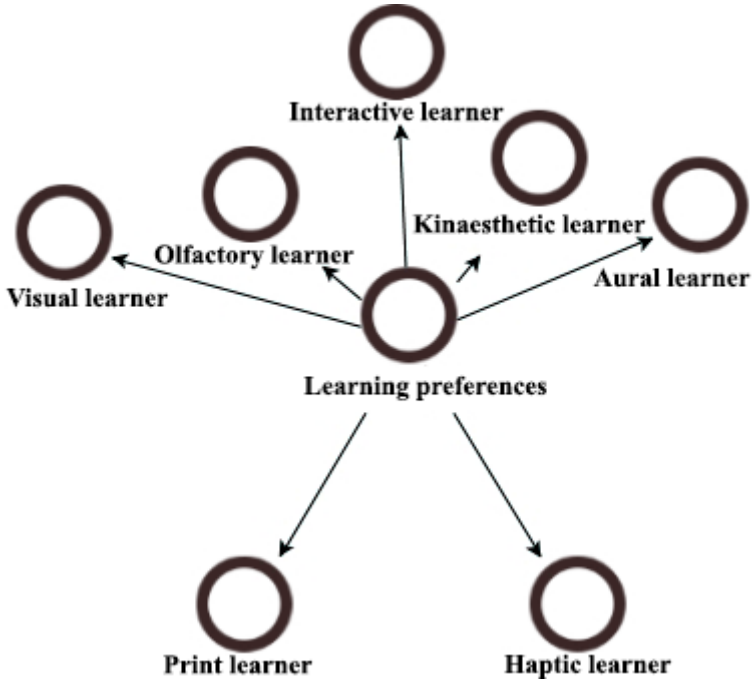

Figure 12. The Interlinked Qualitative and Quantitative Results: Learning Preferences Selected by the Teacher Trainees in GAU

This study discussed and observed the use of learning preferences (Nahla, 2014) in the literature review, as well as the exposure teacher trainees at Girne American University have contributed to the debate in research on learning styles between psychology and education across Western and non-Western teacher education programmes. Through previous Western examples based on educational reform noted in Chapter 1, in relation to the imitation of Western practices in Northern Cyprus, in relation to the argument that in the field of educational psychology, the notion of 'learning styles' is not supported by empirical evidence (for example, Pashler *et al*., 2008; Willingham, Hughes and Dobolyi, 2015).

In terms of the qualitative and quantitative results, as shown in Figure 12, the influence of learning preferences plays a significant role in flipped learning for teacher trainees. All seven learning preferences, particularly 'print learners' and 'interactive learners,' were identified by GAU teacher trainees. Learning preferences have been agreed on because teacher trainees prefer to learn in a specific way in flipped learning owing to various factors they identify within their perception, as evidenced by the qualitative and quantitative findings of this

study. Furthermore, learning preferences are agreed on by another recent study (Altun and Serin, 2019), which was also discussed in the literature review, which concluded that when learning preferences are identified, teaching can be tailored to the needs of students through the use of teaching strategies, methods, and techniques, as well as the selection and implementation of appropriate teaching equipment. In addition, with learning personalities, educators in GAU and other Northern Cypriot higher education institutes can conduct a pre-course survey consisting of the learning preference types mentioned in this study to accommodate the acceptance of learning preferences as a factor that can affect teacher trainees in flipped learning.

However, based on the aforementioned debate in research on learning styles between psychology and education across Western and non-Western teacher education programmes, this study does not believe that a pre-course survey is sufficient to accommodate the acceptance of learning preferences, including the teacher trainees' 85% quantitative and qualitative acceptance of learning preferences mentioned at the start of this sub-section. Therefore, in upcoming sections, this study will consider teacher trainees' perceptions of the factors that affect their flipped learning experience stated in this section based on learning preferences by offering suggestions as an insider researcher.

Until now, the discussions have focused on the factors that influence teacher trainees' flipped learning experience in GAU by connecting the interpreted qualitative and quantitative findings. The following section will look at the other factors that teacher trainees identified through a combination of open-ended questions and interview questions that were answered and discussed throughout the qualitative results.

4.5. Discussion of Teacher Trainees' Perceptions of Factors that Affect Teacher Trainees' Flipped Learning Experience in GAU

The following sub-sections will further explore the combination of qualitative and quantitative data and the agreement of factors affecting the learning experience of teacher

trainees in their flipped learning through their perception, along with this study's argument on these agreed factors interlinked with the previous literature review.

4.5.1. Percentage of the Agreement for the Four Factors through the Perceptions of Teacher Trainees Based on their Experience with Flipped Learning

Figure 13 shows that motivation, including self-efficacy, is the factor that least affects teacher trainees in flipped learning based on the perception of teacher trainees themselves. Because a total of 66.7% (100% - 33.30% = 66.7%) of the participants did not agree that this factor affected their flipped learning experience, while the *Community of Inquiry* (62.50% [Table 4.7]), learning preferences (85.70% [Table 4.10]), and learning personalities (62.50% [Table 4.8]) in total are all factors that mostly affect the flipped learning experience of teacher trainees in their perception, overall, learning personalities, along with the previously discussed *Community of Inquiry* (Garrison, 2017), learning preferences (Nahla, 2014), and motivation (including self-efficacy) (Zhao, 2012; Bandura, 1997), as factors that can affect teacher trainees within GAU, shape teacher trainees' experience of a flipped learning context through their perceived factors. According to Kamal and Radhakrishnan (2019), personality assessments can be a useful tool for advising and guiding students. They also argue that it helps instructors understand students' personalities and, as a result, design courses that encourage students to engage more in learning, which is something that can be considered in teacher training programmes in terms of flipped learning.

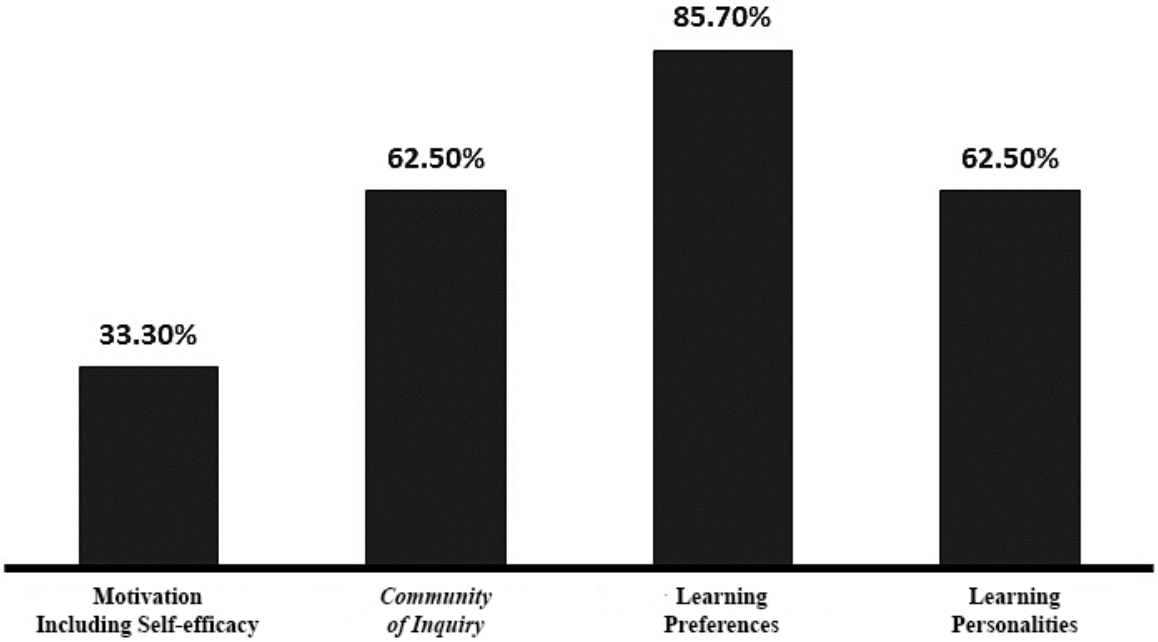

Figure 13. The Percentage of the Agreement of the Four Factors that Affect Teacher Trainees' Experience in Flipped Learning through their Perception

The results of the open-ended questions and interview questions were linked with the quantitative data of the agreed-upon major factors concerning the COI, learning personalities, and learning preferences. The voices of teacher trainees themselves, as observed throughout this study, are the most important missing factor in the relationship between teacher trainees and flipped learning in GAU. The three main themes that emerged from the voices of teacher trainees themselves as factors that affect them in flipped learning have been grouped in these open-ended questions and interview question results as: First, understanding and experience with flipped learning are important for teachers who lecture teacher trainees. Second, there is the *TPACK* policy regarding teacher trainees, and third, there are accessibility issues. Using the logic of Braun and Clark's (2006) thematic analysis with NVivo software, which is discussed in Chapter 3, Table 4.21 below shows how these results were 'grouped' into these three major themes.

Table 4.21. The Three Major Qualitative Themes of this Study

The Comprehension and Experience of Flipped Learning: Regarding Teachers Who Lecture Teacher Trainees	**The Policy of *TPACK* Regarding Teacher Trainees**	**Accessibility Issues**
Theme 12: Comprehension and Experience Theme 8: Teacher Feedback and digital literacy	Theme 7: Policy of *TPACK* Theme 13: The Efficacy of Flipped Learning in Teacher Trainees' Development	Theme 6: Accessibility Issues Theme 9: COVID-19

4.5.2. The Comprehension and Experience of Flipped Learning: Regarding Teachers Who Lecture Teacher Trainees

This study observes that when teacher trainees considered which factors affect their experience of flipped learning, the qualitative results revealed that comprehension and experience of teachers' (lecturers') feedback and digital literacy skills who educate teacher trainees in GAU through flipped learning programmes, as described in the introductory chapter, were crucial. The interpreted results are shown in Figures 14 and 15, which are summarised below.

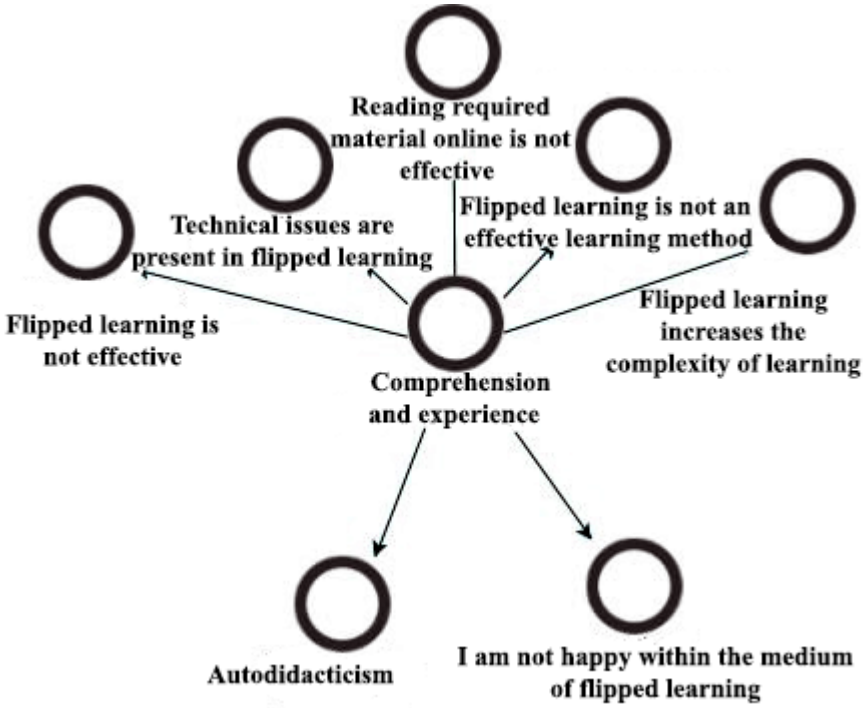

Figure 14. Initial Qualitative Code: Comprehension and Experience

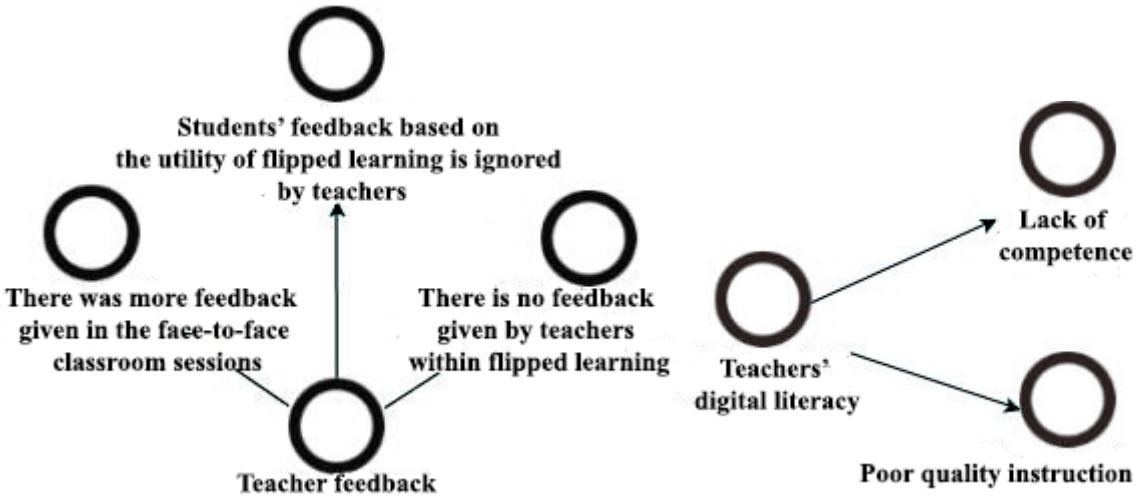

Figure 15. Initial Qualitative Code: Teacher Feedback and *Teachers' Digital Literacy*

Leading scholars Güzer and Caner (2016) stated in the study's introductory chapter that teacher education in Northern Cyprus should focus on the use of technology in teacher training as a mechanism to promote digital literacy within the flipped learning approach. However, this study observes that based on the quantitative and qualitative findings of teacher trainees' perceptions of their teachers' digital literacy, it can be concluded that before training teacher trainees on flipped learning, teachers themselves should be educated to have appropriate digital literacy in conveying flipped learning to teacher trainees. Teachers who lecture teacher trainees have shared their melancholy experiences with the use and lecturing of flipped learning with the teacher trainees in their programmes of study. This will be covered in greater depth in the following sections.

These difficulties can be linked to Northern Cyprus's primary goal of an economic pursuit of flipped learning rather than an educational value, based on the Republic of Türkiye's imitation of flipped learning for political and economic gain, as discussed in the introductory chapter, and Northern Cyprus's requirement to follow the Republic of Türkiye's education regulations (Pehlivan, 2018). The stated main rationale in Chapter 1 concerning this imitation in Northern Cyprus and the pedagogy of flipped learning in consideration of teacher trainee experiences is insufficient because, as noted throughout this study, it is written from the perspective of a policy focused on technology rather than from the perspective of a pedagogy involving the voices of teacher trainees within flipped learning (Jensen, 2019; Hao and Jiang, 2019). Educational policies based on incorporating technology into current teacher education programmes in Northern Cyprus create a tension between the perspective of technological gain for economic purposes and the pedagogy in Northern Cyprus when considering teacher trainees. When considering flipped learning, researchers and teachers have still primarily focused on the skills of 'digital natives' and 'digital immigrants,' as mentioned in Chapter 1.

First, based on teacher feedback, it is important to note that this was one of the identified gaps in literature in higher education flipped learning research during the literature review. The interlinking of the quantitative and qualitative results of this study demonstrates that this gap is critical to address, which is why this study has value in highlighting this, because this identified gap came directly from the perception of teacher trainees themselves. As previously stated, students in the literature review find flipped learning with constant

formative evaluation and constructive feedback beneficial as a type of individualised learning. Students who have participated in flipped learning sessions have stated that providing periodic individualised feedback can help improve their learning experience (Othman *et al*., 2022; Colomo-Magaa *et al*., 2020; Aljaraideh, 2019; Hessler, 2019).

Second, current arguments (for example, Virtue, 2020; Ayala-Perez and Joo-Nagata, 2019; Nikou, Brännback, and Widén, 2018) on the persistence of these terms (digital natives and immigrants), particularly in the context of recent advances in ICT and digital literacy in flipped learning, argue that there are significant differences between digital natives' familiarity (digital literacy) and digital technology implementation in informal versus formal higher education (Gentina and Chen, 2019). In a formal educational setting, however, many digital natives lack the specific digital literacy tools required to effectively use ICT in their studies (as argued by Bullen and Morgan, 2016).

Furthermore, in light of the findings of this study, Osiceanu (2015) contends that technophobia can be found not only among individuals regarded as digital immigrants (previous teachers) but also among students regarded as digital natives (current teacher trainees), as discussed in Chapter 1. As stated in the introductory chapter, there is a digital literacy gap because not all teachers and teacher trainees are familiar with the new ICT methods used in online learning. This has resulted in the specific phenomenon of 'teacher technophobia,' in which teachers and teacher trainees feel anxious about the pedagogical use of technology due to a lack of digital literacy and training, resulting in a gap between teachers and flipped learning (Celik, 2013; Rahimi and Yadollahi, 2011), which leads to the next discussion on teacher trainees' *TPACK* policy as a factor that affects these teacher trainees in their flipped learning experience.

Non-Western counterparts in Cyprus: for example, studies in universities in South Korea (Kim *et al.,* 2016) and the Republic of Türkiye (Cinarbas and Yagci, 2015) have discussed the shortcomings of flipped learning by focusing on students' and teachers' lack of digital literacy. This emphasis on digital literacy has also led Northern Cyprus to place a strong emphasis on the concept of digital natives and immigrants via the *TPACK* framework (Keshavarz and Hulus, 2019). A recent study by Nawaila, Kanbul and Mustapha (2019), looking at digital natives and immigrants in Northern Cyprus based on students' digital literacy in flipped learning, finds that only 60% of the 512 students studied (including

teacher trainees) have functional digital literacy, for example, having mastered Microsoft Office tools such as creating a PowerPoint file. They also note that, *'[undergraduates] are rarely treated as a distinct population, when it comes to program design and policy, they are often merged with adolescents or adults'* (Nawaila, Kanbul and Mustapha, 2019, p.2). The following paragraphs will discuss this focus on digital literacy through the policy of *TPACK* regarding teacher trainees in GAU, as noted by the participants and observed by this study through the literature review.

