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Exploring the relationships between learning experiences, cultural identity, social value orientation, and learning preferences
evidence from China and the UK

Exploring the Relationships Between Learning Experiences, Cultural Identity, Social Value Orientation, and Learning Preferences: Evidence From China and the UK

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Abstract

The present research explores the relationship between previous learning experiences, individualist-collectivist (I-C) culture and learning preferences in China and the UK, considering the potential mediating role of social value orientation (SVO). In particular, the research focuses on distinctions between cooperative, competitive, and individualistic experiences and preferences. In addition, the research asks what people believe affects their formation of learning preference.

A sequential mixed-methods design was adopted. Studies 1 and 2 quantitatively explored the relationships using a self-report survey in China (n = 260 Chinese undergraduates, 74 males and 186 females) and the UK (n = 302 UK undergraduates, 56 males and 246 females). Structural equation modelling was employed to analyse the survey data. Study 3 explored students' beliefs and experiences regarding what affects learning preferences. A total of six participants from each of China and the UK participated in semi-structured interviews. Vignettes were applied in the interview to elicit further data on this topic. Thematic analysis was used to analyse the qualitative data.

Studies 1 and 2 demonstrated the complexity of the relationship between learning preference and contextual and individual factors. In particular, the positive relationships between types of learning preference and corresponding previous learning experiences were more often seen in Study 1 with the Chinese sample than in Study 2 with the UK sample. Similarly, there were variations between the two studies in the relationships between I-C cultural identity and other factors. Qualitative findings highlighted that teacher-/student-centred classroom environment and learning goals, learners' characteristics, students' feelings, emotions and learning motivations, and parental influences, might also be associated with learning preference. The findings highlight an important distinction between the influence of national cultural background and individual cultural identity and provide evidence for the nature of the relationship between SVO and learning preferences.

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Declaration

I declare that the work in this dissertation was carried out in accordance with the requirements of the University's *Regulations and Code of Practice for Research Degree Programmes* and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, the work is the candidate's own work. Work done in collaboration with, or with the assistance of, others, is indicated as such. Any views expressed in the dissertation are those of the author.

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List of Abbreviations

CES	The Classroom Environment Scale
CHC	Confucian Heritage Culture
DWLS	Diagonal Weighted Least Squares
LEI	The Learning Environment Inventory
MCI	My Class Inventory
ML	Maximum likelihood
MVN	Multivariate normality
I–C	Individualism–collectivism
SEM	Structural Equation Modelling
SVO	Social value orientation
WIHIC	What is Happening in this Class

Contents

Chapter 1 Introduction

This research explores the relationships between students' previous learning experiences, the cultural identity they hold, their social value orientation (SVO), and the ways they prefer to learn. Specifically, the focus is on cooperative, competitive, and individualistic modes of learning, explored through surveys and interviews with undergraduates from two countries: China and the UK.

1.1 Background of the Research

Learning is one of the most significant human behaviours for individuals of all ages: people's growth or development requires this fundamental skill. Learning can be understood as the process of gaining new or modifying existing knowledge, skills, values, or behaviours (Gross, 2015). Human learning continues as an ongoing process of interactions between people and the environment from one's birth to death. Hence, two conditions of human learning are considered critical: learners' characteristics and the learning environment (Belkin & Gray, 1977). Individuals learn in different ways and have personal preferences for methods of obtaining new knowledge. From childhood to adulthood, people's experiences of growing up and learning contribute to developing their learning preferences. In this regard, individuals vary in their approaches to learning (Willingham et al., 2015). These individual learning differences can be referred to as learning preferences.

In recent decades, there has been a growing awareness of understanding and accommodating students' learning needs in educational settings based on their individual differences. Zapalska and Dabb (2002) argued that a comprehensive understanding of how students learn could assist in selecting appropriate teaching approaches. Many educators and scholars have attempted to determine how individual differences affect the nature of learning and how, in turn, to improve the learning context to facilitate more effective learning. However, there is still much to be understood about individual differences in learning. A range of contested theories from different perspectives exists in the literature, and no single definition of learning preference is conventionally accepted. It is worth noting that learning preference in this research should not be confused with learning styles. In many previous studies, learning styles are often concerned with learners' cognitive learning styles regarding processing information (e.g., Dunn & Milgram, 1993; Mayer & Massa, 2003). Although it has been demonstrated that people have different learning styles, there are real dangers in providing detailed and specific strategies to practitioners (e.g., "matching" teaching methods and learners' learning styles). In fact, existing research-based knowledge about learning style often showed that the theories and instruments were not equally useful – at best they are equivocal and at worst greatly contradictory, and no consensus regarding practical recommendations were available (Coffield et al., 2004).

Scholars have frequently investigated and conceptualised learning preferences in relation to different preferences for social interactions within the classroom environment (Owens & Straton, 1980). From this perspective, the concept of learning preference is concerned with learners' choice of classroom learning structure, within

which they might hold different inclinations towards approaches to achieving study goals. Such strategies include, for instance, cooperating with others, competing with peers, or working/learning independently (Johnson & Engelhard, 1992; Johnson & Johnson, 1989, 2005).

1.2 What Factors Affect Learning Preferences? The Influence of Culture and Learning Experiences

It has been posited that culture influences individuals' learning preferences: that is, learners from different societies characterised by distinctive cultures vary in their learning preferences (Hofstede, 2001; Hofstede et al., 2005; Triandis, 1995). Fraser (1981) proposed that students with different cultural backgrounds hold different perceptions of the classroom environment and learning modes.

Although culture has been studied from various aspects, the dimension of individualism–collectivism (hereafter referred to as I–C) culture is believed to be particularly associated with learning preference. According to the literature, a collectivist culture values collective good and emphasises group interest, whereas an individualist culture often highlights one's individual value and personal achievements (Hofstede, 2001; Hofstede et al., 2005; Triandis, 1995, 1996; Wagner, 1995). Hofstede (2001) noted that individuals from a collectivist culture (emphasising cooperation and sharing) tend to value group interests and norms and foreground interdependence within the group. Conversely, those from an individualistic culture place greater emphasis on self-accomplishment and self-interest. One can infer, therefore, that

individuals from a collectivist society are more likely to have cooperative learning preferences than those from an individualistic society (Hofstede, 2001; Hofstede et al., 2005).

In a study by Joy and Kolb (2009), findings suggested that individuals from countries that are high in collectivism exhibited different learning preferences from those from countries that tend to be more individualistic. Inal et al. (2015) later asserted that culture plays a pivotal role in inclinations towards group-oriented and interactive learning. Studies conducted in the United States (e.g., Ellison et al., 2005) indicated that students with collectivist cultural backgrounds performed better in group learning and tended to prefer a cooperative learning approach (i.e., cooperative learning activities in the classroom). In contrast, students from individualist cultural backgrounds reported stronger preferences for competitive and individualistic learning approaches.

In addition, school learning experiences may affect learning preferences. Studies have shown that students who frequently studied cooperatively with their peers were more inclined to have cooperative preferences than those who studied competitively (Ryan & Wheeler, 1977). This observation was supported by Johnson and Johnson (2005), who found that learning experiences are related to learning preferences regarding social interaction. They argued that the more cooperative learning experiences learners had (e.g., teachers' frequent use of cooperative teaching techniques and a collaborative classroom atmosphere), the more they tended to cultivate a cooperative learning preference. Based on empirical research findings, Choi et al. (2011) found that cooperative learning experiences in school were positively related to students'

preferences (referred to in their study as “predispositions in education settings”) for a cooperative learning approach. In other words, frequent engagement in cooperative learning experiences can predict levels of cooperative learning preference.

Few studies have attempted to examine the influence of culture and the educational environment simultaneously in one study. The current research has addressed this issue via a comparative study focusing on undergraduate students from the UK and China. This approach enables cross-cultural comparisons and, as such, allows for a better understanding of the impact of individualistic/collectivist cultures and the educational environment on students’ learning preferences. The culture and education of China and the UK have distinctively different characteristics (see Chapter 2 for further details). Chinese culture is frequently identified as a collectivist culture, whereas the UK’s culture is typically considered individualistic (Hofstede et al., 2005; Triandis, 1995). Furthermore, the educational environment differs between both countries. The Chinese learning environment is regarded as highly competitive (Biggs, 1991; Ho, 1991; Zhao & Selman, 2014). Meanwhile, the UK’s learning environment is less competitive and more cooperative than its Chinese counterpart (The Organisation for Economic Co-operation and Development [OECD], 2001, 2017). Thus, this research focused on two groups of undergraduate students – one from the UK and one from China – because these individuals had experienced two distinct indigenous cultures for a relatively long time. Additionally, they were more likely to have undertaken compulsory and high school education in both countries.

1.3 The Role of SVO

In addition to contextual factors (e.g., I–C culture and previous learning experiences), individual characteristics play an essential role in influencing learning preferences. People with different personal attributes may hold different inclinations towards different learning approaches. Previous studies have examined the relevant interactive and mediating factors at the individual level to explore how culture affects learning preference. For example, people's personality traits, such as extroversion/introversion, were found to be associated with learning preferences (Hutchinson & Gul, 1997; Laubengayer, 2018). However, few studies, if any, have explored the influence of SVO on individual learning preferences in terms of social interactions. Widely considered a personality trait, SVOs are defined as "stable preferences" for particular patterns of outcomes for oneself and others (Messick & McClintock, 1968; McClintock, 1978; Smeesters et al., 2003). Scholars have suggested that SVO is a crucial interpersonal orientation and tendency that drives people's behaviours regarding social interactions (Van Lange, 2000), which can have considerable implications for learning preferences.

The concept of SVO has been applied to explain individual differences of preferences towards cooperation, competition, and individualistic actions more generally (e.g., Smeesters et al., 2003; Van Lange et al., 2007). SVO has also been proven to be an essential determining factor concerning decision-making strategies and cooperative motives (McClintock & Van Avermaet, 1982; Kollock, 1998). Payoff transformations, through which SVOs are defined, were originally introduced by Edgeworth (1967), long before the dawn of experimental games, but they were first applied to games by the pioneering theoretical and experimental psychologist Deutsch (1949a, 1949b), and

developed into modern social value orientations by Messick and McClintock (1968) and McClintock (1972) to solve the problem that the material payoffs in experimental games take no account of players' other-regarding preferences – cooperation, competition, altruism, and equality-seeking (inequality aversion). Deutsch, Messick, and McClintock all viewed what came to be called SVOs as primarily state variables, and Messick and McClintock showed that very small nudges had large effects on SVOs. Previous studies have provided extensive supporting evidence for the role of SVO in predicting helpful and collective behaviours, judgements regarding incidents of competition and cooperation in daily life, and the tendency to self-sacrifice in real relationships (Bogaert et al., 2008; Beggan et al., 1988; Van Vugt et al., 1995). Thus, as a stable personality trait reflecting individual differences in terms of cooperative, competitive, or individualistic orientations and behaviours in a variety of contexts, SVO can be assumed to predict cooperative, competitive, or individualistic intentions and preferences (i.e., learning preferences) in learning environments.

1.4 Influence of Culture and Learning Experiences on SVO

As a relatively stable personal disposition, SVO is believed to develop early in one's life (Van Lange, 2000). The contextual factors with which individuals interact in their daily lives are thought to play a pivotal role in forming their SVO. For instance, I–C culture is widely believed to affect SVO. It has been found that individuals' tendencies towards individualism or collectivism form their orientation towards prosocial or proself actions (Grusec et al., 2002). In the literature, collectivism is associated with greater cooperation, while individualism is linked to greater competition (Carlo et al., 2001).

Children who grow up in a society with more collective norms and a group-oriented culture tend to behave prosocially and express more other-oriented values than those from more individualism-orientated cultures (Triandis, 2001; Triandis et al., 1988; Eisenberg et al., 1990; Mullen & Skitka, 2009).

As the primary place where the vast majority of children learn to socialise and become mature, school has a significant influence on SVO development (Johnson & Johnson, 2005). When people experience others' cooperative and prosocial behaviours, they tend to develop a prosocial value orientation in turn. In contrast, having repeated experiences with people who strive for self-interest or more advantages over others cultivates a competitive or individualistic value orientation (Van Lange et al., 1997; Bogaert et al., 2008). Hence, in learning settings, experiencing cooperative, competitive, or individualistic learning can influence students' SVO differently. Many studies have found a relationship between cooperative learning experiences and prosocial value orientations. Meanwhile, competitive learning experiences are associated with a competitive value orientation, and individualistic learning experiences may be linked with individualistic value orientations (e.g., Ryan & Wheeler, 1977; Johnson & Johnson, 1991, 1999, 2005; Choi et al., 2011). Taken together, it seems reasonable to assume that SVOs act as mediators between cultural/educational environment and learning preference.