4.5.3. The Policy of *TPACK* Regarding Teacher Trainees

In the introductory chapter, it was noted that the Department of Education has commissioned leading academics to research flipped learning through Western counterparts. Furthermore, in this section it was discussed and observed by this study that in doing so, leading academics Güzer and Caner (2016) found that teacher education programmes in Northern Cyprus should focus on the application of technology into teacher training courses as a mechanism to develop digital skills with flipped learning. Based on Güzer and Caner's (2016) recommendation, the courses were designed under Koehler and Mishra's (2006) *TPACK* framework and integrated into the teacher training programmes in Northern Cyprus, for example, GAU.

Figure 16 summarises the perceptions of teacher trainees' thoughts on the policy of TPACK integrated into their flipped learning courses at GAU. Two out of the fifteen participants noted that the TPACK framework is 'beneficial' and helps them to 'learn how to produce materials'. The remaining participants stated in the interview that, overall, the TPACK framework focuses on ICT skills, and this focus has created a complex and overwhelming flipped learning environment for teacher trainees.

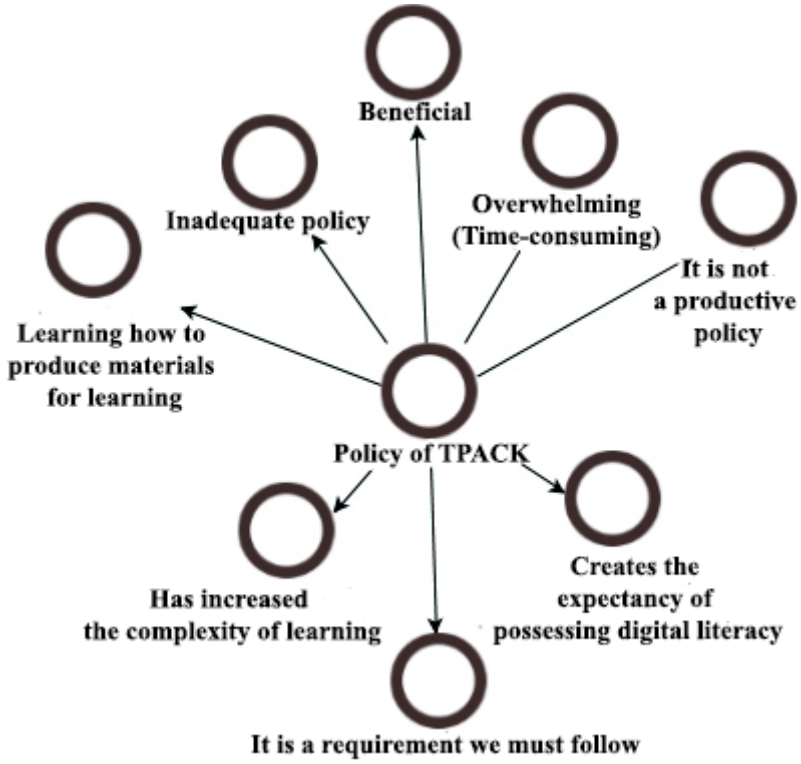

Figure 16. Policy of TPACK (Qualitative Data)

These perceptions 'based on the *TPACK* policy regarding participants' responses' suggest that the direct focus on the application of technology through *TPACK* (Güzer and Caner, 2016) might not be an efficient approach. This resonates with Cannell and Gilmour's (2013) argument that:

[Support] for engagement with new technology is sometimes seen as simply a question of developing new technical skills, there is evidence that, while in some circumstances staff may be reluctant to divulge deeper learning needs, technical training and pedagogical development are best considered together (p.2).

This direct focus on the application of technology through *TPACK* is additionally highlighted in studies based on the Republic of Türkiye and Northern Cyprus, for example, Polat and Karabatak (2021), whose focus within the *TPACK* frameworks is essentially on teachers' technical skills in flipped learning.

Moreover, this focus on digital literacy in the form of ICT skills has also led the interviewees, consisting of teacher trainees, to develop the initial code of 'the efficacy of flipped learning in teacher trainee's development,' in the qualitative and quantitative data combined, summarised in Figure 17 below. This initial code had arisen through the integration of *TPACK* into teacher trainees, flipped learning courses, as mentioned earlier, in the form of guidelines.

Overall, teacher trainees were divided on the notion that their flipped learning courses, while on the one hand helping them to develop their ICT skills, on the other hand diminished the educational value of their teacher education programme.

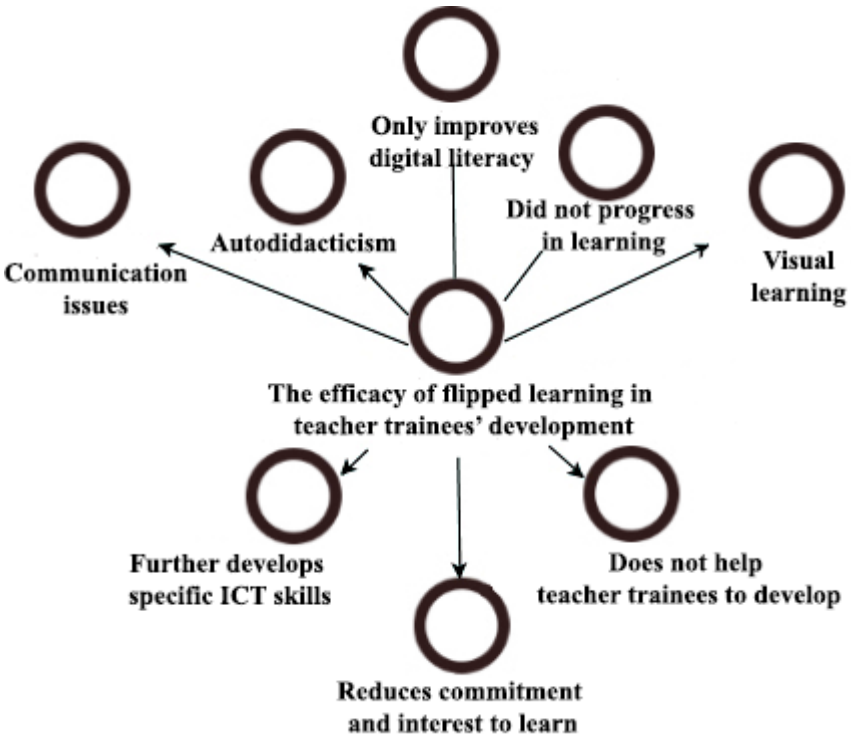

Figure 17. Initial Qualitative Code: The Efficacy of Flipped Learning in Teacher Trainees' Development

4.5.4. Accessibility Issues

The COVID-19 pandemic led to widespread lockdown orders, including in Northern Cyprus (Aslan, 2021; Bedford *et al*., 2020; Hechinger and Lorin, 2020). As a result, all

educational institutions in Northern Cyprus were closed and moved to online modes of instruction to comply with social distancing rules and laws based on the closure of non-essential institutions (Mahato, Pal and Ghosh, 2020; Viner *et al*., 2020). However, findings from this study suggest that this caused the benefits of face-to-face learning on campuses to diminish, for example, in relation to equal learning experiences in relation to IT facilities (Wang and Meltzoff, 2020). This led to problems for some in finding appropriate and reliable devices and internet connections to access online learning (Stiakakis, Kariotellis and Vlachopoulou, 2010), as noted both in Figure 18 and Figure 19 below in relation to COVD-19 and accessibility issues in the perceptions of teacher trainees.

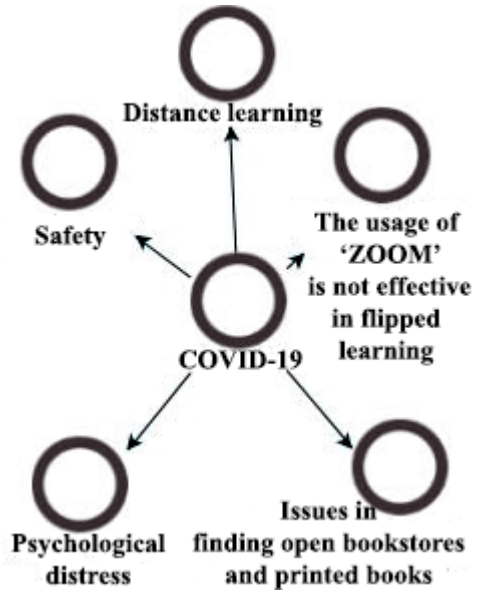

Figure 18. Initial Qualitative Code: COVID-19

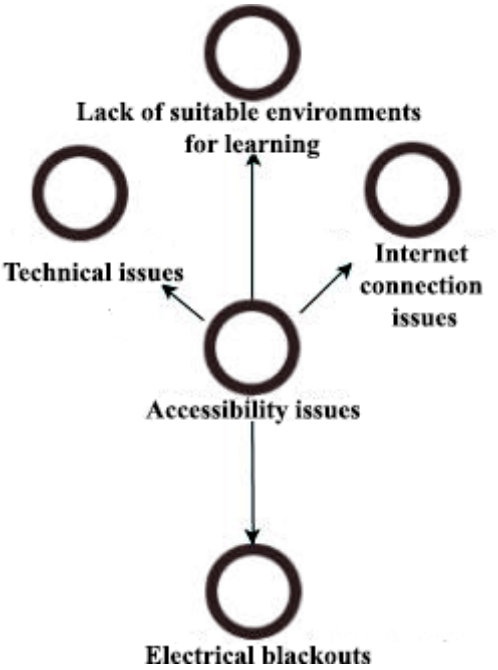

Figure 19. Initial Qualitative Code: Accessibility Issues

The United Nations Educational, Scientific and Cultural Organisation (UNESCO) (2015) describes accessibility as one of the key limitations of flipped learning. The crucial dimension of flipped learning is access to knowledge and interactive learning opportunities, for example, through a mixture of online and face-to-face learning sessions (Section 1.5.1). However, not all teacher trainees (or even their instructors) have the same opportunities to access these opportunities. This study observes that there can be many challenges in making full use of the internet and ICT in terms of access, expertise, and encouragement. Other digital inequalities exist even when access is available because many people do not have the skills and encouragement (as argued by White and Cornu, 2017) to make the most of these important resources. Inequalities online are often rooted in social, cultural, and geographical differences, both in Western and non-Western countries (Bedford *et al.,* 2020).

Furthermore, this study observes that a lack of internet access at home often restricts accessibility, restricting the possibility for students (including teacher trainees) to connect when schools are closed (Alvarado-Alcantar, Keeley and Sherrow, 2018). Digital inequalities in education (the digital divide) in non-Western countries (for example, Northern Cyprus) have been reinforced and highlighted by COVID-19 as the ability to use

videoconferencing equipment is disrupted by low broadband or a lack of access to ICT, as prices are particularly expensive in developing countries (Higginbotham, 2020). As a result, Northern Cyprus has experienced digital inequality, which has been further highlighted by the rapid increase in demand for access to online learning during the global COVID-19 outbreak, as seen through the perceptions of teacher trainees stated above in Figures 18 and 19.

4.6. Teacher Trainees' Perceptions of the Factors that Affect Their Flipped Learning Experience: Providing Suggestions as an Insider Researcher

The debate on learning preferences between Western and non-Western practices was discussed and argued in the literature review on the voices of students (teacher trainees) and their input into how they think and how they want to learn. The findings of this study revealed the need for suggestions for the adoption of learning preferences. From an insider researcher's stance, explanations and an alternative suggestion are provided below in sub-section of 4.6.1.

4.6.1. Learning Preferences in Western Versus Non-Western Practices: the *Learning Preference Barque* Suggestion (Created by the Researcher of this Study)

Developing from the debate on learning styles through the perspective of psychologists and educators in Western and non-Western cultures and the definition of learning preferences adopted by this study, the main study results presented in this chapter highlight the lack of the voices of students (teacher trainees in this study's context) and their input regarding how they think and prefer to learn. This is particularly important, as researchers have found that students can learn more about how they learn through metacognition and self-reflection on their learning preferences (Kaplan *et al*., 2013).

It can be argued that the values of the pragmatism applied in this study require an emancipatory response to the findings of this study. Furthermore, pragmatism in education recognises that the learner, often determined by their social and cultural environment, has prior knowledge and experience, as learning is conducted through the 'construction' of knowledge from learners' experiences (Sjøberg, 2010). Therefore, it is proposed that there

is a need for freedom from the dominance of the debate on learning styles by educators and psychologists and the assumptions they act on in order to accommodate student voices (especially teacher trainees') and their experience in knowledge as the dominant factors in the debate regarding learning preferences.

In response to the recognition of the involvement of learner voice, a new framework, the *Learning Preference Barque* (described in the next sub-section), which involves the advocation of students' (including teacher trainees') perceptions of their learning preferences and how they adapt and 'handpick' their preferences, is proposed. The next sub-section explores the theoretical *Learning Preference Barque*, by first providing a summary of the literature that underpins it and then describing the proposed framework and its place within the relationship between teacher trainees and flipped learning.

4.6.2. The *Learning Preference Barque*

This study observes that throughout higher education, students choose a learning preference or a mixture of learning preferences and advocate their preference(s) to their current teachers in higher education, which, depending on the ideas and abilities required to be learned, may influence the types of learning activities and tasks that can be used in university education (Pashler *et al*., 2008). This includes the notion that students may disagree with learning preferences set by educators and literature (for example, Willingham, Hughes and Dobolyi, 2015; Nahla, 2014; Pashler *et al*., 2008). Interestingly, some researchers (for example, Hsieh *et al*., 2011; Hawk and Shah, 2007) claim that educators in university education employ a 'style' of instruction that combines the methods they want to learn with the techniques they found to be useful in their own journeys of learning as students in universities. While the concept of learning styles has been challenged, teachers will benefit from paying close attention to students' learning preferences and their choices of whether to follow or ignore them to promote attendance, maintain student interest, and improve participation, thus increasing the opportunities for learning to take place. In a recent study on learning preferences (Newton and Miah, 2017), a majority of participants (higher education students) insisted that they would continue to use learning preferences regardless of being shown the absence of empirical evidence supporting them, a result that suggests that any 'avoidance'

of perceptual learning preferences may not be action. The following sub-section with regards to the above will explore the *Learning Preference Barque* from the above-stated standpoints regarding learning preferences and their place within students in higher education.

The *Learning Preference Barque:*

The barque student has flowed into the educational setting of higher education as a young adult (eighteen to twenty-one years old) (The American Academy of Paediatrics, 2020), though it must be noted that many adults (aged twenty-one years and older) enter higher education much later. In this phase of higher education, many students stick with their pre-assumed learning preferences and adopt them as their own or begin to explore new learning preferences that seem to help them retrieve information more efficiently than the preferences previously given to them by others. At this stage, many students choose to not associate with any personal learning preferences, either through personal judgement or based on the aforementioned vast literature of 'educators' versus 'psychologists' debating on the topic of learning styles and learning preferences. By exploring new learning preferences or choosing to walk away from them, students in this phase internalise contingent critical thinking and self-awareness as a form of autonomy in higher education (Pontius and McIntosh, 2020). Students' self-awareness is a form of autonomy, one in which learners make their conclusions instead of being influenced by someone else (Cherrier *et al*., 2020).

However, in this stage of the *Learning Preference Barque* is observed by this study, the reason many students start to develop their learning preference in higher education is that they tend to be exposed to degrees of critical, in-depth thinking skills shaped by institutional culture (whether in Western or non-Western cultures; Chapter 1) and learning authorities (Tierney and Lanford, 2017; Kaplan and Owings, 2014). This establishes the result of 'student's adopted learning preference.' Therefore, based on critical thinking skills, shaped by the institutional culture and learning authorities surrounding them (as mentioned in the latter), students unlock the potential of exploring different methods of learning preferences in this stage, which may lead them to use a mixture of learning preferences based on students' perceptions of which methods most support their learning of the subject matter they are given, or to disagree with the idea of learning preferences, as the choice is completely their own in doing so (McManus, Haddock-Fraser and Rands, 2017). The next sub-section will

explore the place of the *Learning Preference Barque* within the relationship between flipped learning and teacher trainees.

The *Learning Preference Barque,* Flipped Learning and Teacher Trainees

With regards to the *Learning Preference Barque* concerning the relationship between flipped learning and teacher trainees, the *Learning Preference Barque first* adds teacher trainees as members in the ongoing debate between educators and psychologists by considering their views and presenting their voice in this debate. Whether a teacher trainee adopts learning preferences or not, it is still the teacher trainee's voice that chooses how they prefer to learn.

Second, the *Learning Preference Barque,* occupies an important place within this study's context of Northern Cyprus. Teacher trainees are exposed to a vast body of literature in which educators and psychologists debate learning styles and learning preferences, discussed previously and observed in Chapter 2. Accordingly, the following paragraphs will highlight the value of the *Learning Preference Barque* as a theoretical framework within flipped learning in higher education, for example, teacher training programmes.

One study (Alves, Miranda and Morais, 2016) that associated virtual learning environments with learning preferences found that an undergraduate student's relationship with learning preferences and the use of virtual learning platforms, namely, in flipped learning, had a significant impact on academic performance. A higher percentage of surveyed undergraduates achieved a passing grade when the importance of their learning preferences was acknowledged. Furthermore, another study (Williams, Matt and O'Reilly, 2014) concluded that learning preferences have statistically significant variances amongst students, including many other researchers, both in Western and non-Western cultures (for example, Chang, Hung and Lin, 2015; Porumb, 2015; Wu, 2014; Juklova, 2013; Martinez de Monarrez and Korniejczuk, 2013) who additionally agree that learning preferences remain relevant in higher education and flipped learning.

Therefore, with regards to the above, researchers in the field of education would be taking a risk by disregarding learning preferences. Students' voices should be heard above those of educators and psychologists, especially the voice of teacher trainees, who are both students and future educators, with regards to the manner in which they prefer to learn.

Acknowledging the *Learning Preference Barque* theoretical framework can help educators create a more stimulating environment for teacher trainees in flipped learning. Perhaps this theoretical framework can offer suggestions of how to adapt flipped learning in a manner that reflects educational values from the viewpoint of teacher trainees themselves, which reflects the main rationale of this study (Chapter 1) and will be further discussed in terms of how to adapt this theoretical framework as recommendations for practice in Chapter 5, following the summary of this chapter in the next section.

4.7. The Summary of Chapter

This chapter has interpreted the data and aligned the interpretation of the data with the main research question. The results of the open-ended questions and interview questions were linked with the qualitative data of the agreed-upon major factors by the teacher trainees who participated in this study concerning the COI, learning personalities, and learning preferences. The voices of teacher trainees themselves, as argued throughout this study, are the most important missing factor in the relationship between teacher trainees and flipped learning in GAU. These open-ended questions and interview question results have been grouped into three main themes that emerged from the voices of teacher trainees themselves as factors that affect them in flipped learning, which are as follows: First, understanding and experience with flipped learning are important for teachers who lecture teacher trainees. Second, there is the *TPACK* policy regarding teacher trainees, and third, there are accessibility issues. Using the logic of Braun and Clark's (2006) thematic analysis with NVivo software, which is discussed in Chapter 3.

The results of the open-ended questions and interview questions were linked with the quantitative data of the agreed-upon major factors concerning the COI, learning personalities, and learning preferences. The voices of teacher trainees themselves, as argued throughout this study, are the most important missing factor in the relationship between teacher trainees and flipped learning in GAU. The three main themes that emerged from the voices of teacher trainees themselves as factors that affect them in flipped learning have been grouped in these open-ended questions and interview question results as: First, understanding and experience with flipped learning: for teachers who lecture teacher

trainees. Second, there is the *TPACK* policy regarding teacher trainees, and third, there are accessibility issues. Using the logic of Braun and Clark's (2006) thematic analysis with NVivo software, which is discussed in Chapter 3, Table 4.21 reproduced below, shows how these results were 'grouped' into these three major themes.

Section 4.5.1: Table 4.21. The Three Major Qualitative Themes of this Study

The Comprehension and Experience of Flipped Learning: Regarding Teachers Who Lecture Teacher Trainees	**The Policy of *TPACK* Regarding Teacher Trainees**	**Accessibility Issues**
Theme 12: Comprehension and Experience Theme 8: Teacher Feedback and digital literacy	Theme 7: Policy of *TPACK* Theme 13: The Efficacy of Flipped Learning in Teacher Trainees' Development	Theme 6: Accessibility Issues Theme 9: COVID-19

Through these mentioned analyses, the results of this study, concluded that there are six main factors that affect teacher trainees' experience in flipped learning, through their perceptions as:

1. The learning preferences of teacher trainees
2. The *Community of Inquiry* of teacher trainees
3. The learning personalities of teacher trainees
4. The comprehension and experience of flipped learning: regarding teachers who lecture teacher trainees
5. The policy of *TPACK* regarding teacher trainees
6. Accessibility issues

The teacher trainees noted that, in summary, their overall experience of flipped learning was as shown in the following Table 4.22, through representative statements from interviews and open-ended questions using Braun and Clarke's (2006) thematic analysis, in accordance with the rationale provided in Chapter 3 and how this study explored and interpreted these initial codes to come to be.

Table 4.22. Teacher Trainees' Overall Experience of Flipped Learning

Themes	Initial Codes	Representative statements from the Interviews and Open-ended questions
Over all views (experience) Based on Flipped Learning	A Very Bad Experience	Flipped learning is just [a type of] depression (PA).
	Don't [I Do Not] Want to be an Online Teacher	I don't [do not] ever want to be an online teacher (PA)
	Flipped Learning wasn't [Was Not] Worth it	Because we live in the moment of things happening, as I think about it, the money, the time I had to waste on flipped learning. It just wasn't worth it. I really wish it was. In fact, I hope somehow, one day, we'll [we will] be able to find a way (PC)
	Negative Impact of Flipped Learning	I don't like constantly getting homework, as I've [I have] talked about before in the questionnaire. It's [it is] just you are always on the laptop and I don't have the discipline for it. So, I guess I've become more of a negative student (PE).

	Limited Interaction in Flipped Learning	It has made my relationships with my friends terrible, I'm [I am] not able to interact, and there is no time to interact in flipped learning (PG).

Themes	**Initial Codes**	**Representative Statements from the Interviews**
Over all views (experience) Based on Flipped Learning	Can't Keep Track of Everyone in Flipped Learning	You can't [cannot] keep track of everyone, for example, what they're [they are] doing at the same time (PH).
	I Do Not Approve of Flipped Learning	I do not approve [of] flipped learning. I don't [do not] find it suitable for a student to learn [how to] teaching [teach] online because teaching should be taught face to face with our mimics [and] with our hand movements (PK).
	Flipped Learning Provides Opportunity for Learning	Flipped learning is an opportunity given through videos and live lessons, but I am not very involved in this system. This is because I think the lessons on flipped learning are easy (PK).
	Working in Groups Fails in Flipped Learning	Not everyone has the discipline for flipped learning in order to manage their own education, therefore, group work fails (PK).

	Not Suitable for All Courses	Flipped learning is not suitable for all courses. For example: making 3D course materials (PK).
	Flipped Learning Provides an Informal Environment	Flipped learning is a more relaxed and informal environment (PK).
	Limited to Online Learning	In flipped learning, I have been taking video conference courses and submitting assignments online (PK).

Themes	**Initial Codes**	**Representative Statements from the Interviews**
Over all views (experience) Based on Flipped Learning	Insufficient	In flipped learning I have been taking video conference courses and submitting assignments online, it has been more than a year since I have been doing my studies with flipped learning. It has not been easy, and I am still trying to adapt. I believe everyone is trying their best to cope up [with it], however, in my opinion, when being compared to face-to-face education, communicating and learning, [in] the digital environment is not as efficient [or] enough (PK).

Finally, this chapter has provided suggestions from an insider researcher's stance (further discussed in Chapter 5), drawing on the six main factors mentioned above in teacher trainees' perceptions of the factors that affect their flipped learning experience, with the researcher of the study developing the Learning Preference Barque theoretical framework based on students' (including teacher trainees') voices in selecting their learning preferences. The following chapter will provide a conclusion to this study on this basis.

CHAPTER 5. CONCLUSION

5.1. Overview

This chapter begins by revisiting the main research question in conjunction with the data analysis of the main study presented in Chapter 4 to provide an answer to the research question. The study's limitations are then discussed, leading the way for this study to reflect on the methodology used and the mentioned researcher's insider research stance. Finally, with a final remarks section, it revisits the value and contribution of this study by also stating practice recommendations.

5.2. Consideration of Teacher Trainees' Perceptions of the Factors that Affect their Flipped Learning Experience in GAU

The Main Research Question of this Study is:

What are teacher trainees' perceptions of the factors that affect their flipped learning experience in Girne American University?

In response to this question, this study identifies six main factors that affect teacher trainees' experience in flipped learning through their perceptions, as revisited in Table 5.1 below and previously explored in Chapter 4.

Table 5.1. The Summary of Teacher Trainees' Perceptions of the Main Factors that Affect their Flipped Learning Experience in GAU

1. The Learning Preferences of Teacher Trainees
2. The *Community of Inquiry* of Teacher Trainees
3. The Learning Personalities of Teacher Trainees
4. The Comprehension and Experience of Flipped Learning: Regarding Teachers who Lecture Teacher Trainees
5. The Policy of *TPACK* Regarding Teacher Trainees
6. Accessibility Issues

The results of the open-ended questions and interview questions were linked with the qualitative data of the agreed-upon major factors concerning the COI, learning personalities, and learning preferences, as noted in Chapter 4. The voices of teacher trainees themselves, as observed throughout this study, are the most important missing factor in the relationship between teacher trainees and flipped learning in GAU. These open-ended questions and interview question results have been grouped into three main themes that emerged from the voices of teacher trainees themselves as factors that affect them in flipped learning, which are as follows: First, understanding and experience with flipped learning are important for teachers who lecture teacher trainees. Second, there is the *TPACK* policy regarding teacher trainees, and third, there are accessibility issues. Using the logic of Braun and Clark's (2006) thematic analysis with NVivo software, which is discussed in Chapter 3.

Table 5.1 highlights the six factors that influence teacher trainees' perceptions of their flipped learning experience at GAU. Beginning with learning preferences as identified by Nahla (2014), were found to be highly valued by GAU teacher trainees. Although, as discussed in this study, the term ‘learning styles’ is not supported by empirical evidence in Western practices (for example, Willingham, Hughes, and Dobolyi, 2015; Pashler *et al*., 2008), the findings of this study conclude that the learning preferences proposed by Nahla (2014) are valid and are still used today within non-Western cultures, specifically teacher trainees in GAU. As a result, refuting their perceptions, as previously discussed

in Chapter 2, would be a form of inequality because the decision whether to adhere to or not to acknowledge learning preferences should always be made by students in higher education. This is especially true for teacher trainees, who are confronted with the literature debate between psychology and education on learning styles as well as the effect of this debate on learning preferences in Western and non-Western teacher education programmes (for example, Pashler *et al*., 2008; Willingham, Hughes and Dobolyi, 2015). As a result, the study's researcher provided *the Learning Preference Barque* framework (Chapter 4) to support the future of non-Western education in terms of flipped learning and other forms of educational practices.

Second, the *Community of Inquiry* (Garrison, 2017), with its teaching, cognitive, and social presences, with regards to the findings, supports the study's contention that the literature on flipped learning pedagogy is insufficient for teacher trainees because educational policies shape the literature in the form of technological development in response to economic gain, rather than the voices of teacher trainees and their perceptions of how they learn through flipped learning (Wong, 2018; Genkins, 2017). Instead of focusing solely on Western imitation of practices based on economic gain, as discussed in detail in the introductory chapter, flipped learning will be more effective when considering how a flipped learning course is designed through a teaching presence to create a meaningful session, a social presence to create a trusting environment and build interpersonal relationships, and a cognitive presence to create understanding through flipped learning based on learner engagement (Nahla, 2014; Jung, 1954). Third, the aforementioned learning personalities identified by Jung (1954) were deemed important among the factors influencing teacher trainees' flipped learning experience at GAU. As previously stated, these personalities, along with learning preferences and the *Community of Inquiry*, can be used to promote a more meaningful and tailored learning method for teacher trainees to thrive in.

With this discussion, the factors that affect teacher experience in flipped learning, which include the *Community of Inquiry*, learning preferences, and learning personalities, have been identified as critically important in terms of their effect on flipped learning perceptions by teacher trainees. The remaining themes that emerged as factors influencing teacher experience in flipped learning in Table 5.1 will be discussed in the following sub-

sections as the long-term influence teachers have on teacher trainees and the Western imitation in Northern Cyprus based on the Department of Education's *TPACK* policy regarding accessibility issues, as highlighted by this study's teacher trainees (Table 5.1). It is important to note that these two sub-sections are consistent with this study's summary of the main positions explored in the literary review, which is based on the findings of the main study, which is discussed and interpreted in Chapter 4.

5.2.1. The Long-term Influence Teachers Have on Teacher Trainees

Findings from this study indicated that teachers who educate teacher trainees leave an impression in the long run. Teachers who educated teacher trainees had a significant impact on their perceptions of factors influencing their flipped learning experience. Beginning with the *Community of Inquiry* (Garrison, 2017), the teacher trainees of this study found in the mixed method data in Chapter 4 that teaching presence and cognitive presence in the way teachers design and facilitate flipped learning courses were not meaningful and student-centred, including inconsistencies about their learning preferences and learning personalities. Furthermore, in this study, teacher trainees noted in the interlinked mixed method data in Chapter 4 that communication in GAU flipped learning courses did not exist or felt artificial.

Furthermore, owing to teachers' lack of feedback and assumptions about teacher trainees' digital literacy (ICT skills), teacher trainees found that they were unable to 'develop' as teacher trainees. Based on the foregoing, it is possible to conclude that teachers who educate teacher trainees are very important because of the impactful influences they have on teacher trainees, as evidenced by the findings of the study mentioned in the latter. Echoing the statement made by the first president of the Republic of Türkiye, Mustafa Kemal Atatürk, in Chapter 2, in which he noted that, '*[the] future generation is the product of a teacher's devotion, as the value of a teachers work will be in accordance with their skill and dedication'* (reverberated by Seker and Ozdemir, 2012, p. 2895).

Based on that, it is possible to conclude that teachers who educate teacher trainees are very important because of the effective influences they have on teacher trainees, as evidenced by the findings of the study mentioned in the latter. For this reason, this study proposed the *Learning Preference Barque* framework (Chapter 4) as a part its main rationale of finding factors that affect teacher trainees in flipped learning through their perceptions. This study will also explore further recommendations for practice concerning training for teachers who educate teacher trainees in flipped learning in the upcoming sections.

5.2.2. Western Imitation in Northern Cyprus: *TPACK* and Accessibility

Throughout this study, the theme of Western imitation has rested heavily on the metaphorical shoulders of this research concerning teacher trainees at Girne American University. Yet, as the famous quote by Confucius states, as reverberated by McDonald (2003):

[It] is better to fail in originality than to succeed in imitation. Imitation is the sincerest form of flattery. By three methods, we may learn wisdom: First, by reflection, which is noblest, Second, by imitation, which is easiest, and third by experience, which is the harshest (Mcdonald, 2003, p.30).

The truth of GAU's Western imitation is highlighted throughout Chapter 2. Regarding the fact that GAU was founded in 1985 by Mr Serhat Akpinar as a replica of American higher education (as noted by Al-Momani, Pilli and Fanaeian, 2014), this foundation is built on 'American-style' higher education, which is a direct correlation to the imitation of Western approaches discussed in the introductory chapter.

This study noted throughout Chapter 4 that the imitation of flipped learning based on Western culture for economic gain as an application of technology has led to a disregard of educational value for teacher trainees and the future of their teaching career based on the notion of flipped learning. Although flipped learning has many potential student-

centred benefits (Webb *et al.,* 2021), imitation must remain a form of 'reflection,' as stated in the Confucius quote reverberated by McDonald (2003). Since the experience of this imitation has led to the truth as stated by the teacher trainees' perceptions discussed in Chapter 4, their voices of concern require the focus on the six factors they have stated, which have been summarised in Table 5.1. As a result of focusing on these factors, liberation from this imitation is possible. This liberation is critical because Northern Cyprus has created an unbreakable cycle of dystopia in which Western dominance is used to remove the educational value of flipped learning promised by its origins, as discussed in the introductory chapter, without considering the factors that influence teacher trainees' perceptions. With this final point, the following section will formally discuss the limitations of this study.

5.3. Limitations to this Study

Chapter 3 examined the study's limitations and defined research limitations as factors that the researcher could not control during the main study (Greener, 2018). Based on the findings and discussions in Chapter 4, three major limitations emerged in the analysis of this study:

The first limitation relates to the questionnaire items in terms of clarity issues and the negative connotations of the wording of some questionnaire items. Issues around clarity brought into light consist of the following:

First, the questionnaire item of the opened-ended questionnaire, 'Q1: *What inspired you to become a teacher trainee?'* (Appendix B), is asking teacher trainees to state their goal of becoming a trainee, not a teacher, which is the goal of their programme. Therefore, this miswording created a clarity issue in terms of stylistic clarity (Dant, 2013), which will be further discussed below with the second clarity issue. Second, in terms of clarity issues, there are two statements instead of one in the four questionnaire items (Appendix B) stated in Table 5.2.

Table 5.2. Statements Concerning the Clarity Issue of Integrated Double Statements

Q.9 '*I prefer to learn with printed materials, reading books, and a whiteboard for writing instead of flipped learning*.'
Q.10 '*I prefer to engage in authentic discussions and asking questions in real life instead of digitalized (typed) discussions and answers online.*'
Q.12 '*I prefer to work and make choices on my own. Thus, mandatory peer work in flipped learning demotivates me*.'
Q.19 *'Flipped learning stimulates swift brainstorm sessions that enable a student to see links between them and events.'*

Accordingly, questionnaire items should only have one specific statement. If there are two statements, then it is not known which statement the participant has responded to; in turn, this creates a clarity issue in this study's findings, in addition to the miswording of the 'teacher trainees' instead of 'teacher' in the first stated clarity issue, with regards to these issues. Dant (2013) argues that, as noted above, they are a type of stylistic clarity that can be promoted by direct, simple language, as directly phrased sentences achieve linguistic simplicity. However, it is important to note that, as discussed in Chapters 3 and 4, this study has achieved validity and reliability based on the usage of Cronbach's Alpha descriptive statistics to achieve the reliability result of 'good' in Chapter 3: Table 3.9 shows the 95% confidence interval for the calculation of the central tendency (calculating the mean), the ten participants per item of a scale, and that qualitative studies require a sample size of at least twelve participants to achieve data saturation, as discussed in Chapter 3 (Boateng *et al*., 2018; Machin *et al*., 2018; Braun and Clarke, 2013; George and Mallery, 2003)

Finally, the questionnaire items (Appendix B) were negatively worded (for example, 'demotivates me,' 'does not stimulate,' and 'never want to retake'). Suárez-Alvarez *et al*. (2018) argue that, to maintain the bias as minimal as feasible, a Likert type scale should

have an ordered continuum of response categories and a balanced amount of positive and negative possibilities.

However, as argued by Chyung, Barkin and Shamsy (2018), negatively phrased questions are those in which disagreeing would be an appropriate response. Negatively worded questions are commonly included in surveys to reduce weariness and deter respondents from selecting the same answer multiple times.

Furthermore, Salazar (2015) argues for the use of negative items to reduce acquiescence bias, which occurs when people tend to agree with statements regardless of their actual content. They also contribute to the measurement's validity by broadening how people think about and organise their beliefs about the construct under study. Other studies (for example, Weijters and Baumgartner, 2012; Sauro and Lewis, 2011) show that combining positive and negative items does not reduce acquiescence bias and that the number of extreme responses is comparable for both types of items. With this last statement, this completes the discussion of the first primary limitation. The following paragraph will discuss the second primary limitation.

The second limitation relates to the issue of researching during a pandemic. In this context, conducting this research uncovered factors (research limitations) in both quantitative and qualitative methodologies while also affecting the well-being of both the researcher and the participants (Dodds and Hess, 2020). To mitigate these factors, as shown in Chapter 3, the study considered and utilised solutions by following the BERA's (2020) recommendation to educators and researchers to follow the proposed *'COVID-19: Guidance for Education Settings'* established by Public Health England (2020) in collaboration with the BERA (2020), including the British Psychological Society (BPS) ethical guidelines drafted by Krotoski and Oates (2017) regarding internet-mediated research. Furthermore, as mentioned in Chapter 1, this study lays the groundwork for future research into how learning can be implemented based on students' (including teacher trainees') perceptions of what factors affect them in flipped learning if (or when) another pandemic strikes. This factor's importance and contribution are revisited and discussed further in the following sections.

The final limitation of this study is also based on the impact of COVID-19, and it is based on the qualitative data collection of this study as well as conducting the interviews remotely via Microsoft TEAMS (Chapter 3). Online interviews tend to limit the extent to which non-verbal communication can be tracked in data collection. Whereas Denham and Onwuegbuzie (2013) argue that attention to non-verbal communication improves data interpretation, in this study, most of the time the interviewer could only see the blurred facial expressions of many interviewees because internet connections led to low-resolution video quality.