Moreover, from early adulthood to late adulthood, the proportion of individuals with competitive orientations and individualistic orientations appears to decrease, whereas the proportion of individuals with prosocial orientations increases (Van Lange et al., 1997). As such, recruiting undergraduates for a research study could reflect the

impacts of their experiences from early childhood to young adulthood. According to Van Lange et al. (1997), undergraduate students' (aged 18–23) SVOs tend to be less influenced by chronological age than those of postgraduate students (generally older than 23 years). Thus, this research focused on undergraduates' SVOs.

1.5 Research Gap

Research examining learning preferences has a relatively long history with carefully established theoretical frameworks. Most of the studies in this field, however, have been conducted in Western contexts. These studies have tended to focus on (a) identifying several major types and categories of learning preferences and setting up corresponding models (e.g., Dunn & Dunn, 1978; Johnson & Johnson, 2005); (b) developing or modifying relevant measurements to examine learning preferences (e.g., Kolb, 1976; Johnson & Norem-Hebeisen, 1979; Grasha, 1990, 2002); (c) observing and recording the effects of learning preference on learning performance and outcomes (e.g., Çolak, 2015; Kolb & Kolb, 2005; Emerson & Taylor, 2007); or (d) applying the research findings to develop teaching techniques in the pursuit of enhancing students' learning processes (e.g., Johnson & Johnson, 1979, 2005).

While this body of research has contributed to scientific knowledge, little is known about the underpinning mechanisms regarding the development of learning preferences and how factors such as culture affect people's learning preferences at the individual level. Although many studies have investigated the relationship between culture and individuals' learning preferences, most have been set up on a national level rather than an individual level (e.g., Zhan et al., 2013) or have relied on a sample of

participants with different backgrounds from one multi-cultural country (e.g., Ellison et al., 2005). These approaches have some limitations. Firstly, the label of individualism or collectivism at the national level may not accurately reflect individuals' variations in their cultural identities. For example, Garrott (1995) found that Chinese students exhibited a strong tendency towards individualism, despite Chinese culture being widely considered collectivist. Secondly, identifying possible cultural influences based on a sample from one country may not sensitively represent cultural differences since participants from minority backgrounds are likely to be away from their original cultural environment. For instance, the cultural identity of Chinese immigrants in the United States could be different from the original Chinese culture in China (Chand & Ghorbani, 2011; Lieber et al., 2001).

In addition, although previous studies have addressed the influence of I–C culture on SVO, research has yet to consider the relationship between individual cultural identity and SVO. Moon et al. (2018) argued that such a relationship must be investigated since it can contribute to a deeper understanding of how people's cultural identity or inclination relates to SVO or tendencies. Therefore, this research examines the influence of I–C culture on learning preferences and SVO at the individual level (i.e., personal cultural identity regarding individualism and collectivism).

Notably, both SVO and learning preferences are grounded in the same theoretical tradition: social interdependence theory (Deutsch, 1949a, 1962). This theory posits that interdependence among members constitutes the essence of a group (for more details, see the literature review in Chapter 3). Inspired by game theory and mainly developed in economics and mathematics contexts, SVO has not yet been applied to

the pedagogical domain to understand individual differences concerning preferences for competition and cooperation in educational settings. Hence, the current research is one of the first studies to use the concept of SVO from the field of economic psychology to understand the influence of previous learning experiences and I–C culture on learning preference.

1.6 Definitions of Key Terms

Learning preference refers to students' preferences for cooperative, competitive, or individualistic learning approaches (Owens & Barnes, 1982).

Social value orientations (SVOs) may be viewed as "stable preferences" for particular patterns of outcomes for oneself and others (McClintock, 1972; Smeesters et al., 2003).

Culture is defined as the sum total of the thoughts, beliefs, values, knowledge, shared norms, and material artefacts in a society, which are handed down from one generation to the next (Colman, 2015).

Individualism is defined as the inclination for individuals to consider themselves as separate from a collective group and focus on one's own pursuits over collective values and interests (Triandis, 1995; Hofstede, 2001; Wagner, 1995, 2002).

Collectivism is the tendency for individuals to treat themselves as part of a collective group and highlight group interests over individual pursuit (Triandis, 1995; Hofstede, 2001; Wagner, 1995, 2002).

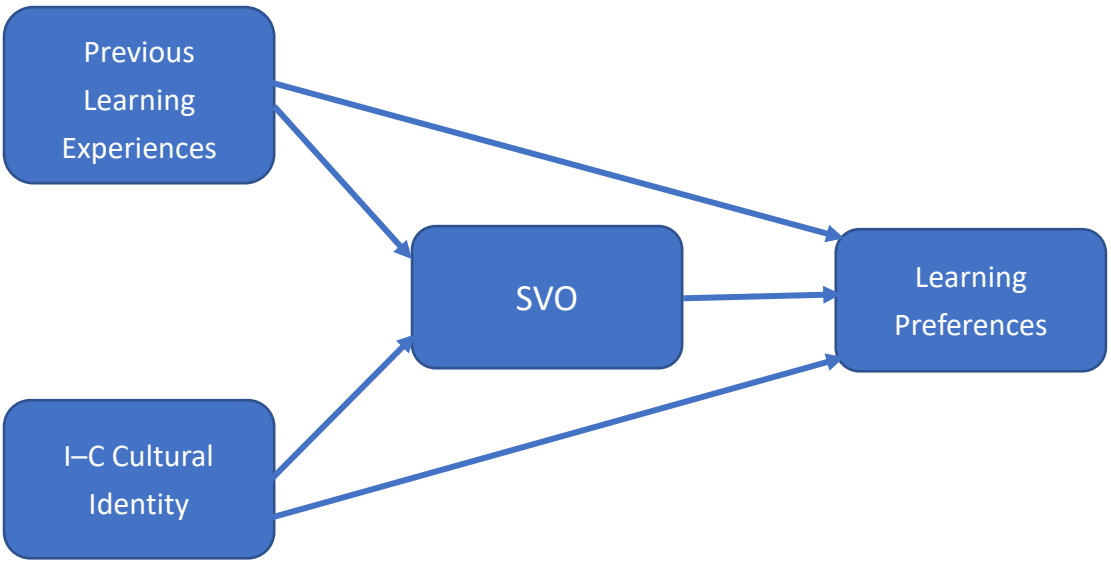
Previous learning experiences refer to students' experiences concerning their prior learning from primary school to high school (i.e., before higher education).

1.7 Research Aims and Objectives

In summary, the overarching goal of the present research was to investigate (a) the influence of culture and learning environment on the formation of SVOs among Chinese and British university students and (b) whether these influences might reflect students' learning preferences regarding cooperative, competitive, or individualistic approaches. This research sought to contribute to the theoretical context by employing a comparative approach to validate a proposed conceptual model (i.e., path model) empirically in two contexts (see Figure 1 below). The findings were expected to enhance an understanding of the concepts of learning preference and SVO.

Figure 1.

A Hypothesised Model of this Research



Note. It is acknowledged that there is a tension between culture and learning environments. However, since this tension remains unclear, the proposed study will not examine the relationship between these two variables based on the existing literature. Therefore, this model does not include the relationship between cultural identity and previous learning experience.

1.8 Thesis Outline

Chapter 1 has addressed the focus of the present research and explained the significance of learning preferences. It has introduced and discussed the influence of I–C culture and cooperative, competitive, and individualistic learning experiences on learning preferences and SVOs to provide a rationale for this research. Moreover, a hypothesised model is proposed as a framework of this research, and the research aims and objectives have been outlined.

Chapter 2 introduces the research context of China and the UK from cultural and learning environment perspectives. The cultural context is discussed in terms of both individualist and collectivist dimensions, and the learning context focuses on competition and cooperation.

In Chapter 3, the relevant literature is reviewed. This literature review addresses existing definitions of key constructs, related theories, and empirical findings to provide a comprehensive understanding of these concepts and how they have been associated with one another. After reviewing and discussing the relevant literature, research questions and hypotheses are outlined.

Chapter 4 addresses the methodological choices in this research and includes a discussion of philosophical underpinnings, a justification for using mixed-methods research, and a consideration of research ethics.

Chapter 5 documents the research methods and findings of Study 1 (a quantitative

study based on a sample of Chinese undergraduates). It provides a detailed description of sampling, the use of relevant measures, the data collection process, and the data analysis plan. The findings of this study are then presented and discussed with a focus on examining the hypothetical model in the Chinese context.

Chapter 6 describes the research methods and findings of Study 2, which replicates Study 1 using a sample of British participants. The chapter illustrates this study's sampling, the use of relevant measures, the data collection process, and the data analysis plan. This study's findings are then presented and discussed, focusing on examining the hypothetical model in the UK context.

Chapter 7 explains the research design, methods, and findings of Study 3: a qualitative study based on a sample of undergraduates from China and the UK. This chapter describes how qualitative data were collected and justifies the use of thematic analysis. Qualitative findings are then presented and discussed to gain a comprehensive understanding of what may affect learning preferences from the participants' perspectives.

Chapter 8 presents a general discussion on all three studies, linking the quantitative and qualitative findings to facilitate a deeper understanding of the research topic.

Chapter 9 summarises the key contributions of the present research and provides a conclusion. It also discusses the implications and suggestions for future practices based on the current research findings. Finally, the limitations of the study are considered, along with recommendations and implications for future research.

Chapter 2 Research Context

2.1 Overview

This chapter describes the cultural and educational contexts in China and the UK. The cultural context element focuses on the underpinning culture in China and the UK from the dimension of individualism and collectivism, while the learning context is mainly discussed from the perspective of social interactions: cooperative, competitive, or individualistic learning environments. This chapter aims to provide information regarding the research context to allow for a better understanding of the uniqueness and similarities of Chinese and British cultural and educational environments and explain why China and the UK were selected to investigate the research questions.

2.2 Chinese Collectivist Culture

The I–C cultural dimension is perhaps one of the most salient differences between China and the UK (Cortazzi & Jin, 1996). In China, Confucian thought (Confucianism) underpins contemporary culture. Thousands of years ago, in a divided China, Confucius travelled with his students around all the states to publicise and spread his philosophy and initiated Confucianism. Although Confucianism has passed through changes according to past dynasties over thousands of years, it has profoundly affected Chinese ideology, politics, and cultural values throughout the ages (Chen, 1990; Li, 2011). In Chinese society, the modernisation programme launched in the late last century and subsequent transformations in economic, political, and social

domains have effectuated significant changes, such as rapid economic growth, technological development, and cultural exchanges with other parts of the world. It has been argued that these abrupt and substantial changes in Chinese society in recent decades may have affected the values of Confucianism (Rao & Chan, 2010; Ryan & Slethaug, 2010). However, some critical aspects of Confucianism regarding social interactions and interpersonal relationships have remained: for example, the collectivist culture (McNaught, 2012).

As one of the most predominant labels of Confucian Heritage Culture (CHC), collectivism refers to the cultural value that prioritises group values and cohesiveness within group members (Hofstede et al., 2005; Triandis, 1995, 1996). The term "group" can be diffusely concerned with societal units ranging from the nuclear family to an ethnic group (Triandis, 1995). According to Hofstede (2013), the individualism index of CHC countries (e.g., China) has been much lower than other individualistic countries. On average, the individualism scores (out of 100) of China, Hong Kong, Singapore, and Taiwan were 20, 25, 20, and 17, respectively: significantly lower than their Western counterparts (Hofstede, 2013). In a collectivist CHC society, a family tends to emphasise a collective goal, a shared interest in the family, and a cooperative context in which every member should take responsibilities to obey commitments (Triandis, 1995; Hofstede, 2001). As the collective-orientated culture is so deeply rooted in China, an anti-individualism ideology is often exhibited in Chinese society whereby highlighting and striving for personal gains over group interests is judged as morally inappropriate. Liu (2006) argued that the embedded educational principle in Chinese society does not encourage students to promote individuality; instead, it focuses on making individuals comprehend that they belong to a collective group and must follow

the norms and conform to collective values. In China, the family as a basic unit builds up the society, but not the individual; children are required to learn to think in terms of “us” rather than “me” (Zhang, 2003). As a result, Chinese children growing up in a collectivist society tend to identify themselves as part of the group.

This collectivist culture seems to reflect the influence of Confucianism in its emphasis on the virtues of collaboration and harmony in a group setting. Trompenaars (1993) further highlighted that a high level of collectivism has brought about Chinese people’s strong sense of belonging to the group and an inclination towards cooperative group work. Cultures with norms foregrounding group harmony and social obligation (e.g., Chinese culture) are often regarded as promoting prosocial behaviours and values (Eisenberg et al., 2006). Hence, it can be assumed that individuals growing up in a collectivist society often tend to form prosocial SVOs and cooperative learning preferences.

Collectivist culture is also reflected in Chinese education. The Chinese education system highlights collective consciousness and places value on coordination, collective moral learning, and group support, requiring students to cultivate the virtue of concern for the collective. In a Chinese classroom, collectivism is usually the core encouraged value, whereas individualism is often disparaged. As early as pre-school, children are instructed to keep in mind that collective or group interests are much more important than personal interests. In 2016, the latest Chinese school curriculum and textbook regarding moral education were released. The idea of “co-living and co-being with between human beings” was highlighted (*Teacher’s Guidebook for Grade 1*, 2016, p. 7). “Co-being with”, as the principal value throughout the moral education

curriculum, refers to the intention to guide and direct Chinese children to develop an awareness of people co-habiting and co-existing with each other both interdependently and mutually (*Teacher's Guidebook for Grade 1*, 2016, p. 5). Children are taught to understand interpersonal relationships employing mutual understanding, dialoguing, helping, and sharing. With such an emphasis on collectivism, it can be inferred that Chinese students would be more likely to prefer a cooperative learning approach. The following section will explore another perspective.

2.3 Chinese Learning Environment

For many years, Chinese pedagogy has been recognised worldwide for its highly competitive environment and the pressures of examinations (Biggs, 1991; Ho, 1991; Zhao & Selman, 2014). Since the 1980s, Chinese policymakers have attempted to reform the country's education, primarily by introducing "competition mechanisms" into the secondary education system and developing teachers' and students' competition consciousness (The Central Committee of the Communist Party of China, 1985). Agelasto (1998) argued that while competition is highly valued, cooperative learning could rarely be seen in the Chinese educational environment. The significantly competitive learning environment in China may enhance students' sense of competition. In addition to ranking students and schools, cities and provinces in China are classified based on the average Gaokao (the Chinese national higher education entrance examination) scores of local students. Within this context, in pursuit of competing for education resources, Chinese schools consistently endeavour to outperform other schools in average student exam results. For example, schools may require their students to stay in classes for long hours while finishing a large amount

of homework and frequently taking mock exams. Results from four countries' surveys (China, the United States, Japan, and the Republic of Korea) indicate that high school students in China have the longest school day (Xinhua, 2009), and this time becomes longer when students move to higher grades. Chinese high school students generally spend more than 12 hours every weekday studying.

Furthermore, Chinese parents' expectations and concerns regarding their offspring's future are other factors that promote a competitive learning environment (Zhao & Selman, 2014). Chinese parents are faced with investment in additional academic books and after-school tutorials for their children in the intensively competitive education and labour context. Especially for people who reside in China's impoverished countryside, succeeding at the Gaokao and entering universities seems to be the only opportunity to leave the rural area and pursue upward social mobility (Annunziata et al., 2006).

To sum up, in contrast to the cultural pull towards collectivism, the nature of the competitive education system in China provides students with more competitive learning experiences. Therefore, its collectivist culture and competitive education environment oppositely influence students' learning preferences and SVOs.

2.4 The UK's Individualist Culture

Unlike China, the UK exhibits characteristics of an individualist culture. As a cultural ideal in many Western countries, individualism is often considered the dominant and most common way of understanding what it means to be a person (Adeponle et al.,

2012; Orange, 2010). At the core of individualism is the assumption that each individual is independent and focuses on their own requirements rather than those of the collective group. Hofstede (2001) observed that in an individualistic society, individuals are expected to care solely for themselves and their immediate families. In such a social context, people usually emphasise personal autonomy and achievement. From a global perspective, the central element of individualism is the idea of the "personal", encompassing personal accomplishment, personal control, and personal uniqueness (Hsu, 1983; Markus & Kitayama, 1991; Triandis, 1995). According to Hofstede (2013), the UK's individualism score was 89 (out of 100) on average, which indicates a high level of individualism. The Individual Index results indicate that the UK is ranked third out of 76 countries in terms of individualism inclinations.

In a society embedded in an individualistic culture, children are expected and encouraged to form and articulate their own thoughts and wants (Hofstede, 2001; Hofstede et al., 2005; Triandis, 1995). The emphasis on individualism means that children learn to think in terms of "me". With a preference for individualism, the UK highlights the importance of sensitivity to each individual in its society. Therefore, based on existing theory, UK students growing up in an individualistic society may favour cooperative learning preferences less since they are more likely to care about their personal accomplishments and individual needs and interests.

2.5 The UK's Learning Environment

Influenced by individualism, British education highlights personal needs and uniqueness. The National Curriculum emphasises students' autonomy, the holistic

development of children, and building up students' confidence in their ability to learn and work independently (Department for Education, 2013). Students in the UK are frequently taught to make independent decisions. However, it can be argued that the UK's learning environment appears less competitive and more cooperative, especially compared to the Chinese learning environment. In the PISA (Programme for International Student Assessment) 2000, the UK had high scores in cooperative learning skills, indicating a strong preference for cooperative learning among students (OECD, 2001). According to an OECD report (2014), the number of teachers in England reporting the use of "small-group" techniques was higher than other countries with high-performing education systems (as defined by PISA results), including China, Japan, Korea, Singapore, Finland, and Estonia. Around 60% of teachers in England reflected that they applied the small-group teaching method frequently or in almost every lesson to allow students to work cooperatively to solve a problem, compared to 40% on average in countries with high-performing education systems (OECD, 2014). Moreover, this frequent use of small-group methods was equally reported by teachers from different types of schools in the UK. Since cooperative learning methods (i.e., small-group techniques) are ubiquitous in the UK classroom, it is not surprising that the mean score of UK students' collaborative problem solving (which refers to students' performance in collaborative problem solving and attitudes towards collaboration) is much higher than that of Chinese students (OECD, 2017).

In summary, one may assume that the UK's individualistic culture would influence British students to have competitive or individualistic learning preferences. The UK's cooperative learning environment may, however, contribute to developing students' cooperative learning preferences.

2.6 Summary

This chapter has illustrated the research context by shedding light on the cultural and educational background of China and the UK. The Chinese cultural context of collectivism and its competitive learning environment have been highlighted and discussed in relation to learning preferences and SVOs. Meanwhile, the individualistic culture embedded in UK society and its relatively cooperative learning environment is differently related to learning preferences and SVOs. Therefore, one can infer that tensions between the different pulls of I–C culture and education systems would contradictorily influence individuals' learning preferences and SVOs. Nonetheless, there is no conclusive picture in the literature of which of these elements is most important. To conclude, this chapter has provided essential background information regarding China and the UK to better understand the different characteristics of these countries' cultures and education systems.

Chapter 3 Literature Review

3.1 Overview

This chapter will discuss the theories and research evidence related to the present study. This chapter consists of five parts. The first reviews the literature on learning preferences, and relevant theories and findings from previous studies are introduced and explored. The second part concerns the literature review of SVO, focusing on its historical development and related hypotheses and research findings. The third part justifies and discusses the relationship between SVO and learning preferences and outlines SVO's mediating role. The fourth and fifth parts of the review examine the influence of culture and previous learning environments on learning preferences and SVO, respectively. This chapter ends with the research questions and hypotheses for the present research.

3.2 Learning Preference

3.2.1 The Concept of Learning Preference

That each student may prefer learning under certain conditions (Larkin & Budny, 2005; Negahi et al., 2012) is suggested to be determined by internal characteristics and learning experiences during schooling (Hall, 2005). The concept of learning preferences was developed as early as the 1970s. In the literature, learning preference is categorised from two mainstream perspectives. The first is related to individuals' characteristic patterns of preferences on extracting, processing, and retrieving

information and resources (e.g., Dunn & Milgram, 1993; Mayer & Massa, 2003). This research, however, focuses on the second perspective, which pertains to learners' social interactions with their peers. More specifically, social interactions in an educational context refer to student–student interactions, which can be defined as cooperative, individualistic, and competitive (Johnson & Johnson, 1991).

Cooperative interactions entail students learning together and cooperating to achieve learning goals and mutual benefits. In contrast, competitive interactions occur when students compete to achieve higher grades and outperform their peers. In this sense, students learn through competition with others, and only a small group of them will eventually attain the highest grades. Individualistic interactions, meanwhile, exist when students are required to focus on their personal success and disregard the failure or success of others. Students in this environment are expected to learn independently and endeavour to achieve their learning goals individualistically (Deutsch, 1962; Johnson & Johnson, 1991).

Thus, three learning preferences – cooperative, competitive, and individualistic – have been identified that can be mapped directly onto these types of student–student social interactions in learning settings (Owens & Straton, 1980; Johnson & Johnson, 1989, 2005). Learners with cooperative preferences may enjoy learning collaboratively with their peers through sharing knowledge, skills, and opinions (Grasha, 1990, 2002). Johnson and Johnson (1989) argued that cooperative learners tend to achieve both their own and others' learning goals. Cooperative learners often break the required learning tasks down into different facets, which can then be assigned to each member of a learning group (Murphy & Alexander, 2007). Unlike competitive learners, who

focus more on self-achievement, learners with cooperative learning preferences emphasise group achievements (Slavin, 1983, 1995, 2014; Johnson & Johnson, 1989, 2005). Cooperative learning is believed to encourage students' exchange of knowledge and skills, which can, in turn, promote students' interdependence and individual accountability (Slavin, 1983, 1995, 2014; Johnson & Johnson, 2005).

Conversely, students with a competitive learning preference tend to compete with their peers to achieve learning goals (Grasha, 2002). Johnson and Johnson (1989, 2005) noted that a competitive learning preference is associated with maximising one's own learning outcomes relative to others. Competitive students often treat learning as a competition whereby there will be only a few winners and a large number of losers. They tend to see the whole class as learning to achieve the same goal, but they strive to achieve this goal first and in a more outstanding manner than their peers (Montgomery & Groat, 1998). Competitive learning is considered beneficial in its motivational aspect: students are often stimulated to put substantial effort into education (Burguillo, 2010). However, it has been argued that competitive learning produces considerable pressures and leads to students' low self-esteem (for example, when students fail in exams), cheating behaviours, and aggression in school (Johnson & Johnson, 1989, 2005).

Lastly, learners with an individualistic learning preference tend to avoid interacting with their peers in learning settings. Individualistic learners show little interest in and no willingness to participate in class activities (Grasha, 2002). They prefer to focus on their own learning outcomes, with little regard for others (Johnson & Johnson, 1989, 2005). These students also tend to implement individualistic personal learning

strategies and learning plans to achieve their learning goals.

Owens and Barnes (1982) further illuminated that one's preference for a learning mode is considered a fundamental part of what they described as a "mental set", according to which learners perceive the learning situation differently. In this regard, students with different learning preferences may vary in their perceptions of the same learning environment. Therefore, preferences towards these three learning modes (also known as "goal structures" in some studies, e.g., Johnson et al., 1985) are widely thought to play an essential role in the effectiveness of learning (e.g., Frame, 1994). Specifically, when students learn in a classroom structured by their preferred learning approach, the success of their learning process will be facilitated. Thus, learning preferences can influence how individuals perceive learning situations and the appropriate actions they should take to interact with peers.

3.2.2 Social Interdependence Theory

The concept of learning preference has its theoretical roots in social interdependence theory. This theory was developed by Deutsch (1949a, 1962), building upon Lewin's work. Lewin (1935) proposed that individual behaviours could be conceptualised as a simultaneous interrelated function of people and the social situation. Lewin (1935, 1948) further suggested that interdependence among members constitutes a group's essence, determining the group's dynamism and integrity. Hence, when a group member or subgroup changes, the state of any other member or subgroup will change in turn. Deutsch (1949a, 1962) extended Lewin's theory by introducing social interdependence theory, which posits that social interdependence occurs when individuals' outcomes are interdependently influenced by the actions of others.

Notably, social interdependence should not be confused with social dependence or social independence. Social dependence refers to a situation whereby one person's goal achievement is influenced by another person's actions, but not vice versa. Social independence involves a case where a person's goal achievement is not related to another person's actions, and the reverse is still valid.

Based on social interdependence theory, two types of social interdependence have been identified: positive and negative (Deutsch, 1949a, 1962; Johnson & Johnson, 1989, 2005). Positive interdependence (e.g., cooperation) occurs when a positive relationship exists among individuals' goal attainments. In this situation, individuals believe that they will achieve their goals if, and only if, other cooperatively related individuals achieve their goals. In other words, individuals are reciprocally linked with others: their work benefits others, and others' work benefits them. Consequently, one cannot succeed until other group members do (and vice versa). They will either "sink or swim" as a whole group. In contrast, negative interdependence (e.g., competition) exists when there is a negative correlation among individuals' goal attainments. In this context, an individual will believe that only if other competitively related individuals fail to achieve their goals can they fulfil their own goals. If there is no correlation amongst individuals' goal achievements, no interdependence (i.e., individualistic attitudes or efforts) will exist. In this situation, people recognise that their own goal realisation has no relationship with others' goal attainment. Social interdependence theory explains how people's cooperative, competitive, or individualistic behaviours are interdependently influenced by situational factors (e.g., interdependent others' behaviours), which paves the way for further understanding regarding individuals' differences in their cooperative, competitive, or individualistic intentions.