However, as Dodds and Hess (2020) and Batat (2021) argue, the increased use and reliance on video conferencing tools such as Microsoft TEAMS, which were initially imposed under COVID-19, has had a significant positive impact on research methodologies. During the quarantine, both interview participants and researchers used internet platforms to communicate online (lockdown). As a result, the data obtained in this study reflects a face-to-face conversation, with the only limitation being that nonverbal communication was not captured. Participants felt safe in their given environments (for example, an adaptive living space of their choice) after conducting the aforementioned interviews through Microsoft TEAMS. Working with supportive people (for example, household members) was also important in putting participants at ease. The most significant advantage of the online interviews was that participants felt more at ease and were able to 'open up' to the researcher of this study with ease (as previously stated), for example, by presenting sensitive information (Woodyatt, Finneran and Stephenson, 2016). After considering the study's limitations, the following section will consider the methodology used and the researcher's insider research stance.

5.4. Reflection of the Methodology Used and the 'Insider' Researcher

This study's methodology is primarily based on a research design based on the philosophy of pragmatism (Maddux and Donnett, 2015; Dewey, 1938), with exploratory sequential mixed methods (Creswell and Clark, 2007) as the sole means of data collection (Chapter 3). This permitted this study to investigate how individual teacher trainees

interpreted the content knowledge they received through flipped learning, as well as which factors affected their experience within flipped learning based on their perceptions, as summarised at the beginning of this section.

As an insider researcher study, this study could see the outcries of the teacher trainees' injustice in a system through the above-mentioned research design (Webb *et al*., 2021). Regarding this study's three suggestions of factors that affect teacher trainees' experience of flipped learning (learning preferences, the *Community of Inquiry*, and learning personalities), which will be highlighted further in the following section based on the value and contribution of this study.

Through the methodology of this study, this study has provided a platform for teacher trainees to freely express their opinions on the factors that affect their experience with flipped learning. Someone who is not an insider researcher would not have seen this without the experience of being a teacher trainee and flipped learning teacher, as mentioned in Chapter 1. As a result, this study serves as a metaphorical wake-up call for Northern Cyprus's ruling authorities. This western imitation must come to an end with the idea of integrating flipped learning solely for the purpose of raising digital citizens for economic and political gain (Tekel and Öztekin, 2021). Because the benefits of flipped learning explored in the introductory chapter were formed around the idea of student-centredness, Northern Cyprus must first look through the eyes of teacher trainees in order to successfully implement flipped learning, even with the underlying intention of economic and political gain. As many teacher trainees contribute something unique to flipped learning, the process of being a teacher trainee and engaging with ideas about learning and teaching through their studies shapes teacher trainees' perspectives on flipped learning and how they will go on to teach other students using this method of learning (Counsell *et al*., 2000).

Furthermore, as discussed in the introductory chapter, the position of an insider researcher has led to this study being of value and having original contributions. The following section will revisit this value and contribution from the perspective of an insider researcher regarding the aforementioned outcomes of the factors that affect teacher trainees' experience within flipped learning based on their perceptions, as noted in Table

5.1 of this chapter, including the *Learning Preference Barque* theoretical framework created for the adoption of learning preferences through the perceptions of students (including teacher trainees).

5.5. The Value of this Study and its Contribution Revisited

The value and contribution of this study, according to Chapter 1, is in teacher trainees' perceptions of the factors that affect them in flipped learning. The study has contributed a new educational perspective on flipped learning by permitting teacher trainees' voices to be heard on the basis that flipped learning is seen as a mere application of technology in the form of a policy in Northern Cyprus rather than a primarily economic value, as explored in Chapters 1 and 2 of this study and through the results and discussions in Chapter 4.

As shown in Table 5.1 of this chapter, this study helped to identify six major factors that influence teacher trainees' experiences with flipped learning. This study found three out of the four factors (the *Community of Inquiry*, learning preferences, and learning personalities) that affect teacher trainees through an insider research stance, as previously stated.

Furthermore, as discussed in Chapter 4, this study has contributed a theoretical framework developed based on its findings. The Learning Preference Barque is a theoretical framework that draws on the debate about learning preferences and is based on the advocation of learning preferences and how students come to adopt or 'handpick' their preferences. In higher education, the decision to follow or ignore learning preferences should always be left to the student. This is especially important for teacher trainees, who are exposed to the gap in the literature between psychology and education on learning styles with regard to learning preferences in Northern Cyprus teacher education programmes.

In accordance with the study's findings, discussion, and conclusion, the *Learning Preference Barque* theoretical framework will be discussed further in the following section with regard to recommendations for practice.

5.6. Recommendations for Practice

This study would like to make the following practice recommendations:

5.6.1. *The Learning Preference Barque*

As stated, numerous times in this study for teacher trainees who are exposed to a divide in the literature between psychology and education on learning styles with regards to learning preferences within Western and non-Western teacher education programmes (Chapter 2), this study has expressed the advocation of learning preferences and how teacher trainees adapt or 'handpick' their preferences within flipped learning in this study, and this is why the research is being conducted (Chapter 4). However, learning preferences are not limited to flipped learning; it appears that more research on learning preferences in Northern Cyprus in relation to education at all levels is required to permit students to have a voice in their learning preferences by using the *Learning Preference Barque.*

5.6.2. Teacher Training Courses for Flipped Learning*:* Feedback

This study found that teachers who teach teacher trainees about flipped learning lack educational knowledge and digital literacy in ICT. As a result, the gap between the use of ICT in flipped learning and the application of digital literacy must be bridged in order for teachers to facilitate and provide an effective flipped learning environment that meets the needs and digital literacy skills of specific teacher trainees (Bergdahl, Nouri, and Fors, 2020; Martnez-Alcala *et al*., 2018). This creates an environment conducive to effective feedback. This is based on the importance of educational knowledge or digital literacy in ICT, as noted throughout this study and discussed in Chapter 4 by teacher trainees themselves, based on the findings of this study.

However, in order for this to be possible, teachers must develop a pedagogy of digital literacy within the field and convey these digital literacy skills to their teacher trainees, who will then convey these digital literacy skills to their future students in an ongoing cycle (Herodotou *et al.,* 2019). As a result, this study suggests that future studies could investigate and tailor courses to the needs of teachers in educating teacher trainees about their digital literacy and the educational value of flipped learning in the form of feedback (as discussed in this study). For example, educators in GAU and other Northern Cypriot higher institutions can conduct a pre-course survey consisting of the personality types put forth by Jung (1954) or any of the factors proposed by this study, including (COI, learning preferences, motivation, and self-efficacy) by using (if they wish to) this case study's twenty-six Likert scale statements regarding learning personalities (Chapter 3). By conducting this aforementioned pre-course survey, educators can analyse the teacher trainees' learning personalities before they start their flipped learning course in the university registration stage, in order to be able to tailor the flipped learning course according to the needs of the teacher trainees from an educational perspective.

Since the recommendations for practice have already been established, this study will end with its final remarks on the matter.

5.7. Final Remarks

This study began with the phrase *'Sic Parvis Magna,'* uttered by Sir Francis Drake himself (Parkin, 2020, p.2), as reverberated and translated from Latin into the English language as *'Greatness from small beginnings'* by Parkin (2020). This study started as a small beginning by providing an emancipatory response to educational policies based on teacher trainees within flipped learning that focus on the value of technology rather than education at Girne American University, Northern Cyprus. By considering this study's value and contribution in providing a lens through teacher trainees' perceptions of flipped learning from an educational stance, greatness in educational value can come from considering teacher trainees' perceptions of the six main factors that affect their flipped learning experience in GAU, as noted in Table 5.1 of this chapter, and by using the

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International Journal of Scientific and Research Publications (ISSN: 2250-3153) suggested the *Learning Preference Barque* theoretical framework. This study has lit the beacon for the aforementioned emancipatory response to educational policies in Northern Cyprus. It is hoped that, as a final remark, others will also follow in this study's footsteps.

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APPENDICES

Note:

Each appendix has been labelled with the assigned alphabetical categorisation (For example, the letter 'A') and given title (for example, 'The Pilot Study's Ethical Approval'), as noted in the content page concerning the appendices (p. x)', with a blue 'filigree' label (shown below in Figure 20), to help ease the reader's navigation throughout the current appendices.

APPENDIX A:

Initial Email and Participant Information Sheet

Figure 20. Appendix A: Filigree Label Example

APPENDIX A:

Initial Email and Participant Information Sheet

(A) Initial Email

Dear students,

I am a PhD student currently running a case study at the University of Greenwich, based on teacher trainees perceptions' of which factors affect their experience within a flipped learning context in Northern Cyprus.

You, as prospective teachers, are the perfect candidates to participate in the case study, as your perceptions help shape the learning world around us. You can be involved in this case study through the completion of an online questionnaire, for which I am looking for 10 volunteers on a first-come, first-served basis.

The questionnaire will only take around 15-20 minutes of your time, and this can be completed in the cosiness of your home through your smart devices.

If you wish to participate in this case study, please reply to this email to receive the link to the questionnaire and a participant information sheet.

Thank you in advance for showing interest in my study.

Kind Regards,

Asegul Hulus

PhD School of Education, Department of Education and Community Studies, Faculty of Education, Health and Human Sciences - University of Greenwich

(B) Participant Information Sheet

Project title:

An Exploration of Teacher Trainees' Perceptions of the Factors that Affect their Flipped Learning Experience in Girne American University.

The Main Investigator of this Project is: Asegul Hulus
Email: a.hulus@greenwich.ac.uk

Invitation

Dear Participant,

If you wish to participate in this case study, it is important for you to understand the purpose of this case study and how your participation will impact the study. Therefore, please read the statements below, and feel free to ask the researcher of this case study any questions you have about the case study.

Purpose of this Case Study

The case study aims to explore teacher trainees perceptions' of which factors affect their experience within a flipped learning context in Northern Cyprus. To meet this aim, the study follows a mixed-methods approach and will, therefore, employ two main data collection methods. The first approach consists of administering this questionnaire and the second approach is a semi-structured interview of purposely selected participants according to their choices in the questionnaire, in which they are asked to elaborate on their views of factors that affect their flipped learning experience through their perceptions.
It is important to note that:

-Your email address will be deleted when the selected interviewees have been interviewed, and the data analysis is completed.
- If you wish to withdraw from this study, you may do so anytime you wish. You will not be questioned on the reason why you have withdrawn.

Anonymity and Confidentiality

Any information provided will be anonymised. The online Qualtrics link (questionnaire link) provides an anonymised link for the created questionnaire; limiting any form of privacy issues in distributing the questionnaire through e-mail. The data provided will be used in an anonymous form for the purpose of this PhD research and future academic publishing purposes.

Why have I been selected?

You have been selected as you are a prospective teacher or a student who has received a 'teacher training' course based on the requirements of your programme of study and has been exposed to flipped learning as part of your curriculum.

This project is supervised by:

Dr Robert Morgan, Dr Alison Gilmour and Professor Dr Gordon O. Ade-Ojo:

You may withdraw from this project at any time you wish to until the project completion date of the 31st of August 2021

APPENDIX B:

Questionnaire

Dear Participant,

This Case study aims to explore teacher trainees' perceptions of which learning factors affect their experience within a flipped learning context in Girne American University.

Methodology

This Case study is designed as a mixed-methods approach and will, therefore, employ two main data collection methods. The first approach consists of administering this questionnaire and the second approach is a semi-structured interview of selected participants, in which they are asked to elaborate on their views on a flipped learning style.

Therefore, by agreeing to the consent form located on the next page, you, as the participant, will have consented to take part in this questionnaire.

However, you have every right to withdraw at any given time (as stated in the consent form). Also, any information provided will be anonymised.

If you have any inquiries about the questionnaire and the interview, that will take place. Please contact me by emailing me at **A.hulus@greenwich.ac.uk.**

PhD. School of Education, Department of Education and Community Studies, Faculty of Education, Health and Human Sciences - University of Greenwich

PARTICIPANT CONSENT FORM

To be completed by the participant.

- I have read the information sheet about this study
- I have had an opportunity to ask questions and discuss this study
- I have received satisfactory answers to all my questions
- I have received enough information about this study
- I understand that I am / the participant is free to withdraw from this study:
  - At any time (until such date as this will no longer be possible, which I have been told)
  - Without giving a reason for withdrawing
  - (If I am / the participant is, or intends to become, a student at the University of Greenwich) without affecting my / the participant's future with the University
- I agree to take part in this study
- We may wish to use your research data for a further project in an anonymous form. If you agree to this, please click the 'agree' button below.

Signature of researcher:	Date: 26/02/2021

This project is supervised by:
1st Supervisor: Dr Robert Morgan
2nd Supervisor: Dr. Alison Gilmour
3rd Supervisor: Professor Gordon O. Ade-Ojo

Researcher's contact details (including telephone number and e-mail address):
Email : A.hulus@greenwich.ac.uk
Telephone : 02072779872

I Agree

○

Signed by the participant to acknowledge their agreement of the points stated in the consent form above

SIGN HERE

clear

Please enter your email below for a potential interview follow-up (Your email will be deleted from this study's record as soon as the results have been analyzed)

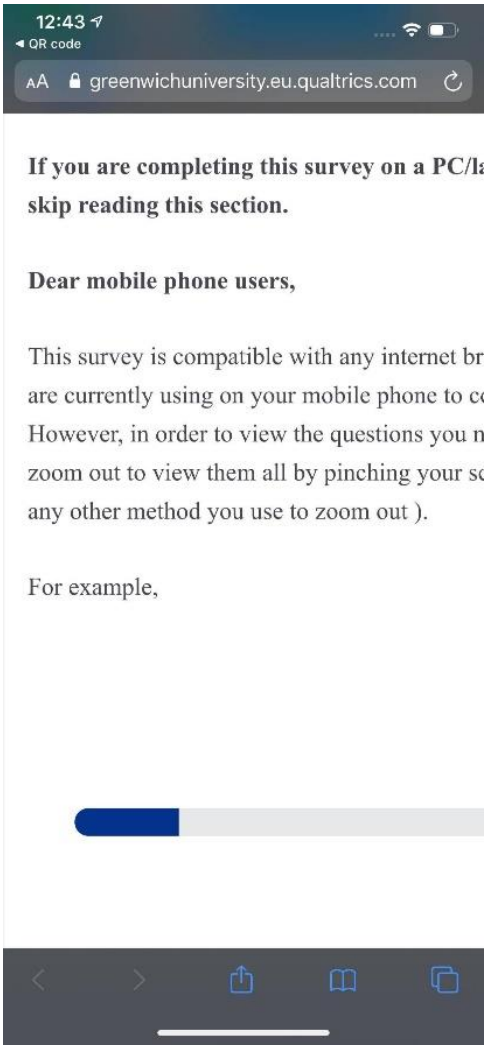
If you are completing this survey on a PC/laptop, please skip reading this section.

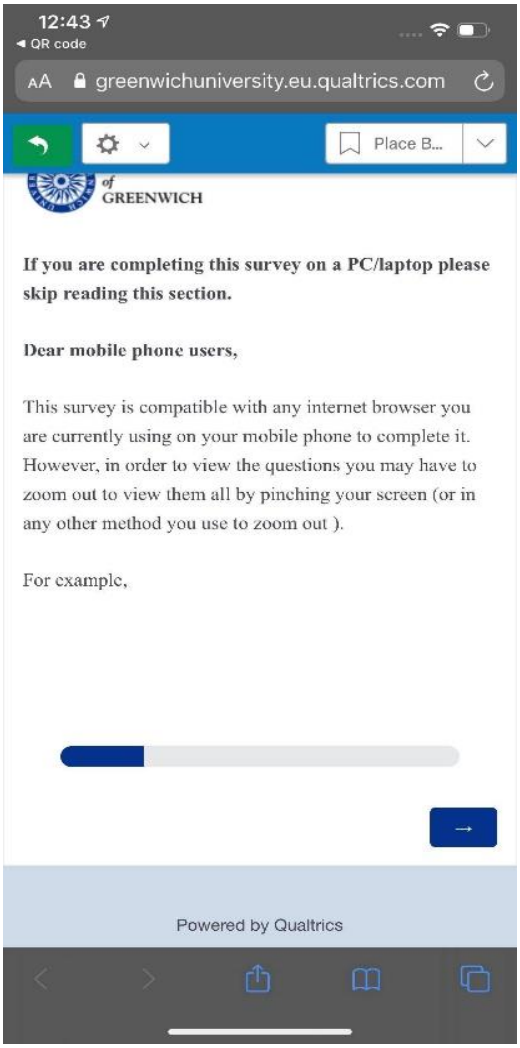
Dear mobile phone users,

This survey is compatible with any internet browser you are currently using on your mobile phone to complete it. However, in order to view the questions, you may have to zoom out to view them all by pinching your screen (or in any other method you use to zoom out).

For example,

Before zooming out on mobile	**vs**	**After zooming out on mobile**
(Questions cannot be fully seen)		(Questions can be fully seen)





PART A

Demographic information

1. What is your gender?

☐ Male

☐ Female

☐ Prefer not to say

2. How old are you?

☐ 18-24 years old

☐ 25-34 years old

☐ 35-44 years old

☐ Over 45

3. Which course are you currently studying in Grine American University ?

☐Postgraduate Certificate in Education(Pedagogy) which includes flipped learning courses

☐BA English Language Teaching (ELT) which includes flipped learning courses

☐MA English Language Teaching (ELT) which includes flipped learning courses

☐PhD English Language Teaching (ELT) which includes flipped learning courses

PART B

Section 1: Flipped Learning

Before starting this section, it is important to note that blended learning and flipped learning are two different approaches.

Blended learning is defined as a mixture of online virtual learning platforms combined with traditional classroom learning (Meyer, Wohlers, and Marshall, 2014).

While **flipped learning** is defined as an approach that uses computer-based or digital tools to permit active and student-centred learning in any location and at any time alongside their face-to-face lessons within a classroom or other specific settings, for example, via online synchronous interactions (Basak, Wotto and Bélanger, 2018).

Therefore, based on the definition of flipped learning above, please answer the questions below by writing your comments in the blank space provided after each question.

1. What is your experience of flipped learning?

_____

_____

_____

_____

_____

_____

2. Specifically, what has your experience been in the comprehension (understanding) of taught course materials through flipped learning?

3. What is your experience of interpersonal relationships within flipped learning?

Note: Interpersonal relationships are two or more people's social connections, interactions, or affiliations (Stebbins, 2015).

Section 2: Flipped learning: (coded in Qualtrics format for online use)-Likert Scale

Based on your experience with flipped learning, please rate the following 26 statements by <u>clicking on each one to view the choices and choosing ONE of the options</u> given to you according to the Likert Scale below:

Statements	Strongly agree (1)	Somewhat agree (2)	Neither agree nor disagree (3)	Somewhat disagree (4)	Strongly disagree (5)
I enjoy using flipped learning because I find it fun to learn with.					
I only engage in flipped learning, as it is a mandatory part of my course.					
Flipped learning increases a student's technical ability.					
I enjoy learning with visuals (graphs and pictures) instead of written text.					
I comprehend information in an audio format (online) within flipped learning more effectively.					
The isolation factors of flipped learning do not motivate me.					
The lack of body movement in the online media of flipped learning demotivates me.					
The lack of hands-on activities within flipped learning demotivates me.					