3.2.3 Social Interdependence Theory and Learning Preference

Social interdependence theory has been applied in the field of educational psychology to explain learning preferences concerning social interactions. According to Johnson and Johnson (1989) and Rusbult and Van Lange (1996), above and beyond humans' biological makeup, the formation of individuals' preferences is built on experiences within situations, including social interdependence. Social interdependence exists in certain conditions in which individuals' outcomes are affected by their own and others' behaviours (Johnson & Johnson, 1989). Individuals may experience different histories of social interdependence. One's learning preference is, therefore, at least partly shaped and sharpened by one's experiences of interacting with others in interdependent situations over time (Choi et al., 2011).

Based on social interdependence theory, Johnson and Johnson (1991, 2005) argued that a cooperative learning situation entails positive interdependence. Students believe that they will attain their learning goals if, and only if, other peers achieve their learning goals at the same time. Positive interdependence has been suggested to lead to promotive interaction (e.g., people facilitate and encourage each other to complete group tasks in order to achieve group goals). Thus, students in a cooperative learning situation are encouraged to cooperate to achieve group success (e.g., group assignments). When positive interdependence exists in a learning environment (i.e., a cooperative learning environment), students tend to work together in small groups to maximise all the group members' learning outcomes mutually. For instance, students may share their materials and support each other.

By contrast, a competitive learning environment is related to a negative interdependence among learning goals. More specifically, students in such classrooms believe that their learning goals will be attained if, and only if, other classmates fail to meet their goals; as such, they may seek to come at the top of the class (Johnson & Johnson, 1991, 2005). Students may endeavour to outperform their peers in terms of exam results. It has been argued that negative interdependence can result in oppositional interactions whereby students may obstruct and discourage each other from striving to finish tasks purely to achieve their personal goals.

In an individualistic learning situation, students' learning goals are likely to be independent. Students in this context tend to consider their learning goals as having no relationship to one other (Johnson & Johnson, 1991, 2005). Namely, what they have done to achieve their learning goals is unrelated to other students' efforts and work, and personal achievements (e.g., exam scores) will not be ranked or compared with those of other classmates.

Previous studies have suggested that a cooperative learning environment (where positive interdependence exists) could contribute to a cooperative learning preference. Meanwhile, having more experiences of competitive learning (where negative interdependence occurs) could enhance a learning preference for a competitive learning approach, and experiencing more individualistic learning (where no interdependence is available) could promote learners' tendency towards an individualistic learning approach (Johnson & Johnson, 1989, 2005). For example, based on a sample of 217 students (aged 7–11), Choi et al. (2011) found that cooperative learning experiences were positively related to cooperative learning preferences and

negatively associated with individualistic learning preferences. Nevertheless, there lacks empirical evidence demonstrating the influence of competitive and individualistic learning experiences on different learning preferences. The present research may be one of the first studies to examine these relationships.

How and why people make cooperative, competitive, or individualistic decisions in different interdependent situations has been explored by using economic theories of decision making, specifically through the use of SVO, which is explored in the following section.

3.3 SVO

3.3.1 The Concept of SVO

Research into SVO has a long history. In social psychology, the concept of SVO was instituted to understand the social phenomenon with respect to why people may anonymously donate to unknown others who suffer from misfortune and why some may even rush into a burning house to save those whom they have never met. Such behaviours, with an orientation towards benefiting others, can be further defined as prosocial behaviours (Eisenberg et al., 2006). Influenced by game theory and social interdependence theory, SVO was developed to make sense of the basic cognitive and motivational processes associated with cooperativeness and competitiveness. It has been widely defined as people's stable traits, reflecting preferences for specific patterns of outcomes for oneself and others (McClintock, 1978; Messick & McClintock, 1968; Smeesters et al., 2003; Van Lange et al., 1997). It is believed that SVO can affect individuals' cooperative, competitive, and individualistic decisions and actions in

interdependent situations (Kollock, 1998; McClintock & Van Avermaet, 1982). The implication of SVO on behaviour is concerned with individual differences of self-regarding versus other-regarding preferences (Van Lange, 2000; Van Lange et al., 2007).

Although various SVOs have been distinguished in previous research, the present study focuses on two of the most widely researched: proself and prosocial (Smeesters et al., 2003; Bogaert et al., 2008). The proself orientation encompasses two subtypes: individualistic and competitive. Scholars have suggested that people with an individualistic orientation are motivated to maximise their own outcomes or payoffs. They may help or harm others if such actions lead to a positive effect for themselves because they only care about their personal goals (Kelley & Thibaut, 1978). Competitors, who consider disagreements as win–lose situations, often tend to widen the gap of gains between the self and others (Knight & Dubro, 1984; Van Lange, 1999). Conversely, individuals with a prosocial value orientation are identified as natural co-operators who seek win–win situations to disagreements. They tend to maximise joint payoffs (prosociality), minimise the difference between payoffs (inequality aversion), or maximise others' outcomes and remain indifferent to their own (altruism; Smeeters et al., 2003; Van Lange et al., 2007; Murphy & Ackermann, 2014).

The argument that SVO is a stable personality trait can be substantiated from two different approaches. Firstly, it is widely believed that differences in SVOs can be partly traced back to individual differences within biological constitutions (e.g., Bogaert et al., 2008; Smeesters et al., 2003; Van Lange et al., 1997). It has been argued that some rudimentary form of SVO could occur in a child's early life as a part of their temperament (Van Lange et al., 1997). For example, findings of the study by Knight

and Chao (1991) showed that children aged between 8 and 12 could recognise and predict the SVOs of their friends and siblings. In addition to the possible influence of biological constitutions, SVO may be continually shaped by the social interactions experienced during a lifetime. Van Lange et al. (1997) found that large families (especially in terms of the number of siblings) were positively associated with the development of prosocial value orientations. The authors explained that children from larger families tended to have more opportunities to confront conflicts in interests. Thus, a growing child could have more experiences of solving disputes and perceiving mutual benefits from prosocial behaviours. Secondly, as a fundamental trait, SVO is demonstrated to have temporal stability. Previous studies have found that when measuring SVO at two different times, the results of test–retest correlations ranged from moderate to sufficiently high (Van Lange, 2000). The existing literature and empirical evidence seem to suggest, therefore, that people fundamentally differ in SVOs.

3.3.2 Theoretical Background and the Development of the SVO Concept

This section introduces and discusses SVO's theoretical background and provides a brief review of its developmental history. It is crucial to understand the theoretical foundation and relevant ideas concerning SVO to bridge the gap between SVO and its potential application to an educational context (i.e., linking SVO to learning preference).

Social Dilemmas and Game Theory. A substantial body of research has examined the basic cognitive and motivational processes associated with cooperativeness and competitiveness through the lens of SVO. Early studies focused primarily on issues of individuals' potentials to provoke competition or cooperation in social dilemmas. A social dilemma can be understood as a situation whereby people are faced with a conflicting choice between self-interest and a common interest with another person. In this case, one's outcomes (or payoffs) are determined not only by their own decisions but also by others' choices. There are fundamental differences in how individuals approach social dilemmas (Van Lange et al., 2013), and one's SVO is a personal trait that reflects how people resolve these social dilemmas (Messick & McClintock, 1968; Van Lange, 1999).

Social dilemmas have drawn considerable attention in the field of social science. Economists and psychologists are keen to understand people's cooperative or selfish behaviours and decisions in response to social dilemmas. Among the various theoretical approaches to studying this issue, game theory, which has been widely applied in the literature, could be the most influential. Game theory can be understood as "a branch of mathematics devoted to the logic of decision making in social interactions" (Colman, 2013, p. 3). Particularly in economics and mathematics fields, the term "game theory" refers to the study of conflicts and cooperation among rational decision makers (Myerson, 1991). According to Colman (2013), game theory can apply to any social interaction with the following properties: (a) two or more decision makers (named players) exist; (b) each player has two or more strategies (i.e., ways of acting), by which the outcome of the interaction is determined by all players' choices of strategies; (c) each player can only partly control the outcome; (d) numerical payoffs

reflecting players' preferences for the outcomes can be assigned to all players for all outcomes. Thus, in the terminology of game theory, a game is an abstract mathematical invention that represents any social interactions with these properties.

When investigating interdependent decision makers' actions, research has focused on exploring the theoretical relationship between intrapersonal processes and different situations. Experimental studies have provided a consolidated and formal approach to identifying conditions in relation to interdependent decision making, enabling homologous predictions of rational actions under certain given contexts to be conducted (Von Neumann & Morgenstern, 1944; Luce & Raiffa, 1989). These early theories and studies established the foundation for the development of SVO. In the following sections, relatively more recent influential theories regarding SVO are reviewed to further illuminate the concept and its growth.

Motivational Theory. Based on social interdependence theory (Deutsch, 1949a, 1962), the terminology of social interdependence was later developed by Messick and McClintock (1968) in their motivational theory of choice behaviour. This theory aims to understand why people may not solely strive to maximise their own interests but rather consider another partner's interest in a given interdependent situation. In this theory, three types of motivational orientations identified by Deutsch (1962) are operationalised as different goals that concern maximising collective interest (cooperative orientation), maximising relative gain (competitive orientation), and maximising own absolute interest (individualistic orientation). Messick and McClintock (1968) demonstrated that, in formal games, optional terms were likely to determine others with regard to the three different motivational orientations. Their study applied

games to observe people's choices and assess individuals' predominant motivational orientations. Moreover, they considered SVO a situationally determined variable rather than a stable personality traits, because they found that very small experimental manipulations (nudges, e.g., labelling the other interdependent player as "opponent" or "partner") could lead to large SVO effects in games. Messick and McClintock's seminal work paved the way for the development of SVO theory, as it provided both a conceptualised foundation of SVO and a measure for assessing these orientations.

Goal/Expectation Theory. SVO is also linked to people's generalised expectations of others' actions, including the expectations of what someone is like and how interdependent others might behave in a given situation. Based on social interdependence theory and motivational theory, Pruitt and Kimmel (1977) introduced goal/expectation theory, which assumes that, in various experimental games, individuals' decision-making processes largely rely on individual beliefs and motives concerning the expected actions of their interactive counterparts. This theory argues that people's cooperation in a given situation can be determined by two conditions: they have a cooperative goal, and they expect others to cooperate.

Consequently, there is a close relationship between SVO and goal/expectation theory. The latter theory emphasises the individual, inner-world expectation for cooperation with others and expectations for others' cooperative actions. In a study by Smeesters et al. (2003), findings showed that, compared to "proselfs", "prosocials" held more expectations regarding their partners' cooperative behaviours. It has been proposed that different expectations of others' actions ultimately result in distinct choices of

behaviours. Thus, taken together, individuals' inclinations may interact with the context under certain situations of social dilemmas, which can affect choices regarding cooperation or competition.

Interdependence Theory. The concept of SVO also has its theoretical roots in Kelley and Thibaut's (1978) interdependence theory. This theory assumes that people have individual differences in the goals they pursue; as such, they tend to perceive a given situation differently. Interdependence theory creates a wide range of concepts related to the transformation of motivation. It is postulated that influenced by individuals' subjective experience, transforming a given interdependent situation into the subjective interdependent situation would eventually direct people's interdependent behaviours.

In interdependence theory, individuals make decisions by using a strategy when undergoing an interdependent situation, represented as a psychological transformation from a so-called given matrix to an effective matrix. The concept of the "given matrix" represents preferences based on immediate self-interest, whereas the effective matrix involves preferences based on broader considerations, such as a strong concern for others' interests or expectations for long-term mutual benefit (Kelley & Thibaut, 1978; Van Lange & Joireman, 2008). Therefore, psychological transformations in interdependence theory are concerned with the shift in motivation from a given preference to an effective preference. These are frequently conceptualised as decision rules (or strategies) that people adopt in different interdependent situations (Van Lange et al., 2007). People tend to follow the rules (or use strategies) that reflect different concerns regarding both one's own qualities and

their partners' qualities, such as cooperation: maximising joint outcomes; competition: maximising the relative difference between outcomes for oneself and their partner in favour of oneself; and individualistic rules: maximising one's own outcomes and being indifferent to the partner's outcomes (Kelley & Thibaut, 1978). The interdependent theory provides an essential theoretical underpinning for the concept of SVO, which contributes to a deeper understanding of SVO and enriches the theoretical framework in related fields.

Based on the literature and theories discussed above, SVO is widely recognised as a stable personality trait that can reflect cooperative, competitive, and individualistic intentions and actions in experimental games and, more importantly, in real-life contexts.

3.3.3 Empirical Studies Examining Effects of SVO on Behaviour

Several studies have addressed SVO from different perspectives, and many findings have demonstrated the concept of SVO and its assumed effects (i.e., predicting people's cooperative, competitive, or individualistic intentions and actions). For example, it has been found that, compared to proselfs, who tend to use individualistic strategies, prosocials show more willingness to cooperate with others since they judge an interdependent situation based on collective rationality (De Bruin & Van Lange, 1999; Utz et al., 2004). People with prosocial value orientations generally express concern towards the goals of others (e.g., negotiators) and tend to employ a cooperative strategy in a situation involving social interactions to improve both their own and others' outcomes (Nauta et al., 2002; De Dreu & Van Lange, 1995). In contrast, people with proself value orientations (i.e., competitive or individualistic value

orientations) strive to achieve their own goals and/or dominate over others and frequently judge behaviours based on their potency (Liebrand et al., 1986).