I prefer to learn with printed materials, reading books, and a whiteboard for writing instead of flipped learning.					
I prefer to engage in authentic discussions and asking questions in real life instead of digitalised (typed) discussions and answers online.					
The lack of correlating tasting and smelling senses with my learning within flipped learning demotivates me.					
I prefer to work and make choices on my own. Thus, mandatory peer work within flipped learning demotivates me.					
Flipped learning provides an environment for unbiased learning and facts.					
Flipped learning is concerned with the wellbeing of all students and creates a positive social environment.					

Flipped learning prevents a teacher from giving efficient feedback individually.					
Flipped learning disregards individual learning in terms of learning needs.					
Flipped learning does not simulate the present-time learning by using the five senses efficiently.					
Flipped learning does not simulate reminiscing past events in learning by using the five senses efficiently.					
Flipped learning stimulates swift brainstorm sessions that enable a student to see links between them and events.					
Flipped learning does not allow students to gain their insights autonomously.					
The selected content on my flipped learning course provides me with a better understanding.					

Flipped learning has helped my critical thinking skills progress even further than before.					
My teacher has designed a flipped learning course that has established meaningful learning for me.					
I feel pressured when logging into the flipped learning platform.					
The discourse that occurs within flipped learning is meaningless to me.					
Overall, I never want to retake another flipped learning course.					

Section End

Please click the blue button at the end of the page to end this survey and record your response.

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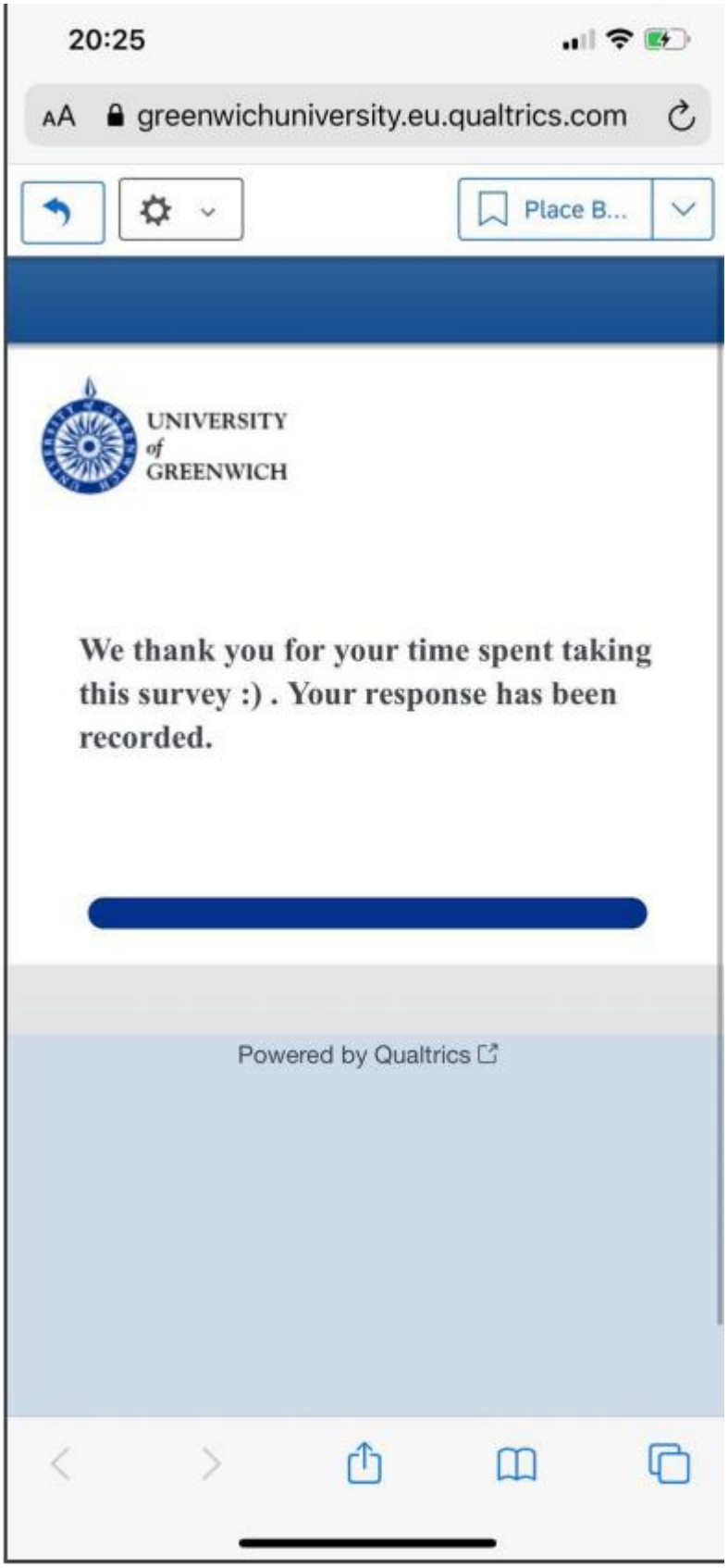
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We thank you for your time spent taking this survey :) . Your response has been recorded.
Powered by Qualtrics

APPENDIX C:

Interview Questions

PARTICIPANT CONSENT FORM- Interview

To be completed by the participant.

➢ I have read the information sheet about this study ➢ I have had an opportunity to ask questions and discuss this study ➢ I have received satisfactory answers to all my questions ➢ I have received enough information about this study ➢ I understand that I am / the participant is free to withdraw from this study: ➢ At any time (until such date as this will no longer be possible, which I have been told) ➢ Without giving a reason for withdrawing ➢ (If I am / the participant is, or intends to become, a student at the University of Greenwich) without affecting my / the participant's future with the University ➢ I agree to take part in this study ➢ I agree for my interview to be transcribed by the researcher in written note form ➢ We may wish to use your research data for a further project in an anonymous form. If you agree to this, please click on the box here ☐	
Signed (participant)	Date:
Signature of researcher	Date: 26/02/2020
This project is supervised by: 1st Supervisor: Dr Robert Morgan 2nd Supervisor: Dr. Alison Gilmour: 3rd Supervisor: Professor Gordon O. Ade-Ojo:	
Researcher's contact details (including telephone number and e-mail address): Email : A.hulus@greenwich.ac.uk Telephone : 02072779872	

If, at any point in the interview, if you wish to ask the researcher to clarify anything, please do not hesitate to ask.

Interview Questions Outline:

1. What inspired (motivated) you to become a teacher trainee?

*Prompt to lead into the next question: *'As a teacher trainee, you are currently undertaking a flipped learning course.'**

2. How is your flipped learning course conducted, as in what is required of you as a teacher trainee?

3. Could you tell me about your opinion on your institution's policy that all teacher training programmes should include '*Technological Pedagogical Content Knowledge'* (*TPACK*) in the form of flipped learning?

*Prompt: *'As a reminder, TPACK is defined as the set of knowledge that teachers need to teach their students a subject, teach effectively and use technology.'**

4. Has your experience with previous courses (modules) in your teacher training programme affected your experience in your flipped learning course?

*Prompt-if further clarification is needed: *'in other words, have your experiences in learning (face to face) affected your flipped learning course experience.'**

5. Following on from the previous question, what specific previous learning experiences shape how you experience flipped learning in your current course?

*Prompt: *'how you handled it?'**

6. Could you tell me how your views and actions may have changed regarding your flipped learning course?

7. How have you developed as a teacher trainee since starting your flipped learning course?

8. When you reflect on your flipped learning experience, what aspects are positive and why?

9. As a follow-up question, when you reflect on your flipped learning experience, what aspects are negative and why?

*Prompt: *'How did you respond to it?'**

10. After having this flipped learning course experience, what advice would you give to another teacher trainee who will start this course?

11. Is there something you might not have thought about before that occurred to you during this interview regarding your flipped learning experience?

12. Is there anything else you would like to add?

13. Finally, is there anything else you would like to ask me?

Thank you for your time.

Transcripts

APPENDIX D:

Transcript A

Transcript A: Participant ID No.22-Female, PhD ELT, 25-34 years old

Researcher of the Case Study: Thank you again for agreeing to this.

Participant 22: No problem at all.

Researcher of Study: So, to start, what inspired you to become a trainee teacher, as in what motivated you?

Participant 22: I wanted to become a teacher in order to help people learn.

Researcher of the Case Study: That's kind of you. So, as a teacher trainee, you're currently taking a flipped learning course. How is your flipped learning course conducted, as in what is required of you as a trainee teacher?

Participant 22: Well, in our flipped learning course we learn about online education, and how to use applications like Edmodo, and Zoom. We also learn how to make effective PowerPoint presentations, amongst many other things.

Researcher of the Case Study: Thank you for your response. Could you give me your opinion on your institutions policy that all teacher training programs should include the *TPACK* policy? Which, as a reminder to yourself, is: technological pedagogical content knowledge, in the form of flipped learning.

Participant 22: I think it's a good idea because we need technology. I mean, we have a lot of technology around us. But I think the way it is, it is very hard to say this, it’s like we only focus on rules. For example, we have to attend four conferences about technology learning. So, we end up being forced to go to them which takes time, and

most of the time it is just a person reading slides to us. We don't do any form of using technological applications, which I actually do want to learn, but I usually use YouTube. Because to view YouTube videos is more effective, if I have to be honest.

Researcher of the Case Study: I'm deeply sorry to hear that. So, based on this, has your experience with previous courses in your teacher training program affected your experience in flipped learning?

Participant 22: I think what was really interesting is that we have a course design course, it's called 'ELT 304 Course Design', and we learn about making materials. And well, this year we couldn't because of COVID-19, but we learned how to make 3D materials and the importance of flashcards before flipped learning. It's really weird because in that lesson our teacher always talks about how technology is not as effective. Then we have other learning courses where technology is said to be effective, so in my mind, I'm confused about how to make effective learning, because I don't see both helping each other at the moment. And I think that one of the things that is needed is a connection, maybe they can make both of those courses together where we learn how to do some technology, and some 3D materials to help students.

Researcher of the Case Study: So, to clarify your experiences in face-to-face learning has affected your flipped learning course?

Participant 22: Yes, it has affected me a lot. I think also because we are always online now. I really miss being face-to-face, and I think face-to-face is better because, I don't know, this online situation is very weird. It's like, I cannot focus myself, and I'm really trying my best to study and everything, but they are not giving me this opportunity. I do miss making 3D materials, and I don't like making flashcards online because I like feeling the material as well. I believe it I helps students, like I went to, it's, it's a word in English. I'm so sorry let me think.

Researcher of the Case Study: If you want you can say it in Turkish, I'm more than happy to translate it.

Participant 22: 'Staj'

Researcher of the Case Study: Oh, the English word for 'Staj' is an internship.

Participant 22: Thank you. So, when I went to my internship, I made posters and flashcards, and the students really loved them. I had to also make a PowerPoint, but they were so interested in the cards that I made - I used like, little pictures of their favourite characters. They are primary school students, and they didn't really care about PowerPoint, even though I put characters there as well. So, I think that my experience with face-to-face is showing me that maybe technology shouldn't be used in some ways in education.

Researcher of the Case Study: Thank you for your answer. So, following on from the previous question, what specific previous learning experiences, which you have answered in a way, shape how you experienced clip learning in your current course? If you wish to note other things to what you've already said, then you can.

Participant 22: As I said before, it's all about materials for me. I really like feeling the material, drawing, highlighting, so I don't like doing everything online. I don't think it's effective. I think that it gives headaches as well, and I found it much harder to study. I mean, me and my friends used to meet up before lessons, and we used to study a lot, so much, and I missed that. We can't do it online because either people are sleeping or they are going on walks because they cannot stay inside. COVID is making everyone's psychology very bad. I am an anti-social person, and it even makes me feel bad! So, I guess, I'm sorry I changed the topic. It's just this whole online with COVID is so hard.

Researcher of the Case Study: Oh no, don't worry at all. I totally understand. I've also been working online myself. Thank you for sharing this with me.

Participant 22: Thank you very much for listening. It's very hard to find people who understand this because when we try to tell our teachers they just say that we have to do it, and there is nothing else to do about it, which I find very difficult.

Researcher of the Case Study: You are welcome. I'm sorry to hear that. Is it okay if I move on to the next question?

Participant 22: Yes, yes, it's very okay.

Researcher of the Case Study: So, could you tell me how your views and actions may have changed, regarding your flipped learning course?

Participant 22: Oh, well, you know, from everything we talk. I think I just, I don't want to be online. That has changed a lot. I mean, I think back to when we first started, and I wish there was no COVID. When we first started, I was so happy, I was like, okay, I don't have to get up to go to school. I don't have to, you know, get ready for school. But then slowly I started becoming more lazy, and I was shocked at myself because you know, I wanted this career, I wanted to help people. But this whole online education situation has changed me as a person, like, I don't want to study, and it's very bad to say this. It is the teacher's fault as well, I guess, and the government because they say, you can open restaurants, but you can't open schools. I understand a school is a big place, but maybe for university students like us who have 3D material lessons, maybe we could have gone in with some kind of distancing. Because right now, I don't know if education is going to continue being online for the rest of our lives. I hope not, of course, but I don't ever want to be an online teacher. I don't ever. I don't want to use a lot of smartboards as well.

Researcher of the Case Study: Thank you very much for your answer. So, based on that, how have you developed as a trainee teacher, since starting your flipped learning course?

Participant 22: Can I think for one minute?

Researcher of the Case Study: Of course, take as long as you like.

Participant 22: Thank you. Okay, I'm ready, I can start. So, in terms of me as a trainee teacher, I don't think I have developed. I think I'm at the same level that I was before, in flipped learning. I mean, my flipped learning course is just our teacher telling us how to make good education, but she is not giving us good education, she is just reading slides, and I am drinking coffee, eating food. I don't feel it's education, you know, like before. It was like I was scared in lessons, I was quiet, I was taking notes, and now it's just I think I am not serious about it anymore. So, I don't think I have developed. I think the opposite has happened, I have gone further down, and I think this is very bad. And I feel very bad for saying this, but it is the university's fault, but it's not just their fault, it's COVID, but they could have made it better for us.

Researcher of the Case Study: I'm sorry to hear that again. So based on this question I know we talked a lot about some negative things. When you reflect on your flipped learning experience. Which aspects did you find positive?

Participant 22: The word positive even makes me scared. I think in terms of, you know, saving time by making slides, it is good, but I just don't think that is positive. I mean we are completely online. Maybe you know, like you said in the questionnaire that flipped learning can be in class, or offline-online. I just think that it should be in class, and offline at home maybe we read and watch some videos. But not this flipped learning, this is not positive, this is just, psychologically, making us hate education. I mean yes, they're very positive, I've read so many articles for our course about flipped learning, and there's so many opportunities. However, our university does not take them. So, I don't know, I will have to I guess, take courses outside the university or attend good seminars - not the one that the university does for us, to actually have effective positive learning.

Researcher of the Case Study: Thank you very much. As a follow up question, when you reflect on your flipped learning experience, well, what aspects are negative and why? I know you have stated many but are there any more that you would like to add?

Participant 22: As I just said there has to be the right formula where you feel like you are learning, and you are having fun, but you are learning. When I say fun, it's the fun of learning, not sitting down to watch a teacher talk. I just think this experience of flipped learning, online learning, is so negative for me that I don't want to, you know. It's just, I think that as a university we need a big lesson, maybe from people who know how to do good, to keep learning, then we won't have so many negative aspects that I talked about before.

Researcher of Study: Thank you for your answer. So, after having this flipped course experience, what advice would you give to another trainee teacher who will start this course?

Participant 22: I will tell them to run.

Researcher of the Case Study: Can I ask you to expand on that?

Participant 22: When I say run, I mean, I would tell them to research before about good flipped learning, so they maybe use Google or YouTube. They should not trust our university's flipped learning; I tell them because then they would not want to be teacher and like education. So, I will tell them to be careful, and to find good positive flipped learning.

Researcher of the Case Study: Thank you very much. Is there something you might have thought about before that occurred to you during this interview? As in something that you might not have thought about before this interview, and would like to add now? Sorry for my babbling.

Participant 22: No, it's no problem, and I don't really know. Like before when I was doing the questionnaire, all I thought about was like: it's just negative. Like I noticed how much this flipped learning course is making me go crazy. So, like before, this whole question of the interview, I knew it was negative, but I didn't know how negative it was! I look forward to seeing what you have to write and say about it.

Researcher of the Case Study: Thank you very much. I would love for you to read the published version once it's done. So, is there anything else you'd like to add?

Participant 22: Not really. This is everything I can think of.

Researcher of the Case Study: Okay, no problem at all. Finally, is there anything else you would like to ask me?

Participant 22: Yes. Actually, I wanted to ask, how is flipped learning in the UK? You are learning in the UK?

Researcher of the Case Study: There is a lot of research on student-centered learning which I would recommend you read up on, as you talked about articles that you would like to explore and then you can get an idea of the UK as a researcher. I would like to protect objectivity in this study, and I wish not to comment. I hope you understand this.

Participant 22: Oh, of course, no problem at all. Thank you for the recommendation.

Researcher of the Case Study: No problem at all. Well, this brings me to the end of my interview and I would really like to thank you for your time. It's been a great experience, speaking with you and learning your views.

Participant 22: No problem at all. If you ever need anything else, just let me know.

Researcher of the Case Study: Thank you so much, I'll end the recording right now.

APPENDIX E:

Transcript B

Transcript B- Participant ID No.25, Female, PhD ELT, 25-34 years old

Researcher of the Case Study: Good morning, thank you for agreeing to this interview, I really appreciate it. How are you today?

Participant 25: I am very well, how are you?

Researcher of the Case Study: Well, as well, thank you. Is it okay if I start the interview?

Participant 25: Yes.

Researcher of the Case Study: What inspired you to become a trainee teacher, as in, what motivated you?

Participant 25: I chose English language teaching because my English is good. And the only suitable job here is being a teacher. I guess, I had no choice.

Researcher of the Case Study: Thank you for your answer. So, as a teacher trainee, you are currently taking a flipped learning course. So, my question to you is: how is your flipped learning course conducted?

Participant 25: Well, with all flipped learning courses right now we are just learning about how to make them, and how to make more. We are also researching how we can make it more effective for students, but right now it's really just us doing a lot of slide reading, passively.

Researcher of the Case Study: Thank you for your answer. Could you tell me about your opinion on your institution's policy that all teacher training programs should include

TPACK? Which is technological pedagogical content knowledge, in the form of flipped learning.