Applying the theoretical framework built on interdependence theory to analyse SVO, Van Lange et al. (1997) postulated that individual differences related to SVO are partly rooted in differences in social interactions associated with relevant experiences from childhood to emerging adulthood. One's SVO can then be further developed and shaped by the relevant experiences of different social interaction patterns from adulthood to old age (Van Lange et al., 1997). Based on the empirical evidence from their study, the research findings are thought to coincide with the previous analysis, hence supporting their hypotheses.

More recently, studies have investigated how interpersonal closeness mediates the automatic expression of SVO (Cornelissen et al., 2011), the impact of SVO on the selection of accepting or rejecting an unfair offer (Karagonlar & Kuhlman, 2013), and how emotional expressivity could be a relatively reliable cooperation signal (Schug et al., 2010).

In summary, the studies reviewed above demonstrate the concept of SVO and its possible effects in predicting cooperative, competitive, and individualistic decisions and behaviours. However, few studies have considered the predictive power of SVO in education settings. The following section will further explain and discuss the potential relationship between SVO and learning preference.

3.4 SVO and Learning Preference

As discussed above, SVO has long been recognised as a fundamental difference of people related to individual willingness towards cooperation, competition, or individualistic actions and expectations of others' behaviours in interdependent situations (Bogaert et al., 2008). Nevertheless, scant research has focused on SVO in an educational context. The present research may be one of the first studies to link SVO to cooperative, competitive, and individualistic preferences in learning settings.

It is suggested that people with a prosocial value orientation seem to have a default willingness to cooperate with others. They are regarded as sensitive to information signalling trustworthiness and cooperation; this could, in turn, substantiate the expectation that their cooperative or prosocial behaviours (e.g., helping or sharing) are reciprocated (Au & Kwong, 2004; Bogaert et al., 2008; Murphy & Ackermann, 2014). Therefore, it could be inferred that, in learning contexts, encouraging students to engage in cooperation and learning through a mutually beneficial approach and promoting inter-student trustworthiness via cooperative learning seems to suit the inherent willingness of prosocials (Johnson & Johnson, 1989, 2005). Hence, as natural co-operators in general situations, learners with prosocial value orientations prefer cooperative learning.

In contrast, proselfs (with competitive or individualistic value orientations), who have a default behaviour of striving for self-interest, might need explicit incentives and stimuli to link with their goal of maximising their own interest or having a relative advantage over others (Au & Kwong, 2004; Bogaert et al., 2008; Murphy & Ackermann,

2014). As such, competitive learning meets the inherent goals of people with competitive value orientations since it provides a platform to stimulate students to compete with each other in pursuit of a relatively higher grade or rank (Johnson & Johnson, 1989, 2005). In this sense, taking most general situations as "win or lose", those identified with a competitive value orientation may prefer a competitive learning approach. As far as individualistic learning is concerned, students must learn independently and for themselves, which seems to suit the need of those with individualistic value orientations (i.e., maximising their own gains while ignoring others' situations). Therefore, learners with individualistic value orientations, who care only about their personal achievement, prefer individualistic learning.

Furthermore, the situation of cooperative learning could be regarded as a real-life example of social dilemmas. If no group members contribute to the group learning tasks in a cooperative learning group, the whole group will not achieve their learning goals, but "free-riding" on other members' behaviours may be personally more profitable. Hence, prosocials are inclined to show a greater willingness to engage in cooperative learning. In this sense, students with prosocial value orientations might prefer cooperative learning and tend to contribute to the collective work, whereas proselfs (with individualistic or competitive value orientations) may not favour engaging in group work.

In the literature, SVOs and learning preferences have been frequently thought of as influenced and shaped by contextual factors, such as cultural and educational environments. This notion is explored in the following section.

3.5 Influence of I–C Culture on Learning Preference and SVO

3.5.1 I–C Culture

Culture can be understood as a system involving shared norms, values, and beliefs (Rapport & Overing, 2002), which can shape how people experience and interact with physical and social contexts (Triandis, 2001). Culture can provide a shared template for people in the same society, enabling them to hold a similar understanding of reality, behave in a socially acceptable way, and interact with others based on common assumptions (Rohner, 1984). From a sociocultural perspective, culture may affect the development of an individual's inner psychological processes and external behaviours (Goldberg, 2001). Children's development and maturation are embedded within the culture in which they are born and that their family inhabits. Scholars have suggested that societal culture affects and determines people's cooperative behaviours within a cultural group (Boone & Witteloostuijin, 1999; Gelfand & Christakopoulou, 1999; Wade-Benzoni et al., 2002).

Previous research examining how students from different countries may differ in their learning preferences and SVOs have tended to focus on culture at a national level (e.g., the United States vs East Asian countries) rather than at the individual level (e.g., treating the nationality as a variable to indicate cultural differences). While these studies have added value to the literature, it is crucial to recognise that individuals with the same cultural background may vary in their cultural identity, likely due to their different personality traits or contextual influences (Wagner, 1995; Leung & Cohen, 2011). As such, one must consider the influential role that an individual's cultural identity or tendency might play on learning preferences.

At the individual level, I–C can be understood as one's personal belief concerning their individualistic or collectivist cultural identity. For example, although China is considered to be dominated by collectivist culture, Chinese students have shown a strong tendency towards individualism (e.g., Garrott, 1995). This finding highlights the danger of overgeneralising students' I–C cultural identity. Indeed, individuals' beliefs and behaviours may not be entirely determined by culture. Even people from the same society may adhere to cultural values differently (Oyserman et al., 2002). Therefore, the present research investigates students' cultural identity on an individual level rather than a national level in order to more accurately and comprehensively understand how culture may affect their learning preference.

3.5.2 I–C Culture and Learning Preference

Learners from different cultures may hold different understandings of learning and vary in their preferred learning approaches. Since they are affected by culture-related values, dispositions, and beliefs, it stands to reason that learners with distinct cultural backgrounds may vary in their attitudes, feelings, and ideas about different learning approaches. Fraser (1981) argued that students' different perceptions of learning modes and classroom across different cultural contexts could be related to embedded cultural characteristics.

Collectivism can be understood as seeing the self as an aspect (or a part) of a collective. Hence, in a collectivist society emphasising group value and the collective good, individuals' personal goals should be subordinate to the collective goals (Triandis, 1996). Nguyen et al. (2006) observed that the mentality of a collectivist culture

supports cooperative behaviours in the group, promotes group success, and guarantees each member's group performance. These collectivist cultures' characteristics appear to resonate with the core element of cooperative learning, whereby students strive for group learning achievements. Conversely, an individualistic culture foregrounds personal gains, individual value, independence, and individual autonomy. In an individualistic society, the meaning of self is concerned with independence and freedom from collectives; individual needs and personal goals are prioritised over collective goals and group values (Triandis, 1996). These characteristics of individualism reject the principle at the centre of cooperative learning: that the learning goals of each student can only be achieved if all group members achieve their learning goals.

At the national level, scholars have proposed that people from a collectivist society (e.g., China) may have a different learning preference to those from a society dominated by individualism (e.g., the UK) due to the distinctively different characteristics of individualistic and collectivist cultures (Hofstede, 2001). Learners from a collectivist society tend to prefer group working and have better performance in groups since collectivism highlights interpersonal relationships and group values (Biggs, 1991; Triandis, 2001; Eisenberg et al., 1990; Hofstede et al., 2005). In contrast, learners from an individualist society tend to disfavour cooperative learning and prefer competitive or individualistic learning since individualism focuses on individual values, self-autonomy, and independence (Biggs, 1991; Triandis, 2001; Eisenberg et al., 1990; Hofstede et al., 2005).

Studies addressing the relationship between I–C culture and learning preference have shown mixed results. Some empirical studies have indicated that Chinese learners from different age groups generally hold positive attitudes and an appreciation towards cooperative learning (e.g., Gong & Liu, 2018). However, previous research indicated that Asian students preferred working alone rather than working in a group, whereas the U.S. students (i.e., non-Asian students) favoured working in groups (Hall, 2017). Moreover, in Liu's (2005) study, Chinese college students preferred individualistic learning rather than group learning. Based on a sample of 274 U.S. college students and 237 students from Chinese universities, Zhan et al. (2013) examined the assumption that different cultures influence students' learning preferences (referred to as "learning style" in their study). Due to the differing cultures of their respective countries, the authors hypothesised that American students would prefer individualistic and competitive learning, whereas Chinese students were assumed to prefer cooperative learning. Although their findings showed that compared to their U.S. counterparts, Chinese students scored higher on cooperative learning preferences, they also reported a higher level of individualistic learning preferences. The researchers posited that these unexpected results might be related to environmental factors: the past experiences of these two participant groups may have affected their learning preferences. They further explained that the Chinese competitive learning environment and society could have contributed to developing students' competitive and individualistic characteristics rather than a collectivist orientation.

To sum up, based on these mixed empirical findings, I–C cultural differences at the national level may not fully explain the relationship between I–C culture and learning preferences. As Wagner (1995) noted, the variations in the individual identity of I–C cultures affect personal tendencies towards cooperating or competing in group situations. The present research may be one of the first studies to address this issue at the individual level and facilitate a better understanding of the relationship between I–C culture and learning preferences.

3.5.3 The Influence of I–C Culture on SVO

It has been widely recognised that SVO development is affected by culture and socialisation (Au & Kwong, 2004; Eisenberg et al., 2006). Within different cultures, people differ in their delivery of social norms regarding fairness and sharing behaviours to their offspring (Smetana, 1999).

Societal culture significantly determines people's cooperative behaviours within the cultural group (Boone & Witteloostuijin, 1999; Gelfand & Christakopoulou, 1999; Wade-Benzoni et al., 2002). In collectivist societies such as China, people regard responsiveness to others' needs as an embedded commitment; however, in Western societies, such as the UK, individuals tend to balance the weight of prosocial concerns and freedom of individual choice (Miller, 1994). It has been found that Chinese parents and educators tend to socialise children into prosocial values and behaviours more than those from many Western countries (Zhu et al., 2010). Eisenberg et al. (2006) argued that collectivist cultures such as that of China, wherein social obligation, interpersonal responsibility, family interdependence, and group harmony are highlighted, appeared to contribute to the development of prosocial behaviours.

Scholars have proposed that children who grow up in societies with more collective norms and group-orientated cultures tend to behave prosocially and express more other-orientated values (i.e., prosocial value orientation) compared to those from more individualistically orientated cultures (Hofstede, 2001; Triandis, 1995, 2001; Eisenberg et al., 1990). In a collectivist culture, people consider group membership as more valuable than individuality. Each group member is obligated to subordinate his or her needs to the group's values (Triandis, 2001; Hofstede, 2001). Studies have highlighted the influence of I–C culture on people's SVO development, although, as noted previously, they have focused on cultural influences at the national level. More importantly, it can be inferred from the literature that people with a solid collectivist cultural identity tend to cultivate prosocial value orientations. In contrast, individual value, personal gain, independence, and self-autonomy are often emphasised in an individualistic society, and individual needs and interests are prioritised over collective interests (Triandis, 2001; Hofstede, 2001; Hofstede et al., 2005). Thus, people with an individualistic cultural identity behave as such and exhibit more self-orientated values.

Empirical studies investigating the relationship between I–C culture and SVO from a national level have had mixed results. In many early studies, findings suggested that children who grow up in societies characterised by high levels of collectivist culture exhibit less competitiveness and greater cooperation than those who were raised in a society with an individualistic culture (e.g., Knight et al., 1981; Madsen & Lancy, 1981; McClintock, 1974). Stewart and McBride-Chang (2000) found that Western children shared marginally less than Asian peers, which was partly related to different parenting styles (i.e., self-orientated vs other-orientated). Rao and Stewart (1999) also illustrated

that Asian participants expressed higher rates than their U.S. counterparts in terms of sharing. However, in some relatively more recent studies, findings indicate similar rates of prosocial behaviours (Yağmurlu & Sanson, 2009) or no differences in prosocial reactions (Kärtner et al., 2010) between individualistic and collectivist countries. In a recent study, Lampridis and Papastylianou (2017) explored the relationship between people's perceptions and attitudes towards different prosocial behaviours (e.g., altruism) and individual cultural tendencies from the I–C perspective. Their findings suggest that collectivist cultural tendencies are positively related to prosocial attitudes.