Participant 25: The approach that we're taking is very wrong, because we talk about needs, yet we don't approach them. I mean, the exams we had, were an open book. I was forced to turn on my camera which I found very disturbing as I didn't have a suitable environment.

Researcher of the Case Study: Thank you, could you elaborate on that? If it's okay with you, about what is wrong with this approach they're taking.

Participant 25: As I've said, it's not a suitable environment. Personally, I don't really feel that comfortable talking about my environment at home.

Researcher of the Case Study: That's totally fine, I'll move on to the next question. So, has your experience with previous courses in your teacher training program affected your experience in your flipped learning course?

Participant 25: That's a very interesting question because it makes me think about the whole online exams that we have. As before our exams would be on paper, and we'd have to study for hours but now we're just opening books, and clicking multiple choice questions online. In fact, they make us turn on our microphones to make sure there's no cheating, yet the books are in front of us.

Researcher of the Case Study: So, following on from that point you've made, what specific previous learning experiences shape how you experience clip learning in your current course?

Participant 25: As I've said before, it's more that before we were learning through reading, and now it's just clicking things. It's just not, it's not a good way to learn.

Researcher of the Case Study: Based on your comments of that, could you tell me how your views and actions may have changed regarding your flipped learning course?

Participant 25: I think because we are researching flipped learning right now, and I've seen how much of a positive impact it could have. I do find that my views and actions have changed about our current flipped learning course, as in, we're learning how to make effective learning courses. Yet the one we are taking is not effective so it makes me question the uniqueness and limits, etc. How much is it truly learning?

Researcher of the Case Study: Thank you for your comments. So, how have you developed as a teacher trainee ever since starting your flipped learning course?

Participant 25: I have developed my critical senses, as in I'm finding more fault in our education systems, which might be very terrible to say, but it is the truth. And I think this entire process has been a learning process for both us and our lecturers. So, I guess we developed what not to do, in a way.

Researcher of the Case Study: Following on from that, what aspects are positive that you have found in flipped learning, and why?

Participant 25: The only thing I find positive is that we are able to see how not to do flipped learning. Based on that question.

Researcher of the Case Study: You talked about it not being a good experience so what aspects do you find negative of flipped learning, and how do you respond them?

Participant 25: Based on my experience of, you know, being forced to open cameras, and microphones, I just don't really engage. I feel really uncomfortable, so I just listen, just highlight my books, which makes me feel pressure in this situation. So, I just don't respond to that at all.

Researcher of the Case Study: Thank you for your answer. After having this flipped course experience, what advice would you give to another trainee teacher who will start this course?

Participant 25: I would tell them to be very careful about themselves as in how they are a learner, and they should be open, I guess, to changing the way they are. In order to at least get some kind of learning from this experience.

Researcher of the Case Study: Thank you for your answer. Is there something you might not have thought about before that occurred to you during this interview regarding your flipped learning experience?

Participant 25: There isn't much that comes to my mind, you know, I just completed the course and everything. There isn't anything else, I think I've said everything.

Researcher of the Case Study: Thank you for that.

Researcher of the Case Study: So, just to confirm there is nothing else you would like to add?

Participant 25: No, there is nothing else I would like to add.

Researcher of the Case Study: Finally, is there anything else you would like to ask me.

Participant 25: No, there is nothing else I would like to ask.

Researcher of the Case Study: Thank you very much for your time. I hope you have a great day. I'll stop the recording now.

APPENDIX F:

Transcript C

Transcript C- Participant ID No.27, Female, PhD ELT, 25-34 years old

Researcher of the Case Study: Good morning, thank you for agreeing to this interview. May I start?

Participant 27: Yes, you can.

Researcher of the Case Study: Thank you. My first question to you is what inspired you to become a trainee teacher.

Participant 27: Well, my master's was in English, so I did this PhD so I can teach in a university.

Researcher of the Case Study: Thank you for your answer. So, as a trainee teacher, you are currently undertaking a flipped learning course. Therefore, I would like to ask you: how is this course conducted? As in, what is required of you as a trainee teacher.

Participant 27: We are only required to do some debates about flipped learning, and we read some articles about it. There isn't much requirement, just to know how to use it.

Researcher of the Case Study: Thank you. May I ask you to clarify what you mean by how to use it.

Participant 27: That's totally fine I mean how to use, you know, online education, applications, and more.

Researcher of the Case Study: Thank you for the clarification.

Researcher of the Case Study: Could you tell me about your opinion on your institution's policy that the old teacher training program should include technological pedagogical content knowledge, in the form of flipped learning?

Participant 27: Sorry, I was just thinking about my answer. Can I have a few minutes?

Researcher of the Case Study: Yes, of course.

Participant 27: I think it has become a mandatory form of technology that we need to learn. I think Cyprus is moving more into the digital side, I mean we just started to have good online banking systems, applications, and I think technology is good. I mean, we never used to have online shopping, and now we have applications that deliver to our door. So, I guess in a way we all need to learn about technology.

Researcher of the Case Study: Thank you for your answer.

Researcher of the Case Study: Can I ask if your experience with previous courses in your teacher training program, affected your experience in your flipped learning course?

Participant 27: I think previously we never used to be online, and we never used to have technology courses. We had an ICT course which taught us Excel and PowerPoint, including word techniques, but other courses were mainly about learning theories, and material design. So, I don't think there is much connection between my previous courses, and my flipped learning. Except for the ICT skills.

Researcher of the Case Study: Thank you for your answer. So, I know you said there isn't much connection, but is there any specific previous learning experience that shapes how you experienced flipped learning in your current courses?

Participant 27: I think moving on from ICT to flipped learning was really weird because we learned only Microsoft tools, like I said. So again, I guess there isn't much connection.

Researcher of the Case Study: So how did you handle it?

Participant 27: I just practiced a lot. I asked for help from other people, that's how I got by.

Researcher of the Case Study: Thank you for your answer.

Researcher of the Case Study: Could you tell me how your views and actions may have changed, regarding your flipped learning course?

Participant 27: I don't think anything has changed. I knew it was about technology and how to teach people online. I know it's a requirement that we all have to have, as you said, it's a policy. There isn't much change for me, I know I have to learn it. And that's it.

Researcher of the Case Study: So, based on what you said now. How have you developed as a trainee teacher, since starting your flipped learning course?

Participant 27: If I had to be honest, I'm not sure. I guess, technology wise, I have developed more. I'm really not sure how to answer this, to be honest I don't think I have more of an answer to give.

Researcher of the Case Study: That's totally fine, thank you for your answer. Then can I ask: when you reflect on your flip learning experience, what aspects are positive, and why?

Participant 27: I guess I really like being at home, you know, my computer, not having to go anywhere. That's the only part I like.

Researcher of the Case Study: So, as a follow up question. When you reflect on your flip learning experience. What aspects are negative, and why?

Participant 27: Can I have a few more minutes to think about this again.

Researcher of the Case Study: Of course, you can. Please take as long as you want.

Participant 27: I think the negative things are that you need a lot of digital skills, and the stuff we learned in ICT wasn't enough. Another negative part is that I hate how we have to keep reading PDFs. I had to go and find an open book store, which was very hard during this lockdown, because of COVID, and I printed out the PDFs. So, in a way I actually lost money as well, because it's very expensive to print those books, and most of them are 200 pages long. So, I think these are very negative things. If online education is supposed to be easy, then why is it making our life harder?

Researcher of the Case Study: Thank you for this answer. If I can ask, after having this flip learning course experience, what advice would you give another trainee teacher who will take this course?

Participant 27: That's actually a very interesting question. I would say to train themselves with skills so they can find it easier and buy a home printer.

Researcher of the Case Study: Is there something you might not have thought about before that occurred to you during this interview regarding your flip learning experience?

Participant 27: Can I think about this again? I'm sorry, I keep thinking.

Researcher of the Case Study: No, no, it's fine. Please take as long as you want.

Participant 27: It's really funny when we have to reflect, because we live in the moment of things happening. But as I think about it, the money, and the time I had to waste on flip learning - it just wasn't worth it. And I really wish it was. In fact, I hope somehow, that one day we'll be able to find a way.

Researcher of the Case Study: Thank you very much for your comment. Is there anything else you would like to add?

Participant 27: I think I've said all that I wanted to say.

Researcher of the Case Study: Thank you. Finally, is there anything else you would like to ask me?

Participant 27: No, there is nothing else that I would like to ask you.

Researcher of the Case Study: Thank you very much for your time. I'll stop the recording now.

APPENDIX G:

Transcript D

Transcript D- Participant ID No.15, Female, MA ELT, 25-34 years old

Researcher of the Case Study: Good afternoon, thank you for agreeing to this interview. How are you today?

Participant 15: Great, thanks how are you?

Researcher of the Case Study: Good as well, can I start with the first question?

Participant 15: Sure, go ahead.

Researcher of the Case Study: What inspired you to become a trainee teacher?

Participant 15: Well, I moved to Cyprus from the UK, and they like to take native teachers, and pay them in Sterling, which is a very high rate when converted to Turkish Lira. My bachelor's degree was in psychology, therefore I had to take a master's in English language teaching to be able to get a job in English teaching, and get a good wage in Sterling. I also have a British passport, of course, and that is a bonus.

Researcher of the Case Study: Thank you so much for your answer. Can I ask, as a trainee teacher, you are currently taking a flipped learning course. Therefore, I would like to know, how is your flipped learning course conducted, as in what is required of you as a trainee teacher?

Researcher of the Case Study: In our flipped learning course we learn about different studies on the matter. And we learn how to make it effective through various tools, and how to use them.

Researcher of the Case Study: Thank you. Based on that, could you tell me about your opinion on your institutions policy that all teacher training programs should include technological pedagogical content knowledge, in the form of flipped learning.

Researcher of the Case Study: I think if it's the law, then it's the law. I mean if we have to learn it, we have to learn it, just like how I've had to do this master's to be an English teacher. It's what we have to do.

Researcher of the Case Study: Thank you for your answer. Has your experience with previous courses in your teacher training program affected your experience in the Flipped Learning course?

Participant 15: Actually, there isn't much difference here. I mean, most of the things that we learn about, I did see from other teachers, so it's just really me learning to pass to be able to get my job.

Researcher of the Case Study: Thank you. So, following on from the previous question, what specific previous learning experiences shape how you experienced flipped learning in your current course?

Participant 15: As I've said before, there isn't much difference in my courses so there isn't really any difference. I mean at the end of the day it's a course that we have to take and pass in order to graduate.

Researcher of the Case Study: Could you tell me how your views and actions may have changed, regarding your flipped learning course?

Participant 15: I guess there isn't that much, it’s just basic, you know. I mean in terms of technology, we had to deal with a lot of technical issues but that's about it.

Researcher of the Case Study: I will ask you about those technical issues in another question, but first I want you to reflect on your flip learning course, in terms of what aspects are positive and why?

Participant 15: I think it's good in terms of distance learning, especially in a pandemic where we learned in order to keep people safe. So, in terms of safety, it's good.

Researcher of the Case Study: Thank you for your answer. Based on the technical issues you talked about, when you reflect on your learning experience what aspects are negative, and why?

Participant 15: Like I said, there are many technical issues to it. Especially in Cyprus where we have a lot of electricity cuts, and internet connection problems. Halfway through the lesson the teacher can disappear, or even I can disappear. So, accessibility issues are a big factor.

Researcher of the Case Study: Thank you very much for your answer. So, after taking this flipped learning course, what advice would you give to another teacher trainee starting this course?

Participant 15: I would tell them to do a lot of research, make sure in terms of technical issues that they don't have accessibility problems, and that's really all I can think of.

Researcher of the Case Study: Thank you so much for your answers. So, is there something you might not have thought about before, that occurred to you during this interview regarding your flipped learning experience?

Participant 15: Not really. There isn't anything.

Researcher of the Case Study: Thank you. So, there is nothing else you would like to add.

Participant 15: There is nothing else I would like to add.

Researcher of the Case Study: Finally, is there anything else you would like to ask me?

Participant 15: No, there is nothing else I would like to ask you.

Researcher of the Case Study: Thank you so much for your time. I'll stop the recording.

APPENDIX H:

Transcript E

Transcript E- Participant ID No.11, Male, MA ELT, 35-44 years old

Researcher of the Case Study: Good morning, thank you for agreeing to this interview. How are you today?

Participant 11: I am good, thank you. How are you today, Miss?

Researcher of the Case Study: I am good as well. Can I start the interview?

Participant 11: Yes.

Researcher of the Case Study: What inspired you to become a trainee teacher?

Participant 11: My parents and I had a discussion because they are dependent on me. And we thought teaching would be the best career for me in terms of financial aid.

Researcher of the Case Study: Thank you very much for your answer. So, you are taking a flipped learning course, my question to you is: how is your flipped learning course conducted? And what is required of you as a teacher in training?

Participant 11: We are required to do online homework. and we are required to read some material on flipped learning.

Researcher of the Case Study: Thank you very much. Could you tell me about your opinion on your institution's policy that all teacher training programs should include a form of technological pedagogical content knowledge in the form of learning?

Participant 11: If it's a policy, it’s a policy. We have to learn it, and we know that.

Researcher of the Case Study: Thank you. How's your experience with previous courses in flipped learning? I mean, has your teacher training program affected your experience in your flipped learning course?

Participant 11: Not really, it's the same just with the difference that we learn online. Before we were in the classroom, that's the only difference I can find.

Researcher of the Case Study: Following on from that question, have any specific previous learning experiences shaped how you experience flipped learning in your current course?

Participant 11: Not that I can think of.

Researcher of the Case Study: Thank you. Could you tell me how your views and actions may have changed regarding your flipped learning course?

Participant 11: Yes, I don't like constantly getting homework, as I've talked about before in the questionnaire. It's just you're always on the laptop. And I don't have the discipline for it, so I guess I've become more of a negative student.

Researcher of the Case Study: Thank you. So as a follow up question, when you reflect on this flip learning experience, what aspects are positive?

Participant 11: I mean at the moment; I can't really think of any positive things because I find it very annoying to be on my laptop constantly and I prefer to be outside.

Researcher of the Case Study: Based on that comment, as a follow up question, when you reflect on your flip learning experience, what aspects are negative?

Participant 11: As I have said being constantly on the laptop, and being given constant homework with no teacher feedback. We were just doing blank homework, at least before in the face-to-face setting our teacher would give us feedback and mark our work, but now there is nothing

Researcher of the Case Study: Thank you so much for your answer. So, after having this flip learning course, what advice would you give to another trainee teacher starting this course?

Participant 11: I would tell them to focus on self-learning because they won't get any feedback, as I've noted, which is very difficult for most students.

Researcher of the Case Study: Thank you for your answer. Is there something you might not have thought about before that occurred to you during this interview regarding your flipped learning experience?

Participant 11: There was nothing.

Researcher of the Case Study: Thank you. Is there anything else you would like to add specifically?

Participant 11: No.

Researcher of the Case Study: Finally, is there anything that you would like to ask me?

Participant 11: No.

Researcher of the Case Study: Thank you very much for your time. I'll stop recording.

APPENDIX I:

Transcript F

Transcript F- Participant ID No.17, Female, MA ELT, 25-34 years old

Researcher of the Case Study: Hello. Thank you for agreeing to this interview, and welcome.

Participant 17: No problem at all.

Researcher of the Case Study: Can I start by asking you, what motivated you to become a trainee teacher?

Participant 17: I have wanted to teach others ever since I was a little girl.

Researcher of the Case Study: Thank you very much. How is your flipped learning course conducted, as in what is required of you as a trainee teacher?

Participant 17: We are required to read materials and answer some polls online, and watch some YouTube videos about flipped learning.

Researcher of the Case Study: Thank you for your answer. So, could you tell me about your opinion on the policy that all teacher training program should include this technological pedagogical content knowledge, in the form of flipped learning?

Participant 17: I think it's a good idea but the way it's being done is not good. We have so much potential from all the things that I've been learning about flipped learning. It's so chaotic the way we're learning now, because for example, my teacher is just reading the slides to us, and that is not flipped learning. It's very ironic because in the slide that she's reading, it tells us how flipped learning should be all about motivating students but my teacher is not doing that.

Researcher of the Case Study: Thank you very much for your answer. So has your experience with previous courses in your teacher training program, affected your experience in your flipped learning course?

Participant 17: Yes. Before we were communicating in lessons, but now it's just, as I said, I'm just staring at a blank screen. And teachers are just talking to the camera reading slides, so it's like you're missing the communication part of it.

Researcher of the Case Study: Thank you very much. So, from that, is there a specific previous learning experience that shaped your experience in flipped learning in your current courses?

Participant 17: I think in other courses I learned to study by myself. And that really helped me with this flipped learning, because if I don't study by myself here then there's no way I'm going to learn with the teacher just reading from slides.

Researcher of the Case Study: Thank you for your answer. So could you tell me how your views and actions may have changed regarding your flipped learning course.

Participant 17: As I've said before, I've learned to become independent because I'm not going to get the information from the teacher who is teaching us about flipped learning.

Researcher of the Case Study: So, when you reflect on your flipped learning experience have any aspects been positive and why?

Participant 17: Like I said, it's taught me to survive on my own and I guess that's the only thing I can think of that is positive.

Researcher of the Case Study: Thank you very much for your answer. When you reflect on your flipped learning course, are there any aspects that are specifically negative, and why?

Participant 17: Like I said, the whole communication thing is an issue, because you know, I don't even open my camera, I text message my friends through my mobile phone, and that's it. And that’s not how education should be. If I am to go on to teach my students, I would hate for that to happen because that is not the joy of teaching.

Researcher of the Case Study: Thank you. Is there anything else you would like to add?

Participant 17: No.

Researcher of the Case Study: Finally, is there anything else you would like to ask me?

Participant 17: No.

Researcher of the Case Study: Thank you very much, and thank you very much for your time. I'll stop the recording here.

APPENDIX J:

Transcript G

Transcript G- Participant ID No.19, Female, MA ELT, 25-34 years old

Researcher of the Case Study: Good afternoon. Thank you for agreeing to this interview. How are you feeling today?

Participant 19: I am good, thanks. How are you?

Researcher of the Case Study: I am also doing good, thank you. I wanted to ask you what inspired you to be a trainee teacher?

Participant 19: I was always taught that the higher degree I get, the better teaching job I will get. And I really like teaching. So, I want to have the best school, and the best school wants a master's degree.

Researcher of the Case Study: Thank you for your answer. So as a trainee teacher, you are currently undertaking a flipped learning course. How is your flipped learning course conducted, as in what is required of you as a teacher trainee?

Participant 19: We are required to follow-up lessons online, and we are required to read through the course materials that are given to us.

Researcher of the Case Study: Thank you for your answer. So, could you give me your opinion on your institution's policy that all teacher training programs should include technological pedagogical content knowledge, in the form of flipped learning?