These empirical findings indicate that the influence of I–C culture at the national level may not be related to individuals' SVO in a relatively straightforward way. Wagner (1995) argued that variations in an individual's I–C cultural identity affect personal tendencies towards cooperating or competing in group situations, signifying how fundamental differences between individualistic and collectivist cultures in constructs of how people define themselves and others can affect individuals' SVOs. In other words, individuals' I–C cultural identity might not always be consistent with their country's national culture. The present research takes a novel approach to further investigate the relationship between culture and SVO by studying individual cultural identity (i.e., I–C culture from an individual level).

A review of the literature indicates that I–C culture can shape people's SVOs and learning preference. Furthermore, as discussed earlier, SVO, as a relatively "stable personality trait" that can reflect people's cooperative, competitive, or individualistic intentions and actions (e.g., Bogaert et al., 2008), might be assumed to predict people's cooperative, competitive, or individualistic choices in learning settings (i.e.,

learning preferences). Therefore, the present research hypothesises that I–C culture may be related to learning preferences through individuals' SVOs.

3.6 Influence of Learning Experiences on Learning Preference and SVO

Social psychologists have long recognised that individuals fundamentally differ in their SVOs and that these differences influence cooperative behaviours in interdependent situations (Bogaert et al., 2008). It is argued that despite the potential impact of biological and genetic differences, people's SVOs can be shaped by the nature of social interactions they have experienced during their lives (Van Lange et al., 1997; Smeesters et al., 2003). Many researchers have posited that the development of SVO could be affected by socialisation (Au & Kwong, 2004; Eisenberg et al., 2006). Within certain cultures, school, as the primary place where children learn how to socialise and mature, is pivotal for developing learning preferences and SVOs. Indeed, students' inherent value systems regarding cooperative, competitive, and individualistic efforts are learned in their daily lives in schools (Johnson & Johnson, 1999). Theoretically, people who frequently experience cooperative behaviours and prosocial transformations from others tend to develop a prosocial orientation. Conversely, people tend to foster a competitive or individualistic value orientation when they have repeated experiences with others who seek self-interests or relative advantages over others (Van Lange et al., 1997; Bogaert et al., 2008).

In a cooperative learning environment, students are encouraged to cooperate with other peers to achieve a collective learning goal. Students engaging in cooperative learning consider learning outcomes beneficial to both themselves and their peers and

believe that all group members will sink or swim together. Hence, students tend to obtain a mutual benefit: everyone in the class can benefit from each other's efforts. They may recognise that their performance is mutually dependent on their cooperation with others. Kochanska (2002) argued that, in a cooperative situation, mutual responsiveness and positive interpersonal influences could play a pivotal role in people's prosocial development. Previous studies have found that students who frequently studied cooperatively tended to make more cooperative and prosocial decisions than those who studied competitively (Ryan & Wheeler, 1977). Meanwhile, Johnson and Johnson (1999) reported that applying a cooperative approach to teaching students can contribute to students' prosocial values and behaviours.

In a competitive learning environment, students are required to compete with others for higher grades. They learn against their peers to achieve the learning goals that only a few of them can obtain. In this situation, students may strive to work faster and more accurately to outperform their classmates (Johnson & Johnson, 1991, 2005). Competitive learning is considered to strengthen students' competitiveness and competitive orientation (Johnson & Johnson, 1991, 1999). By contrast, in an individualistic learning environment, students are required to learn independently to achieve learning goals unrelated to other classmates. In this context, students focus solely on their own interests and efforts and disregard others' success or failure in achieving learning outcomes (Johnson & Johnson, 1991, 2005). Consequently, students' individualistic inclinations could be developed from individualistic learning experiences (Johnson & Johnson, 1999).

Evidence suggests that cooperative learning contributes to developing mutual concern and interpersonal trust among students, promoting students' prosocial value orientations and cooperative learning preferences (Slavin, 1983; Johnson et al., 1976; Johnson & Johnson, 2005). Based on a sample of 217 students (aged 7–11) from the United States, Choi et al. (2011) showed that cooperative learning experiences in a school were significantly positively related to students' cooperative learning preferences and tendencies towards prosocial behaviours. Another study addressing Chinese students found that, likely because of the collectivist cultural background, 9- and 11-year-old Chinese children identified as prosocial (Li et al., 2013). These findings support the assumption of different cultural influences on SVOs. However, their study also indicated a sharp decrease in prosocial value orientations and increased competitive value orientations in 14-year-old children compared to 11-year-old children. In addition, compared with children from the United States, more competitors were found among the 14-year-old children in China. In their paper, the authors attributed these findings to the highly competitive school environment in China (Li et al., 2013). Notably, at the age of 14, most Chinese students start to encounter the pressures of the Gaokao. From then on, their surrounding learning environment becomes increasingly competitive. Thus, it seems that CHC's collectivism and competitive learning environment may theoretically have a contradictory influence on SVO development.

To sum up, different learning experiences (i.e., engaging in different learning environments) may influence people's SVOs and learning preference. As discussed earlier, since one's SVO may predict their learning preferences, it can therefore be assumed that SVOs may mediate the influence of learning experiences on learning

preferences.

3.7 Research Questions and Hypotheses

One can infer from the literature review above that I–C culture and previous learning experiences may differently influence students' learning preferences and SVOs. Although few studies have linked SVO to learning preference, as has been discussed above, there may be a theoretical relationship between these two constructs. The present research may be one of the first studies to address this issue. Furthermore, previous relevant studies (e.g., Knight et al., 1981; Li et al., 2013) focused primarily on Eastern Asian countries (as representatives of collectivist culture) and the United States (as a representative of individualistic culture), while the present work investigates the relationship between culture, learning preference, and SVO based on Chinese and British samples. In particular, it is believed that both the UK and the United States share characteristics of an individualistic culture (e.g., Hofstede, 2001); however, the substantial differences between these two countries' education systems may differently affect students' learning preferences. Thus, it is worth investigating the influence of individualism on learning preference and SVO based on a sample from another individualistic country (i.e., the UK) in this research.

A hypothesised framework (see Figure 1, p. 12) was proposed to initially investigate the relationships between I–C culture and previous learning experiences in relation to Chinese and British students' SVOs and learning preferences. In this research, the research questions are:

1. What are the relationships between previous learning experiences, cultural identity (collectivism vs individualism), SVO, and learning preferences?
2. What do people believe can affect their formation of learning preferences?

Three overarching research questions, each generating specific hypotheses, were posited as follows.

1. Previous learning experiences will be related to SVO and learning preference.

- Cooperative learning experiences will be positively related to a prosocial value orientation and a cooperative learning preference. Cooperative learning experiences will, however, be negatively associated with proself (competitive or individualistic) value orientations and competitive and individualistic learning preferences.
- Competitive learning experiences will be positively related to a competitive value orientation and a competitive learning preference and negatively related to a prosocial value orientation and a cooperative learning preference.
- Individualistic learning experiences will be positively related to an individualistic value orientation and an individualistic learning preference and negatively related to a prosocial value orientation and a cooperative learning preference.

2. Participants' I–C cultural identity will be related to SVO and learning preference.

- A collectivist cultural identity will be positively associated with a prosocial value orientation and a cooperative learning preference and negatively related to

proself (competitive or individualistic) value orientations and competitive and individualistic learning preferences.

- An individualistic cultural identity will be positively associated with proself (competitive or individualistic) value orientations and competitive and individualistic learning preferences and negatively related to a prosocial value orientation and a cooperative learning preference.

3. SVO will be related to learning preference.

- A prosocial value orientation will be positively related to a cooperative learning preference.
- A competitive value orientation will be positively associated with a competitive learning preference.
- An individualistic value orientation will be positively related to an individualistic learning preference.

Chapter 4 Methodology

4.1 Overview

This chapter addresses the philosophical underpinnings of the present research, provides an overview of the research design and method, presents the findings of a pilot study, and discusses relevant ethical issues.

4.2 Philosophical Underpinnings of the Present Study

Philosophical assumptions play a pivotal role in shaping the research process and the manner of inquiry. As a researcher, the knowledge I attempt to understand is closer to being objective rather than subjective, and the way I investigated the research topic is built on postpositivism.

From a postpositivist perspective, knowledge exists in reality. It is about a "Certain level of objectivity rather than absolute objectivity" and "Seeks to approximate the truth" (Crotty, 1998, p. 29). According to Guba and Lincoln (1994), postpositivists' understanding is a dualist epistemology regarding objectivity and subjectivity. The authors argued that from a postpositivist standpoint, complete objectivity could hardly be achieved, as reality is only "someone's" (i.e., a subjective receiver's) reality. Postpositivism is often linked to quantitative approaches. Researchers tend to make knowledge claims based on (a) cause-and-effect thinking or determinism; (b) focusing on selected variables to interrelate; (c) employing measures or observations to

investigate variables; and (d) testing and examining theories that could be continually refined (Slife & Williams, 1995).

Consistent with postpositivist research characteristics, the present research aims to make predictions, explanations, and generalisations. The overall research process aligned with my postpositivist stance: I worked from the "top" down, from existing theories to forming hypotheses to collecting data to augment (and contradict) the theories. The present research predominantly relied on applying psychological measures to investigate and understand the psychological mechanism while attempting to generalise to a larger population by employing statistical tools. Meanwhile, the second goal of the research was to understand how people think about what may affect learning preferences. In the current study, interview data in the form of participants' spoken words were collected; the data were considered a reasonable approximation of their actual thoughts and beliefs. This qualitative research approach resonates with the subjectivity of postpositivist research: to achieve a "thick" understanding of the research subject (Jensen, 1989).

Therefore, using a mixed-methods approach, the present research embraces the epistemology of postpositivism: it aims not only to recognise and understand the meaning of human experiences but also to explore specific temporal and contextual impacts of the experiences (Lincoln & Denzin, 2000). It is suggested that one of the most important goals of understanding a social problem via a postpositivist study is to comprehend the phenomenon in depth (Jensen, 1989).

This research was embedded in postpositivism epistemology and conducted using a QUAN+qual mixed method: that is, quantitative methods and qualitative methods were sequentially applied. Qualitative approaches were used after the quantitative process was finished to explore the possible relationships identified by the quantitative data in more detail (Matthews & Ross, 2010).

4.3 Research Methods and Design

A quantitative-dominant, QUAN+qual mixed-methods design that stressed a "quantitative, postpositivist view of the research process" (Johnson et al., 2007, p. 124) alongside a qualitative approach was applied to achieve the research aim. A QUAN+qual design was chosen for the present research because (a) through combining both quantitative and qualitative methods, this design can concurrently use a large number of participants to make generalisations and a small group of participants to gain in-depth understandings; and (b) since more than one research method has been used, a mixed-methods design can contribute to cross-validating and corroborating findings in a single study (Frechtling & Sharp, 1997; Greene, 2006, 2008). In this research, the quantitative approach was expected to examine theoretically existing relationships among participants' previous learning experiences, cultural identity regarding I–C, SVO, and learning preference. The qualitative approach also contributes to a deeper understanding of those relationships.

In Studies 1 and 2, an online survey was employed to quantitatively examine the relationship between culture, learning experiences, SVO, and learning preferences amongst undergraduate students in China and the UK. The independent variables (or

extraneous variables) were previous learning experiences from primary to high school and participants' I–C cultural identity. The dependent variables (or endogenous variables) were Chinese and British undergraduates' SVOs (as mediation) and learning preferences. Study 1 examined the relationships among Chinese participants' previous learning experiences, I–C cultural identity, SVO, and learning preferences. Study 2 replicated the first study with a sample of UK participants.

In Study 3, interviews were conducted in the UK and China to explore participants' beliefs about what affects their formation of learning preferences regarding social interaction, based on their personal experiences. The vignette technique was used to elicit people's beliefs, attitudes, and opinions from their responses to stories within specific scenarios and contexts (Barter & Renold, 1999). Through the vignette technique, participants' responses and comments on the described classroom contexts enabled them to reflect their learning preference in detail. Vignettes also offered the chance to investigate and compare English and Chinese participants' opinions and attitudes on the same texts (although the use of language was different), depicting three different classroom environments.

Following the use of vignettes, interviews used open-ended questions to allow for a deeper understanding of participants' experiences of previous learning environments and their learning preferences. Semi-structured interviews were used because open-ended questions are flexible and tend to place less restraint on respondents' answers; additionally, by using open-ended questions, researchers can choose to go deeper in the interview or to investigate possible misunderstandings (Lincoln & Guba, 1985; Kerlinger, 1970; Patton, 1980).

In addition to the use of QUAN+qual mixed methods, a comparative research design was applied to examine the hypothetical model in two contexts (i.e., the UK and China), each with contrasting emphases between culture and education systems regarding cooperation and competition. Using a quantitative approach, I measured relevant personal characteristics (i.e., cultural identity, SVO, and learning preference) and classified them based on the literature. Such classifications captured how the investigated phenomena vary among different countries and educational systems (Van Vught et al., 2005). Notably, as has been discussed in Chapter 3, the embedded culture (e.g., collectivism or individualism) and education environment (e.g., competitive or cooperative) of China and the UK are suggested to have different (and even contradictory) influences on students' learning preferences and SVOs within each country. Thus, to explore these theoretically contradictory relationships within each country, the present research examined the hypothesised model in China and the UK across two studies (Studies 1 and 2), rather than in a single study (e.g., using the country as a moderator) since using the nation as a moderator might not sensitively reflect the nuanced contradictory influence of culture and education environment on learning preference and SVO.

4.4 Pilot Study and Results

Prior to the central data collection process, a pilot study was conducted to verify the proposed research procedure and usability of instruments. Fifteen undergraduate students participated in the pilot study voluntarily; 15 completed the questionnaire (13 Chinese, two British), and three (all Chinese) took part in the interview.

Recruitment procedures were mainly based on convenience (i.e., the researcher's social network). Care was taken to ensure that participants' ages and nationalities were as similar as possible to the targeted population to pilot the questionnaire. Comments and feedback from the participants were collected through social networking tools (WeChat and Messenger). Generally, all participants were satisfied with the length of the online questionnaire. Most participants reported that the time they spent on the questionnaire was around 10–12 minutes, except for one participant, who spent 20 minutes. The online questionnaire was ultimately clear and comprehensible, and no participant reported that they felt any difficulty in responding. Participants noted that instructions were easy to understand, and items of each measure were not ambiguous. The pilot questionnaire was in English; as such, some items (e.g., statements written in English) might have been unconsciously misunderstood by the Chinese participants (13 out of 15 in the pilot study). Thus, in the formal study, an online questionnaire was developed in Mandarin for the Chinese participants. Participants reflected that the interview process was satisfactory and that interview questions were easy to follow.

4.5 Ethics

In the present research, the general ethical process followed the guidance of the British Educational Research Association (BERA, 2011). The ethics form of this research is included in the Appendix. At the beginning of the online survey, there was a detailed introduction containing the research aims and explicit guidance. All participants were informed about their rights to withdraw or not complete any particular items in the questionnaire during the research process without giving a reason. For Studies 1 and

2, participants were informed that they could withdraw at any time prior to the anonymisation of the data. When the data had been anonymised, participants were no longer able to withdraw. The quantitative data were anonymised by separating participants' responses from their contact information, and this procedure was completed within three days of their submission. A summary of participants' profiles with their contact information was retained to decide whom to approach for Study 3. For Study 3, participants were allowed to withdraw at any time within 14 days after completing the interview. After 14 days, all the qualitative data were anonymised by coding and renaming participants' personal information; hence, they could no longer withdraw. All the data collected in the study were kept strictly anonymous and confidential based on the guidance of the Data Protection Act (BERA, 2011).

The issue of non-traceability is worth noting (Coomber, 1997; Frick et al., 1999) because participants were asked to fill in their email addresses so that the researcher could contact those who may wish to take part in Study 3. If respondents wanted to remain anonymous, however, their email addresses may have exposed them. Therefore, including a personal email address was optional. While this measure may have reduced the potential population approaching Study 3, it is nonetheless an essential principle to follow. Participants' contact information (i.e., their email addresses) in the online questionnaire was only used for the lottery and recruitment for the qualitative study. Moreover, this information was stored separately from participants' responses to the questionnaire. In all three studies of this research, participants were number coded or renamed after collecting data. Participants' names were not used in the reporting of the research or in data storage. Both quantitative and qualitative data were held in confidence and used only for the purposes agreed

upon with the participants. No identifiable information was disclosed.

Furthermore, the personal safety of the researcher and all participants who took part in the face-to-face interview was strictly considered and controlled. It was necessary to ensure that all the interviews were processed in a safe environment (e.g., university campus). In the qualitative study, since the vignette technique was used, the textual scenarios had the potential to recall some negative memories for some participants. Thus, on the one hand, textual scenarios were designed to depict a virtual situation with neutral language to avoid triggering any real-life experiences of participants as much as possible. On the other hand, if participants felt uncomfortable with the textual scenarios, the researcher stopped the interview and tried to put them at ease.

Chapter 5 Study 1: Investigation of the Relationship Between Previous Learning Experiences, I–C Cultural Identity, SVO, and Learning Preference in China

5.1 Overview

This chapter details the aims, methods, and results for Study 1, beginning with the purposes and hypotheses. The research methods section describes the sampling, survey instrument, data collection procedure, and data analysis. The study's results are then reported and analysed in detail.

5.2 Aim and Hypotheses

Study 1 aimed to examine the relationships between I–C cultural identity, previous learning experiences, SVO, and learning preferences in China.

The hypotheses are as follows.

1. Previous learning experiences will be related to SVO and learning preference.

1.1. Cooperative learning experiences will be positively related to a prosocial value orientation and a cooperative learning preference but will be negatively related to proself (competitive or individualistic) value orientations and competitive and individualistic learning preferences.

1.2. Competitive learning experiences will be positively related to a competitive value orientation and a competitive learning preference and negatively related to a prosocial value orientation and a cooperative learning preference.

1.3. Individualistic learning experiences will be positively related to an individualistic value orientation and an individualistic learning preference and negatively related to a prosocial value orientation and a cooperative learning preference.

2. Participants' I–C cultural identity will be related to SVO and learning preference.

- A collectivist cultural identity will be positively associated with a prosocial value orientation and a cooperative learning preference and negatively associated with proself (competitive or individualistic) value orientations and competitive and individualistic learning preference.
- An individualistic cultural identity will be positively associated with proself (competitive or individualistic) value orientation and competitive and individualistic learning preferences and negatively related to a prosocial value orientation and a cooperative learning preference.

3. SVO will be related to learning preference.

- A prosocial value orientation will be positively related to a cooperative learning preference.
- A competitive value orientation will be positively associated with a competitive learning preference.
- An individualistic value orientation will be positively related to an individualistic learning preference.

5.3 Methods

5.3.1 Sample

The final sample of Study 1 comprised 260 Chinese undergraduates (74 male and 186 female participants) from a university located in East China. Most undergraduates majored in social science, explaining the high percentage of female participants (71.5%) in Study 1. The participants' ages ranged from 18 to 23, with a mean of 20.8 (*SD* = .133).

Participants were Chinese undergraduates studying at a Chinese university. There were several reasons for choosing this sample. Firstly, according to Van Lange et al. (1997), undergraduate students' (18–23) SVOs seem to be less influenced by chronological age than those of postgraduate students (generally older than 23 years). Secondly, recruiting domestic undergraduates could also help minimise the influence of cross-cultural living experiences that could have shaped their learning preferences differently. The minimum sample size was calculated as 200 to achieve adequate statistical power to observe the data's relationships. This assumed the analysis process of structural equation modelling based on maximum likelihood estimation (Jackson, 2003). Thus, convenience sampling (i.e., selecting a sample that meets the research requirements based on its convenience of access) was used for participant recruitment (Matthews & Ross, 2010, p. 164) to achieve the expected sample size under limited time and resources.

5.3.2 Materials

An online survey was used to collect data regarding participants' demographic information (age, gender, and nationality), previous learning experiences, I–C cultural identity, SVO, and learning preferences.

Previous Learning Experiences. Previous learning experiences refer to students' cooperative, competitive, and individualistic learning experiences from primary to high school classrooms. In other words, students' perceptions of their previous learning environments were assessed in this study. In the literature, various questionnaires have been developed to investigate students' perceptions of classroom environments, such as the Classroom Environment Scale (Moos & Trickett, 1987), the My Class Inventory (Sink & Spencer, 2005), and the What is Happening in this Class questionnaire (WIHIC; Fraser, 1998). However, most assess students' preferences for cooperation/competition in the classroom rather than students' experiences.

The current study focuses on students' previous cooperative, competitive, and individualistic learning experiences. Therefore, the present study combined three subscales from existing relevant measures: the cooperation subscale from the WIHIC questionnaire (Fraser, 1998), the competitiveness subscale from the Learning Environment Inventory (LEI; Fraser et al., 1982), and the "Emphasis on individualistic work" subscale from Tapola and Niemivirta's (2008) study.

Previous Cooperative Learning Experiences. The cooperation subscale in the WIHIC questionnaire (see Appendix, Questionnaire, items 4–11) includes eight items that reflect eight cooperative classroom practices. Using a 5-point Likert scale, participants

can indicate their classroom practice perceptions by making choices ranging from 1 (*almost never*) to 5 (*almost always*). This scale's instruction was rephrased in the present study to clarify to participants that they were looking at previous school experiences from primary to high school. Typical sample items revised from this scale were "I got along with other students when doing assignment work" or "l learned from other students in the class". In the present study, the Cronbach's alpha (α) of the previous cooperative learning experiences scale was .88, indicating good internal consistency reliability.

This subscale from the WIHIC questionnaire was chosen to investigate participants' previous cooperative learning experiences because it was designed to examine how often students perceive a classroom practice, reflecting their experiences rather than preference. The WIHIC has been widely studied and is believed to be a valid measure of classroom psychosocial environments cross-nationally (Dorman, 2003). Previous studies have shown good internal consistency reliability using this measure. For example, based on the results of a study with a sample of 3,980 students from Australian, British, and Canadian high schools, the Cronbach's alpha of the cooperation subscale was .76 (Dorman, 2003). In a study focusing on 763 Arabic college students, the Cronbach's alpha of the cooperation subscale was .85 (MacLeod & Fraser, 2010). Finally, Aldridge et al.'s (1999) study, with a sample of 1,879 Taiwanese high school students, suggested the cooperation subscale's high reliability (α = .92).

Previous Competitive Learning Experiences. Items indicating competitiveness from the LEI (Fraser et al., 1982) were used to assess participants' previous competitive learning experiences. Using a 5-point Likert scale, participants indicate their

perceptions of competitive classroom practices by making choices ranging from 1 (*almost never*) to 5 (*almost always*). In the present study, LEI items depicting classroom competitiveness were revisited to reflect respondents' previous learning experiences. Sample items were "Most students wanted their work to be better than their friends' work" or "Students felt left out unless they competed with their classmates". In the present study, the competitive learning experience scale indicated an acceptable internal consistency reliability ($\alpha = .68$).

LEI was developed as a part of the Harvard Project Physics research and has been critically reviewed and validated since the late 1960s (Fraser et al., 1982; Walberg & Anderson, 1968; Anderson & Walberg, 1974). The original version of LEI was a paper-based instrument with a 4-point Likert scale design including 105 items that measure students' perceptions of their classroom environment from 15 psychological dimensions: apathy, cliquishness, cohesiveness, competitiveness, democracy, difficulty, disorganisation, diversity, favouritism, formality, friction, goal direction, material environment, satisfaction, and speed. Items regarding competitiveness were used to reflect the extent to which the class emphasised students' competition. One of the major advantages of the LEI is that it can assess students' perception of their classroom for prolonged periods. The LEI has been used extensively to measure the classroom environment in prior research. According to Anderson and Walberg (1974), based on a sample of 1,048 individual high school students, the Cronbach's alphas for the LEI ranged from .54 to .85 with a mean of .72. Cronbach's alpha of the competitiveness scale was .78, which indicated an acceptable to good internal consistency reliability.

Previous Individualistic Learning Experiences. The "Emphasis on individualistic work" scale (Tapola & Niemivirta, 2008) was used in the current study to examine participants' individualistic learning experiences. This scale was built to explore students' classroom perceptions and preferences based on a 5-point Likert scale response format. Participants indicate their previous individualistic classroom practices by making choices ranging from 1 (*almost never*) to 5 (*almost always*). Sample items are "Students often worked alone with their tasks" or "Students were encouraged to work independently during the lessons". In this study, the previous individualistic learning experience scale (including seven items) suggested acceptable internal consistency reliability ($\alpha = .67$).

I–C Cultural Identity. To identify participants' I–C cultural identity, Wagner's (1995) measure was used in this study. This measure consists of five aspects, including 20 items (see Appendix, Questionnaire, items 12–31): Stand Alone (five items, items 12–16), Win Above All (five items, items 17–21), Group Preference (three items, items 22–24), Sacrifice in Group (four items, items 25–28), and Individual Thinking (three items, items 29–31). Participants use a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Participants' responses to items 12–21, 23, and 29–31 are designed to be reverse-coded so that a high level of collectivism is indicated by high ratings (i.e., 7s). In the present study, the Cronbach's alpha for each dimension of cultural identity regarding the I–C scale were as follows: Stand Alone (five items) = .80; Win Above All (five items) = .84; Group Preference (three items) = .58; Sacrifice in Group (four items) = .84; and Individual Thinking (three items) = .85. Overall, results indicated good internal reliability; however, the dimension of group preference was unsatisfactory.

This 20-item scale was mainly constructed and developed from items that appeared in previous popular questionnaires (e.g., Wagner & Moch, 1986; Triandis et al., 1988; Erez & Earley, 1987). Previous studies using this measure showed acceptable internal consistency reliability. For example, in the study conducted by Hwang et al. (2003) based on a sample of undergraduate business students from the United States (*n* = 253), Hong Kong (*n* = 266), and Singapore (*n* = 131), the Cronbach's alphas of the I–C measure were: Stand Alone = .70; Win Above All = .73; Group Preference = .83; Sacrifice in Group = .79; and Individual Thinking = .74.