Participant 19: I think it's terrible because flipped learning has increased the complexity of the course materials, so it's really hard to understand things.

Researcher of the Case Study: So, has your experience with previous courses in your teacher training program affected your learning?

Participant 19: Yes, because I'm a person who thinks it's effective to learn in a traditional classroom. So, my traditional classroom lessons have shown me that flipped learning doesn't work.

Researcher of the Case Study: Thank you for your answer. Is there a specific previous learning experience that has shaped how you experience flipped learning in your current course?

Participant 19: As I said previously, I prefer the traditional classroom and I prefer taking notes. So based on my methods of taking notes by hand, I don't like flipped learning.

Researcher of the Case Study: Thank you very much for your answer. Could you tell me how your views and actions may have changed regarding your flipped learning course?

Participant 19: I think it's very difficult because I already find it hard to learn online. But also, there are very few actions you can do. Everything is just so difficult, like reading stuff online, constantly being online. It's very harmful.

Researcher of the Case Study: So how have you developed as a teacher in training since starting your flipped learning course?

Participant 19: I don't think I have developed as a trainee teacher. I think I've just developed as a student, as in I'm just trying to find a way to understand everything that I find negative.

Researcher of the Case Study: Thank you. So, when you reflect on your flip learning experience, what aspects have been positive and why?

Participant 19: I think because of the pandemic, it's good to keep people safe. But as I said, it's a negative experience for me.

Researcher of the Case Study: Thank you for your answer. So, based on that, can you reflect on your negative experiences for me?

Participant 19: It has made my relationships with my friends terrible, I'm not able to interact, there is no time to interact in flip learning. So, it's been a lot of pressure on me, and it's created a lot of negative impact as well.

Researcher of the Case Study: Thank you for your answer. After having this flipped learning course experience, what advice would you give to another teacher trainee who will start this course?

Participant 19: I would tell them to start teacher training when we are able to use traditional classrooms again for learning.

Researcher of the Case Study: Thank you very much. Is there something that you might not have thought about before that occurred to you during this interview regarding your flipped learning experience?

Participant 19: Nothing, I just really miss the traditional classroom like I said.

Researcher of the Case Study: Thank you. Is there anything else you would like to add?

Participant 19: No, there is nothing else.

Researcher of the Case Study: Finally, is there anything else you would like to ask me?

Participant 19: Do you miss the traditional classroom?

Researcher of the Case Study: In order to protect the objectivity of this research. I am not going to comment however, should you wish to read my published work, then you will see my opinions.

Participant 19: Thank you. I look forward to reading your work.

Researcher of the Case Study: Thank you very much, and thank you very much for your time. I'll stop the recording here.

APPENDIX K:

Transcript H

Transcript H- Participant ID No. 3, Male, BA ELT, 18-24 years old

Researcher of the Case Study: Hello, welcome to this interview. How are you?

Participant 3: I'm good.

Researcher of the Case Study: Can I ask what inspired you to become a trainee teacher?

Participant 3: My big sister inspired me to become a trainee teacher.

Researcher of the Case Study: Okay, thank you for your answer.

Researcher of the Case Study: So how is your flip learning course conducted, as in what is required of you as a teacher training in your online course?

Participant 3: Can you rephrase it please?

Researcher of the Case Study: To rephrase it: in your flipped learning course, when you were learning online, what were you required to do?

Participant 3: We were required to make sure we all attend the online lectures.

Researcher of the Case Study: Thank you for your answer. So, could you tell me your opinion regarding the policy that all teacher training programs should include technological pedagogical content knowledge?

Participant 3: To be honest I disagree with it, because it is not better than face-to-face learning.

Researcher of the Case Study: Thank you for your answer. So, has your experience with other courses affected your experience in flipped learning?

Participant 3: My face-to-face courses were better because they weren't online. Therefore, face-to-face is much better than doing flipped learning.

Researcher of the Case Study: So, is there a specific previous learning experience that shaped how you currently experience flipped learning?

Participant 3: Can you rephrase the question, please?

Researcher of the Case Study: As in you talked before that face-to-face was a better learning experience for you. So, is there a specific learning experience which also affected your flip learning experience?

Participant 3: There is covid. So, we are online but there is no learning, it's a very bad experience.

Researcher of the Case Study: Sorry to hear that, thank you for your answers. So next I would ask you, how your views and actions may have changed regarding flipped learning?

Participant 3: We've been the same for a year now, as I said communication is difficult.

Researcher of the Case Study: Thank you very much. When you reflect on this flipped learning course are there any positive aspects, and if so, why?

Participant 3: A positive side is that we didn't have to go to school, but like I said, we didn't have any opportunities to interact with anybody else. Therefore, there is nothing really positive.

Researcher of the Case Study: Thank you. So, could you tell me about any negative aspects you want to add?

Participant 3: Of course, with the students there are not that many interactions because they are distracted easily. We're now home, and sometimes there's internal problems. You can't keep track of everyone, and what they are doing at the same time. You can't interact one-on-one because you get interrupted by other students. These are the main aspects.

Researcher of the Case Study: Thank you. So, if I asked you to give advice to a teacher trainee who will take this flipped course for the first time, how would you advise them?

Participant 3: I would not recommend, but if they have to then they should have a good interest, and make sure that the class is not too big. So, with probably three or four people, otherwise there is not much chance for communication.

Researcher of the Case Study: Thank you so much. So, is there something that you might not have thought about before that has occurred to you during this interview, regarding flip learning?

Participant 3: Nothing really comes to mind.

Researcher of the Case Study: Is there anything else you would like to add?

Participant 3: No these are my opinions towards learning.

Researcher of the Case Study: Finally, is there anything you want to ask me?

Participant 3: What is your opinion on flipped learning?

Researcher of the Case Study: Unfortunately, in order to protect the objectivity of this study, I cannot comment on that but I do recommend to read my published work for my opinion when it's finished.

Participant 3: Okay.

Researcher of the Case Study: Thank you very much for your time. I'll stop the recording.

APPENDIX L:

Transcript I

Transcript I- Participant ID No. 2, BA ELT, Female, 25-34 years old

Researcher of the Case Study: Hello, welcome to this interview. How are you?

Participant 2: I'm good.

Researcher of the Case Study: Can I ask what inspired you to become a trainee teacher?

Participant 2: My whole take on the teaching is that my whole family mentored me to become a teacher. They inspired me in a single way. So, I decided to become a teacher and I really loved it.

Researcher of the Case Study: Okay. Thank you for your answer.

Researcher of the Case Study: So how is your flip learning course conducted, as in what is required of you as a teacher training in your online course?

Participant 2: We take notes when they call us every day for our lesson.

Researcher of the Case Study: Thank you for your answer. So, could you give me your opinion on the policy that all teacher training programs should include technological pedagogical content knowledge?

Participant 2: I think it's a very bad teaching method because I don't find it productive enough for it to teach us everything. Teaching is meant to be taught face-to-face with materials, like whiteboards for us to clearly understand everything based on teaching from our movements to our mimics.

Researcher of the Case Study: Thank you for your answer. So, has your experience with other courses affected your experience in flipped learning?

Participant 2: It has affected me because I used to listen much better in the classroom. I cannot concentrate in a virtual home environment, it's very hard for us to concentrate, and teachers can express themselves poorly across the camera. It's much better when they write things down in the classroom, and teach us face-to-face.

Researcher of the Case Study: So, is there a specific previous learning experience that shaped how you currently experience flipped learning?

Participant 2: The pandemic happened recently and we were on zoom. But there is not enough interaction with the students. Flipped learning is worse with zoom.

Researcher of the Case Study: Thank you for your answers. So next I would ask you, how your views and actions may have changed regarding flipped learning?

Participant 2: I have become more tired and make less effort towards my lessons. I don't feel motivated enough to learn online, I don't even want to go into the lesson. Because when you're face-to-face, you get motivated to go to, then your teacher motivates you when you're face-to-face. But with online, it's really hard to talk in detail with each student. With one on one, eye contact is very important as well. I will always prefer face-to-face learning.

Researcher of the Case Study: Thank you very much. When you reflect on this flipped learning course, were there any positive aspects and why?

Participant 2: We just improve our ICT skills, apart from that I didn't find any benefits.

Researcher of the Case Study: Thank you. So, could you tell me about any negative aspects you want to add?

Participant 2: I don't find it suitable for a student to learn teaching online because teaching should be taught face-to-face with our mimics with our hand's movements. This is a much better way to learn for all of us.

Researcher of the Case Study: Thank you. So, if I asked you to give advice to a teacher trainee who will take this flipped course for the first time, how would you advise them?

Participant 2: I would say don't choose a flipped course. However, if you are forced to, I would say that you should give more attention towards flipped learning because it's very hard to concentrate.

Researcher of the Case Study: Thank you so much. Is there anything that you might not have thought about before, that has occurred to you during this interview regarding flipped learning?

Participant 2: Actually, thanks to this interview, I realize how bad flipped learning is.

Researcher of the Case Study: Is there anything else you would like to add?

Participant 2: No.

Researcher of the Case Study: Finally, is there anything you want to ask me?

Participant 2: No.

Researcher of the Case Study: Thank you much for your time. I'll stop the recording.

APPENDIX M:

Transcript J

Transcript J- Participant ID No. 5, Female, BA ELT, 18-24 years old

Researcher of the Case Study: Good afternoon. Welcome to this interview, how are you today?

Participant 5: I'm very good thank you. And how are you?

Researcher of the Case Study: I'm okay, can I start this interview?

Participant 5: Yes.

Researcher of the Case Study: What inspired you to become a trainee teacher?

Participant 5: I love learning and trying new things, so I decided that teaching would be my ideal dream job.

Researcher of the Case Study: Thank you. So, you're taking a flipped learning course right now. How is your flip learning course conducted, as in what is required of you as a teacher trainee?

Participant 5: They require us to login, turn on our cameras and listen to the lecture.

Researcher of the Case Study: Thank you very much. So, could you tell me your opinion on your institution's policy that all teacher training programs should include technological pedagogical content knowledge, in the form of flipped learning?

Participant 5: It is important for us when we're learning to produce materials, PowerPoints, and Word documents during our lectures.

Researcher of the Case Study: Have your experiences with previous courses in your teacher training program affected your experience in your flipped learning course?

Participant 5: Yes, because during my other courses I always found it very entertaining face-to-face. However, during flipped learning, I could not fully concentrate because I was not used to learning on laptops.

Researcher of the Case Study: Thank you very much. What specific previous learning experiences have shaped how you experience flipped learning in your current course?

Participant 5: With my previous experiences I have always learned face-to-face. During flipped learning I find it very hard to understand what my teacher is trying to say, specifically because it's not clear when there is nothing for us to actually see, in flesh and bone.

Researcher of the Case Study: Could you tell me how your views and actions may have changed regarding your flipped learning course?

Participant 5: I have become more of a lazy person. I don't feel like joining in the lesson, I prefer to sleep.

Researcher of the Case Study: Thank you very much for your answer. How have you developed as a trainee teacher since starting your flipped learning course?

Participant 5: I haven't developed because I have zero motivation to study. I don't even want to listen to the lesson online.

Researcher of the Case Study: Thank you very much when you reflect on your flipped learning experience, what aspects are positive and why?

Participant 5: They teach us how to use technology, so that's really good. We can join classes online, for example, for certificates and other things. However, for our main course flipped learning is not suitable.

Researcher of the Case Study: Thank you very much. As a follow-up question, when you reflect on your flipped learning experience, what aspects are negative, and why?

Participant 5: I find it very hard to concentrate. I don't find it productive; I don't take down notes.

Researcher of the Case Study: Thank you very much for your answer. After having this flipped learning experience, what advice would you give to another teacher trainee, who will be starting this course?

Participant 5: I recommend that they make it slower, and they put the slides on the internet, because it's very hard to understand flipped learning.

Researcher of the Case Study: Thank you very much. Is there something you might not have thought about before that occurred to you during this interview, regarding your flipped learning experience?

Participant 5: No.

Researcher of the Case Study: Is there anything else you would like to add?

Participant 5: No, thank you.

Researcher of the Case Study: Finally, is there anything else you would like to ask me?

Participant 5: No, thank you.

Researcher of the Case Study: Thank you, I will end the interview here.

APPENDIX N:

Transcript K

Transcript K- Participant ID 32, PGCE, Female, 25-34 years old

Researcher of the Case Study: Hello, I would like to first welcome you to this interview, and ask you how you are?

Participant 32: I'm fine. How are you?

Researcher of the Case Study: I'm fine, thank you. Is it okay if I start the interview?

Participant 32: Yes.

Researcher of the Case Study: So, what inspired you to become a trainee teacher, as in what motivated you?

Participant 32: My family encouraged me to pursue a career in education.

Researcher of the Case Study: Thank you for your answer. So as a teacher trainee, you are currently taking a flipped learning course. So, my question to you is how is your flipped learning course conducted, as in what is required of you as a teacher trainee?

Participant 32: Taking notes and receiving video-conference calls.

Researcher of the Case Study: Thank you. So, could you tell me about your opinion on your institutions policy? That's all-teacher training programs should include technological, pedagogical, content knowledge, in the form of flipped learning.

Participant 32: It is terrible, I miss having a face-to-face classroom learning environment.

Researcher of the Case Study: Thank you very much for your answer. So, what I want to ask you now is that; has your experience with previous courses, that does not contain

a form of flipped learning, in your current teaching training program, affected your experience in your current flipped learning course?

Participant 32: I cannot concentrate in a virtual home environment; I prefer my face-to-face lessons. I am use to learning face-to-face effectively.

Researcher of the Case Study: Thank you very much. So, based on what you have said, is there a specific learning previous learning experience? Pardon me? That shapes how you experienced flip learning in your current course.

Participant 32: I prefer face-to-face learning, as I said previously, because it is a much more productive way for us to learn. And for us to become the best future teachers.

Researcher of the Case Study: Thank you for your answer. So, could you tell me how your views and actions may have changed regarding your flipped learning course?

Participant 32: Being online all the time is annoying and I wanted to give flipped learning a chance at the start, however, I ended up hating it. Based on the reasons I have mentioned in this interview.

Researcher of the Case Study: So, on that basis, how have you developed as a teacher trainee since starting your flipped learning course?

Participant 32: I haven't developed that much. Because we don't learn that much with flipped learning as mentioned.

Researcher of the Case Study: Thank you. So, when you reflect on your flipped learning experience, what aspects are positive and why?

Participant 32: Improving ICT skills, that is all I can think of.

Researcher of the Case Study: So, as a follow up question when you reflect on your flipped learning experience, what aspects are negative and why?

Participant 32: As I said, the I do not approve of flipped learning. Everything should be taught face-to-face.

Researcher of the Case Study: On that basis, what advice would you give to another teacher trainee who will start this course?

Participant 32: I wish you did not have to take this course, please appreciate your time in the face-to-face classroom sessions of flipped learning. If possible.

Researcher of the Case Study: Thank you very much. So, is there something you might have not thought about before that has occurred to you during this interview regarding your flipped learning course?

Participant 32: Nothing else.

Researcher of the Case Study: Thank you very much for your answer. Is there anything else you would like to add?

Participant 32: No.

Researcher of the Case Study: Is there anything else you would like to ask me as a final question?

Participant 32: No, thank you.

Researcher of the Case Study: Thank you very much. I'll stop the interview now.

APPENDIX O:

Transcript L

Transcript L- Participant ID No. 37, Female, PGCE, 18-24 years old

Researcher of the Case Study: Hello there, thank you for agreeing to this interview. If it's okay with you, may we go ahead and start?

Participant 37: Yes, that's totally fine. Thank you.

Researcher of the Case Study: So, what inspired you to be a trainee teacher?

Participant 37: Well, I wanted to work in a school. But because I studied psychology, I needed a pedagogy course in order to be able to teach in schools about psychology, so I had to become a trainee teacher. So, I guess my inspiration is the mandatory occupation of it.

Researcher of the Case Study: Thank you for your answer. So, within this pedagogy course, you are currently undertaking your flipped learning course, as a teacher training. So, my question to you is, how is your flipped learning course conducted? As in what is required of you as a trainee teacher?

Participant 37: We are required to listen to lectures online, answer questions online, and prepare a lesson plan for teaching online.

Researcher of the Case Study: Thank you very much for your answer. So, could you tell me about your opinion on your institutions policy that all teacher training programs should include technological pedagogical content knowledge, in the form of flipped learning?

Participant 37: Well, if it's the policy then that's what has to happen. Like I said, we need to take pedagogy to become teachers. So, if it's a policy, it's a policy, we have to do it.

Researcher of the Case Study: Thank you very much for your answer. So, has your experience with previous courses in your teacher training program affected your experience in your flipped learning course?

Participant 37: Actually, yes. So, before we were doing group projects, and we were communicating together. But this whole entire flipped learning experience has made the idea of group work, terrible! I'm very used to working with people and communicating with them, but I cannot do this with flipped learning.

Researcher of the Case Study: Thank you for your answer. So, following on from the previous question, what specific previous learning experiences shape how you experience learning in your current course?

Participant 37: Specifically, I think it's very hard to ask questions to teachers. Before I used to get a lot of feedback because I need to learn, I've never taught in my life. And this pedagogical project course is supposed to help me learn that. But in flipped learning we cannot ask this. It's become a terrible method of gaining knowledge.

Researcher of the Case Study: Thank you very much for your answer. So, could you tell me how your views and actions may have changed regarding your flipped learning course?

Participant 37: Overall, I think my views and actions about online learning have changed a lot. Because there's so much technological difficulties with internet, small computers, and the communication I mentioned before. So, it's made us change the way we approach learning, however not in an effective way.

Researcher of the Case Study: Thank you for your answer. So, when you reflect on your flip learning experience, have any aspects been positive?

Participant 37: I don't really see positive aspects, and I'm very sorry to say this. I can't answer this question.

Researcher of the Case Study: Honestly, that’s totally fine. No need to worry. Then let me ask you this question, what are the negative aspects when you reflect on your flipped learning course?

Participant 37: I can write you an entire essay on the negative aspects of our flipped learning course. Maybe I can even write a thesis like you! But overall, I think one of the four key things that I have pointed out is communication, technological difficulties, and teacher feedback. Time is also a big limitation, because we have limited time. And we can't always ask every question to our teacher, and they're not always available on their computers for us. Of course, they have their own life, their home life. Like my teacher has children, who have joined us during our sessions. So, I think there are a lot of negative aspects that need to be solved for a good learning environment.

Researcher of the Case Study: Thank you very much. So, after having this flipped learning course experience, what advice would you give to another teacher trainee?

Participant 37: To who will start this course I would advise them to be very careful about the four negative aspects I've talked about before, and find a way to work around them. Because if they don't, they are going to have a terrible time. Even though we are still working through it, perhaps we can help them a little bit and guide them.

Researcher of the Case Study: Thank you so much. So, is there something that you might not have thought about before that occurred to you during this interview, regarding your flipped learning experience?

Participant 37: I think I stand with my points, especially the negative aspects.

Researcher of the Case Study: Thank you. Is there anything else you would like to add?

Participant 37: At the moment I cannot think of anything.

Researcher of the Case Study: Finally, is there anything else you would like to ask me?

Participant 37: What will you do with the results of this study?

Researcher of the Case Study: As noted in the participant information sent to you in the email, I am using these results to create a thesis for future decimal publishing notes.

Participant 37: Oh, that's great. Because then you know, people will see the truth about flipped learning.

Researcher of the Case Study: I guess so, is it okay if I end the interview here?

Participant 37: Yes, it's fine.

Researcher of the Case Study: Thank you very much for your time.

APPENDIX P:

Transcript M

Transcript M- Participant ID No. 38, Male, PGCE, 18-24 years old

Researcher of the Case Study: Good morning, how are you?

Participant 38: I am fine and how are you?

Researcher of the Case Study: I am well, thank you, can I start the interview?

Participant 38: Yes.

Researcher of the Case Study: What motivated you to become a trainee teacher?

Participant 38: I wanted to study pedagogy so I can use it to open my own art studio and teach students how to draw because I am an art major, but I'm not allowed to legally teach without a pedagogy certificate.

Researcher of the Case Study: Thank you so much for your answer. As you know you are currently undertaking a flipped learning course. So, my question to you is, how is this course conducted, as in what is required of you?

Participant 38: We are required to attend everything online and learn about everything online. Then take notes, do some quizzes, that's about it.

Researcher of the Case Study: Thank you, so could you tell me about your opinion on your institutions policy that all training programs should include technological pedagogical content knowledge, in the form of flipped learning?

Participant 38: So, there are a lot of policies, for example, like I said I need a pedagogy certificate to open a studio and be able to teach students art. So, if there's this policy that

we also need to learn flipped learning, and it's all intertwined to each other so everything is just a policy in Cyprus.

Researcher of the Case Study: Thank you. So have your experiences with previous courses in your teacher training program, affected your experience in flipped learning?

Participant 38: Actually, yes before the pandemic, this course was also face-to-face but now everything is online, so we're not doing any practical work in an art major. I find this very disturbing. So, it's not helping me a much to learn how to be practical with my students in class.

Researcher of the Case Study: Thank you very much. So, are there any specific previous learning experiences that shape how you experienced flipped learning in your current course?

Participant 38: As I've said, I'm more of a hands-on person, so everything being online is not helping my methods of learning.

Researcher of the Case Study: Thank you very much. So, could you tell me how your views and actions may have changed regarding your flipped learning course?

Participant 38: Yes, actually with this course being online, I do wonder how people teach art online, because I cannot find a reason for it to be taught through online lessons. I mean, there are YouTube videos that teach us how to draw, but that's different, I just don't think every course should be flipped.

Researcher of the Case Study: Thank you. Have you developed as a trainee teacher since starting your flipped learning course?

Participant 38: We've been with this course for a year and it's not been easy. I'm trying to adapt, and I just don't think I've developed. It’s just me taking the online seminar and I don't see how it's relevant to me being a good teacher.

Researcher of the Case Study: Thank you very much. So, when you reflect on your flipped learning experience, which aspects are positive, and why?

Participant 38: The only positive thing I can find is that in the end I will get my certificate.

Researcher of the Case Study: Thank you very much. So, when you reflect on your learning experience. What aspects are negative, and why?

Participant 38: Honestly, I can't concentrate because we keep looking at the screen, and I've ended up buying some of those blue shaped glasses that you use to stare at the screen. I've also had a lot of technical issues; I struggled a lot with using software. So, there was, the mandatory completion of online tasks, for example, quizzes. However, there was no mandatory attendance required for the live lessons. Therefore, I believe I didn't learn a lot.

Researcher of the Case Study: Thank you very much. So, after having this flipped learning course experience. What advice would you give to another trainee teacher who will start this course?

Participant 38: To start this course when it's face-to-face and not during a pandemic, based on everything I've said.

Researcher of the Case Study: Thank you very much. Is there something that you might not have thought about before that occurred to you during this interview, regarding your flipped learning experience?

Participant 38: No.

Researcher of the Case Study: Is there anything else you would like to add?

Participant 38: No.

Researcher of the Case Study: Is there anything else you would like to ask me?

Participant 38: No, thank you very much.

Researcher of the Case Study: Thank you very much for your time. I'll stop the recording.

APPENDIX Q:

Transcript N

Transcript N- Participant ID No. 40, Female, PGCE, 18-24 years old

Researcher of the Case Study: Hello, welcome to this study. How are you?

Participant 40: I am fine, how are you?

Researcher of the Case Study: I am well, thank you, can I start the interview?

Participant 40: Yes.

Researcher of the Case Study: What inspired you to become a trainee teacher?

Participant 40: In order to have an academic career and open my own teaching school.

Researcher of the Case Study: Thank you very much for your answer. So, how is your flipped learning course conducted, as in what is required of you as a trainee teacher?

Participant 40: We are required to listen to videos and watch short films that our teacher talks in.

Researcher of the Case Study: Thank you very much for your answers. So, could you tell me about your opinion on your institutions policy that all teacher training programs should include technological pedagogical content knowledge, in the form of flipped learning?

Participant 40: If it is a requirement, we must do it.

Researcher of the Case Study: Thank you very much. Have your experiences with previous course models, in your teacher training program, affected your experience in your flipped learning course?

Participant 40: Yes. Actually, me and my friends were doing role-play to understand information where we act like the teacher and students, and we teach each other. So, I really missed that and that's really impossible with flipped learning, but there's also good sides to flipped learning because we learn visually.

Researcher of the Case Study: Thank you so much. So, what specific previous learning experiences shape how you experience flipped learning in your current course?

Participant 40: I really like learning visually. So, in other courses when we learn through posters and handouts, it really affected my flipped learning because I wanted to see everything in front of me as well, like it already is in flipped learning.

Researcher of the Case Study: Thank you very much for your answer. Could you tell me how your views and actions may have changed? Regarding your flipped learning course?

Participant 40: Yes. Before I used to find that reading didn't help a lot, but in order to understand the topic more easily I kept playing the video over and over again, like a record player, and it really helped me.

Researcher of the Case Study: Thank you very much. So how have you developed as a trainee teacher since starting your flipped learning course?

Participant 40: I think the most important thing was making a group of friends who also wanted to teach, and have the same aspirations. That is the only thing that helped me develop more in flipped learning and concentrate.

Researcher of the Case Study: Thank you very much. So, when you reflect on your flipped learning experience, what aspects are positive, and why?

Participant 40: The positive aspects are seeing everything visually and not having to read.

Researcher of the Case Study: Thank you very much for your answer. So, as a follow-up question. When you reflect on your flipped learning experience, what aspects did you find negative and why?

Participant 40: I think only the teacher is the negative side because he gave us a lot of homework, and not a lot of feedback. We were expected to do so many tasks. Sometimes we would have five online tasks to complete for flipped learning. Which was very funny

to me because we're supposed to learn how to become a good teacher, but our teacher was not effective.

Researcher of the Case Study: Thank you so much. So, after having this flipped learning course experience. What advice would you give to another trainee teacher who will start this course?

Participant 40: It's very important to pick a group of friends who will support you through this course. Teacher trainee communication is important, more important than teacher feedback, as you help each other and you give each other feedback, more than your teacher.

Researcher of the Case Study: Thank you so much for your answer. Is there something you might not have thought about before that occurred to you during the interview regarding your flipped learning experience?

Participant 40: No, there is nothing.

Researcher of the Case Study: Is there anything else you would like to add?

Participant 40: No, I would like to thank you for this interview. It's very nice to see how interviews are conducted.

Researcher of the Case Study: No problem at all. Finally, is there anything else you would like to ask me?

Participant 40: No, I'm okay.

Researcher of the Case Study: Thank you very much for your time. I'll stop the interview here.

APPENDIX R:

Transcript O

Transcript O- Participant ID No. 31, Female, PGCE,25-34 years old

Researcher of the Case Study: Hello, how are you? Welcome to this interview.

Participant 31: I am fine, how are you?

Researcher of the Case Study: I am well, I will go ahead and start the interview if that's okay?

Participant 31: Yes, it's okay.

Researcher of the Case Study: What inspired you to become a teacher trainee?

Participant 31: A very good salary according to the conditions of Northern Cyprus.

Researcher of the Case Study: Could you tell me about your opinion on your institution's policy that all teacher training programmes should include '*Technological Pedagogical Content Knowledge'* (*TPACK*), in the form of flipped learning?

Participant 31: They expect a lot from us to know very good ICT things, like make PowerPoints.

Researcher of the Case Study: Has your experience with previous courses (modules) in your teacher training programme affected your experience in your flipped learning course?

Participant 31: In my old course we were expected to memorise everything, so I am used to studying. In flipped learning we learn how to read and make slides, which makes me not understand much. I do more research on how to make things than learn.

Researcher of the Case Study: What specific previous learning experiences shape how you experience flipped learning in your current course?

Participant 31: I prefer face-to-face learning, seeing the teacher sit and drink coffee does not make me focus. She is just reading some things.

Researcher of the Case Study: Could you tell me how your views and actions may have changed regarding your flipped learning course?

Participant 31: I feel more stressed with flipped learning as there is so much digital ICT things, you have to keep studying it.

Researcher of the Case Study: How have you developed as a teacher trainee since starting your flipped learning course?

Participant 31: I have developed some new ICT skills because of stress, but not for teaching.

Researcher of the Case Study: When you reflect on your flipped learning experience, what aspects are positive and why?

Participant 31: I guess staying home and not running between lessons.

Researcher of the Case Study: As a follow-up question, when you reflect on your flipped learning experience, which aspects are negative and why?

Participant 31: The teacher not giving good comments (feedback), no group work, or exams to make us study. Also, everything I said before.

Researcher of the Case Study: After having this flipped learning course experience, what advice would you give to another trainee teacher who will start this course?

Participant 31: I would tell them if they want to be a teacher, they have to put up with it and make sure they have good ICT skills.

Researcher of the Case Study: Is there something you might not have thought about before that occurred to you during this interview, regarding your flipped learning experience?

Participant 31: No, actually.

Researcher of Study: Is there anything else you would like to add?

Participant 31: No**.**

Researcher of the Case Study: Finally, is there anything you else you would like to ask me?

Participant 31: No, I'm sorry.

Researcher of the Case Study: No, it's fine, thank you for your time.

APPENDIX S

Open-ended Questions: Results

1) What is your experience of flipped learning?

Not feeling very well psychologically because it is not a normal process, because of COVID-19.
The lectures/exams in which it was mandatory to turn on the camera and microphone made me nervous.
I don’t value it. I don’t think it will assist in finding a job after graduation.
I think it was too much as I didn't understand the digital side, I need more help with that.
Bored of it.
Flipped learning is an opportunity given through videos and live lessons, but I am not very involved in this system. This is because I think the lessons are easy.
My experience was not good at all as I think it is a useless way of learning, and I don’t think that it contributed anything to me.
We and our teachers consider ourselves insufficient in terms of professional competence in flipped learning.
I think it was too much as I didn't understand the digital side, I need more help with that.
Low satisfaction.
It is depressing.
Chaotic as my teacher was very demanding and half the time was just reading off the slides.

Everything I know, or think I know, about management of learning I have to reorganize because of flipped learning.
Not everyone has the discipline to manage their own education, so group work fails.
Flipped learning is not suitable for all courses. For example, making 3D course materials.
It has been my life for one year and I'm used to it. I don't hate it but I don't love it.
Learning difficulties encountered throughout the learning process. Problems that may occur as a result of this scenario, cannot be handled immediately.
Trying to learn how to use it.
There are very few positive aspects. There is a virus, we are afraid of it, but I think it is ridiculous that the education sectors are closed when everywhere else is open.
A more relaxed and informal environment.
I have a negative experience with flipped learning. I believe it is very hard to follow a lesson online, and it is not as effective as learning in a traditional classroom.
Negative.
I don't have the discipline for it.
I find flipped learning difficult to understand certain subjects.
I don't know enough about flipped learning.
I have difficulty self-studying and motivating myself.
Motivation to get used to it is very important. I had to make myself get used to it.
Based on my experience I can say that it was unpleasant.

Horrible.
As my term was online, it was a tv show for me.
It's a good way to keep on learning when you are unavailable to attend. Also, a good way to keep on learning during a pandemic. Though there are many cons to it also. There are many technical issues with lives etc.
Lack of learning.
It is bad.
Have been taking video conference courses and submitting assignments online.
Mixed feelings.
Not good.
Good.
It has been more than a year since I started doing my studies with flipped learning. It has not been easy and I am still trying to adapt. I believe everyone is trying their best to cope. However, in my opinion when being compared to face-to-face education, communicating and learning through a digital environment is not efficient enough.
It has not been a good experience, with difficulty to communicate with teachers. Technological difficulties to do with internet or the computers. Assigned group projects have also provided students with great difficulty. In addition, due to being online learning, most teachers began to give a lot more work but then would be really late with providing any type of feedback.
During my academic career, our teachers explain to us the lessons with videos or short films.

2. Specifically, what has your experience been in the comprehension (understanding) of taught course materials through flipped learning?

I don't think there is an advantage, just reading things online is no help.
Creating an environment that is very suitable for cheating in online exams. No real learning.
Technical problems have caused me to not learn well.
Very difficult, I can't find where things are and I call my friend who is good at these things for help.
I feel like I am not really learning.
As I said I found it too easy, there was no educational challenge to make you think.
I don't think I understand anything taught by online course materials as it can sometimes make the content much harder to understand, and also experimental based or group work cannot be done online, which is a huge loss for students.
Teachers are not fully competent in preparing content in flipped learning; therefore, our understanding is not competent.
It's okay but the PDF books hurt my eyes, and I need to read on paper to understand more efficiently.
Flipped learning is provided with today's technologies, but our university is still in the preparation stage for it.
I don't like it; I miss my books.

I have moved on to self-teaching myself. As noted, my teacher was just reading off the slides, no discussion took place.
The old teachers cannot use them very well, many times the lesson understanding is not there, we help them instead.
Technical inadequacies hindering education.
Generally, questions asked in non-live training are not answered immediately. So, less understanding takes place.
It is not mandatory to attend live sessions so I just watch the videos. I don't believe it is effective.
The responsibility of employed people to study in the time they are free, does not help. I'm too tired to learn.
Information about education and training systems online is not enough for us to learn.
Online education cannot give more than 20% efficiency to a student I believe. At the same time, I don't think it's fair, considering that my friends in villages who don't have internet access or good technology cannot learn.
I am very relaxed. Everything is just reading.
Comprehension of course materials was terrible for me. Flipped learning increased the complexity of the course materials which made it harder to comprehend.
Not easy to understand and follow.
Given constant homework but no training/explanation or someone forcing us to do the homework. No check is given as well.
It is difficult to communicate with the teacher/professor.
I have deficiencies in computer and Internet use.

I can’t learn outside the classroom environment without friends and instructors, I believe.
Ensuring that education is in an appropriate environment and on a continuous basis is important in flipped learning. Many times, I have found it not a good place to understand.
The materials were not enough for me to understand the course in full detail.
Not satisfied.
Bad as I said, tv show.
Not much depth in teaching. Very basic and general. No space for discussion.
Less understanding.
It has been low.
Since it's harder to do the practical part of learning, it was kind of a negative experience.
It was okay, good I guess.
Not effective.
We had a lot of ideas with my friends, so I can easily see all thoughts.
I dealt with concentration problems, and looking at a screen for days has created sight problems.
It made it harder, as it is harder to ask questions. The times are limited and it is not as easy to catch, and speak to a member of staff.

Sometimes we cannot learn through reading, so we need to capture the answer to remember it whenever we need. In order to understand the topic easily, videos play a really important role. It grabs my attention more easily and helps me to gain the data quickly.

3. What is your experience of interpersonal relationships within flipped learning?

Note: Interpersonal relationships are two or more people's social connections, interactions, or affiliations (Stebbins, 2015).

Relationships are starting to get a little artificial.
Communication skills have become weak, active student-teacher dialogue has disappeared.
I also don't value it. It is a class on a computer, no social skills for job development.
Helping each other learn how to use flipped learning.
Just by myself we are only allowed to listen when the microphone is off.
I think this also had an effect on making the lesson easy, we just talked about the lesson so it was meaningless. No problem solving like we do in the class.
As they are all online, I don't think I can build a relationship with my classmates.
Only teacher-student talk happens.
It wasn't good at all because our teacher was not good enough with flipped learning.
Passive monitoring as in television. No communication.

I am away from everyone and don't have breaks to talk face-to-face, it is not nice.
There were not many interpersonal relationships in my flipped learning course. I was just staring at blank screens with a name, and a teacher just talking to the camera.
We did not talk much; more focus was on the teacher.
Only arguments are over group projects, like I said not everyone is focusing.
We can say that there is almost no face-to-face interaction with distance education. Therefore, it is necessary to accept this, no matter how hard it is.
None I feel alone.
Planning is harder for those who do not have self-focus and have not built this skill in group work.
No time, we are too busy trying to understand how to use it and learn our degrees.
No kindness, it's too cold like learning with no warm friendship, I don't find it logical.
We just read and listen. We don't talk.
Flipped learning worsened my interpersonal relationships. During my studies, as a result of online learning, I was not able to meet with any of my classmates face-to-face. We were only interacting during online classes and that time is not sufficient to create an interpersonal relationship.
Negative.
Being socially affected too much, falling into negative factors of just being on a laptop.
Non-experienced.

They are people I know from before, so we listen and text message at same time.
Flipped learning is not the same as face-to-face education based on friendship, cultural activity, and communication).
Very hard, I try to type questions but the teacher moves fast.
My experience was not productive I found it useless.
Terrible.
It was good, we laughed in the chat while the teacher was talking.
Difficult. Non-existent.
Mu social connections became worse.
Not bad.
Interpersonal relationships were not developed at all.
Good in terms of texting.
There was no interaction.
I like it.
I had many difficulties in communication especially because of Wi-Fi. Some days I struggled with attending meetings and lectures.
It has had a negative impact on me, the social aspect of university has completely gone and we are always behind a screen doing back-to-back lessons.

During my university career, I made a group of friends from my faculty. We used to help each other during the exam period. One of our friends created a role-play. Actually, me and my friends were making role-plays in order understand information, in which we act like teachers and students, taking turns to teach each other. I really miss it as it is impossible with flipped learning.