SVO Slider Measure. Participants' SVOs were examined using the "SVO slider measure" (Murphy et al., 2011). The SVO slider measure provides a series of distribution choices for a person and then asks for the most preferable decision to identify an individual's SVO from a wide range of joint allocations of payoffs. This measure contains six primary items and nine secondary items. All 15 items have the same general form. Each item in the measure is designed to be a resource allocation selection over a continuum of joint payoffs with elaborate illuminations. The primary SVO slider items (see Appendix Questionnaire, "The six primary items of SVO slider measure") were derived from the six lines that repletely interconnect four points pertaining to SVOs, which refer to altruistic, prosocial, individualistic, and competitive types.

Below are two sample items of the SVO slider measure. In the measure, the participants are making a decision about allocating resources (e.g., money) between themselves and another partner (someone the participants do not know).

Example 1

In the first example, a specific choice of joint payoff allocation of "you receive 100; the other receives 50" refers to a choice to maximise personal gains, suggesting an individualistic value orientation. In contrast, a joint payoff allocation of "you receive 85; the other receives 15" represents a choice of maximising the relative difference between one's own and one's partner's gains in favour of self-interest, which suggests a competitive value orientation.

Example 2

In the second example, a joint payoff allocation of "you receive 85; the other receives 85" represents a choice of maximising joint gains, which indicates a prosocial value orientation. Conversely, a joint payoff allocation of "you receive 100; the other receives 50" reflects a choice of maximising the relative difference between one's own and one's partner's outcome, suggesting a competitive value orientation.

Followed by the six primary items, nine secondary items in the SVO slider measure (see Appendix, p. 176) aim to distinguish two subtypes of prosocial value orientation: joint maximisation and inequality aversion. Responses to the SVO slider measure can be comprehensively evaluated, and it can yield an integrated ranking of different value

orientations.

Compared to other SVO measures (e.g., the Ring Measure, Liebrand, 1984; Triple-Dominance Measure, see Van Lange et al., 1997), it is suggested that this unique form of response format is highly sensitive to individual differences. In the SVO slider measure, individual scores are collected at the ratio level, which facilitates the model's parameterisation and assessment (Murphy et al., 2011). Taking all these advantages and benefits of applying an up-to-date SVO measure into account, then, the SVO slider measure was employed in this study.

Social Interdependence. The social interdependence scales (see Appendix, Questionnaire, items 32–53) designed by Johnson and Norem-Hebeisen (1979) were applied to examine participants' learning preference regarding social interactions. These self-report scales were built upon 7-point Likert scale and aimed to measure individuals' attitudes towards social interdependence (i.e., cooperative, competitive, and individualistic) between themselves and others in education settings. Hence, it is reasonable that these scales can reflect students' learning preferences since they emphasise students' preferences towards types of social interactions in learning. The scales consist of 22 items measuring three factors: cooperative interdependence, competitive interdependence, and individualistic interdependence. Specifically, seven items were developed in the cooperative interdependence scale to measure students' learning preference for cooperating with others and helping others learn. In this study, the Cronbach's alpha for the cooperative interdependence subscale (seven items) was .92, suggesting good internal consistency reliability. The competitive interdependence scale (including eight items) was designed to examine students'

perceptions of others regarding whether they want to perform better than their respondents. The Cronbach's alpha for the competitive interdependence subscale in the present study was .89, indicating good internal consistency reliability. The individualistic independence scale (seven items) was used to understand students' dislike towards working with others and their preference for learning or working alone. In this study, Cronbach's alpha for the individualistic interdependence subscale was .79, generally indicating satisfactory internal reliability.

With a sample of 152 undergraduate students in the United States, the research findings of Johnson and Norem-Hebeisen's study (1979) showed that Cronbach's alphas of the social interdependence scales ranged from .84 to .88, signifying high internal consistency reliability. The social interdependence scales have been widely applied in different age groups and research studies with various research interests. This measure was validated to examine individuals' learning preference (or predispositions in education settings), and thus it was selected to identify Chinese undergraduates' learning preferences in the present study.

5.3.3 Research Procedure

As participants were native Chinese speakers, the online survey was translated into the Chinese language. All the measures used in the present study were translated into Mandarin and further examined by other researchers who were familiar with both languages to augment the Chinese questionnaire. More specifically, each scale was translated into Mandarin by the researcher before being back-translated into English to ascertain the reliability of translation by another researcher who had proficiency in both Chinese and English. The reliability of the translation was generally satisfactory.

These scales used in Study 1 could be considered reliable to reflect Chinese participants' experiences and psychometric properties, because: 1) all measures are established and published in previous studies, and most (except the individualistic learning experiences scale) have been applied across various contexts including China and other Asian countries and have shown acceptable validity and reliability (for more details see *section 5.3.2 Materials*); 2) this procedure of translation with blind back-translation could provide an adequate safety measure.

The online survey was developed through a widely used Chinese online survey tool, "Wenjuanxing 问卷星". The security of this survey platform is high: based on the data available on its website, more than 30,000 enterprises and 90% of colleges and universities in China have become paying customers of the platform. Furthermore, a lottery system was employed in an online survey to provide incentives. On the information sheet, each participant was informed that everyone would get a chance to win a monetary reward (randomly selected by the computer) after they finished and successfully submitted the survey. Incentives thus followed the *random lottery incentive system*, a method of incentivising participants that avoids problems associated with other incentive schemes (Lee, 2008) and has been shown to elicit behaviour in line with true preferences (Cubitt et al., 1988; Starmer & Sugden, 1991). Participants were also informed that the financial incentive was dependent on their choices of payoff allocation tasks (i.e., the SVO slider measure) in the survey. However, the actual amount of money they had a chance to receive was about 100 yuan (approximately equal to £11), and it was available for five participants. At the end of the online survey, participants were asked to leave their email addresses to be contacted to receive the money. Participants who were drawn to receive the money

were then emailed for their online wallet numbers (e.g., Alipay and PayPal). Afterwards, all the rewards were sent to their online accounts three months after the data collection was finished.

In the formal study, participants were recruited through a Chinese university located in East China. Participants were given a link to complete the survey from their faculty staff. Through the secure online web link, participants accessed the online survey and consented to participate in the study. Participants could successfully submit and return the survey only if they had responded to all the items. When participants missed a question, they would be automatically reminded to fill it in before going to the next page of the online survey. In other words, participants could not submit the survey if they only partially completed the online questionnaire or skipped some questions. Therefore, there was no missing or incomplete data in this study. The duration for data collection in Study 1 was around one month.

5.3.4 Data Analysis

After the data were collected, they were downloaded into SPSS and R. Among the collected data, two participants' responses were excluded from the final analysed sample. One participant's age did not meet our sampling requirement (age = 46 years, which is over 23 years old); another's submitted responses included frequent extreme scores (diagnosed as outliers by the SPSS programme).

Structural equation modelling (SEM) was conducted by applying the R lavaan package to examine whether the hypothesised model could fit the data. Both significance and magnitudes of connections between the variables were evaluated in the SEM. Figure

1 (p. 12) shows a simplified version of the SEM model. An SEM framework assumes that (a) explanatory relationships exist among the latent variables; (b) independent variables are related to measurement with no errors; and (c) each latent variable is measured through single indicators (Raykov & Marcoulides, 2012). SEM provides a framework that examines the mediating effect of SVO and links the theoretically related constructs within a structured model. Thus, SEM was an appropriate technique to be applied in this study to examine the theoretically hypothesised relationships among previous learning experiences, I–C cultural identity, SVO, and learning preference. It was hypothesised that the path model has four exogenous variables and four endogenous variables. SVO was assumed to mediate the relationships between previous learning experiences, I–C cultural identity, and learning preferences (see Figure 1, p. 12).

5.4 Results of Study 1

5.4.1 Descriptive Analysis

The proposed model was analysed by SEM using R. Analyses focused on overall model fitness and significant test of each path. Table 1 shows the means, standard deviations, and the intercorrelations of the variables in the model.

Table 1.

Means of Variables and Intercorrelations of Previous Learning Experiences, Cultural Identity, SVO, and Learning Preference in Study 1

Variables	*M*	*SD*	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1. Cooperative learning experiences	3.75	.68	-						
2. Competitive learning experiences	3.28	.57	.22**	-					
3. Individualistic learning experiences	3.78	.55	.37**	.30**	-				
4. Cultural identity	3.90	.53	-.08	-.20**	-.29**	-			
5. Cooperative learning preference	5.28	.93	.66**	.23**	.34**	-0.15	-		
6. Competitive learning preference	4.76	1.01	.32**	.41**	.31**	-.44**	.42**	-	
7. Individualistic learning preference	3.89	.93	-.24**	.13*	.15*	-.55**	-.28**	.26**	-
8. SVO	31.52	9.42	-.07	-.12	-.03	.24**	.08	-.13*	-.22**

**. Correlation is significant at the 0.01 level (two-tailed).

*. Correlation is significant at the 0.05 level (two-tailed).

5.4.2 Test of Multidimensionality

Complete SEM was conducted to examine the relationship between previous learning experiences, I–C cultural identity, SVO, and learning preferences. A full SEM contains a measurement model and a path model (also known as the structural model). In terms of the measurement model, it is crucial to correctly understand whether the constructs of the model are unidimensional or multidimensional (Law et al., 1998). In the present study, most measures were unidimensional based on the existing literature except I–C cultural identity. Twenty items of the cultural identity measure

were originally demonstrated to belong to five factors (Wagner, 1995). However, it is unknown whether this measured construct (cultural identity) is unidimensional or multidimensional.

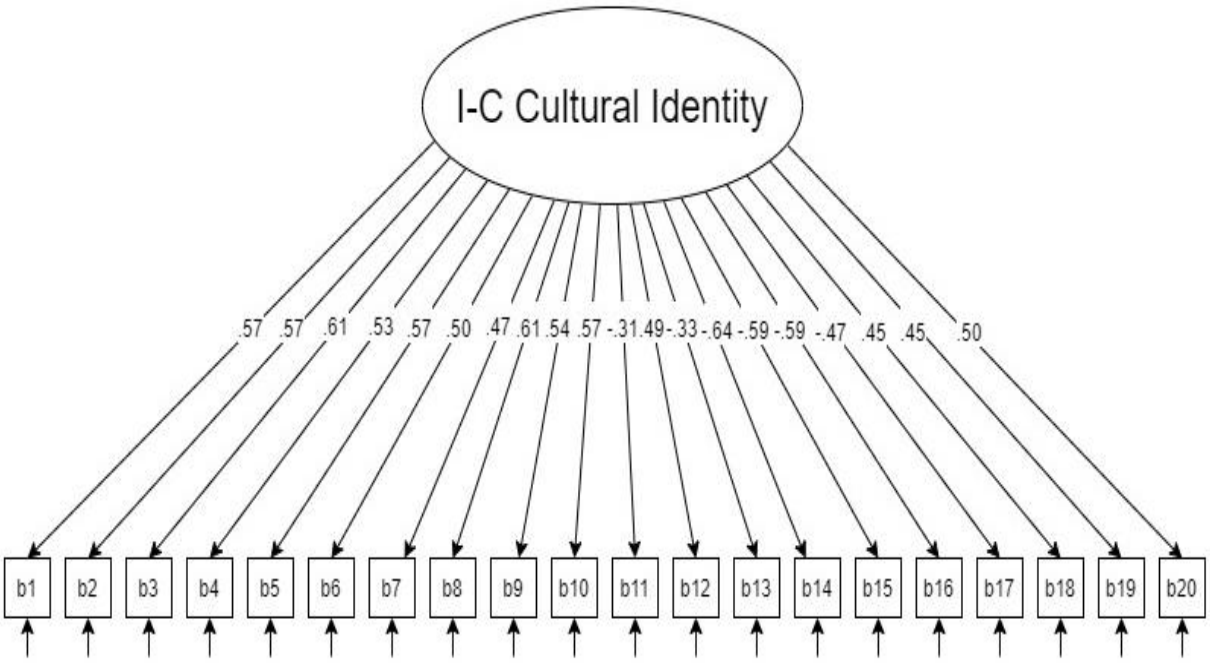
Hence, before conducting the full SEM, the dimensionality of the cultural identity measure was examined following two steps. In the first step, a unidimensional model comprising 20 items (see Figure 2) was analysed using confirmatory factor analysis (CFA). The results of model fit showed that the chi-square = 1547.05, df = 170, p < .01; comparative fit index (CFI) = .448; Tucker–Lewis Index (TLI) = .383; root mean square error of approximation (RMSEA) = .177. In most of the existing literature, an acceptable model fit can be indicated by a CFI > .90, a TLI > .90, an RMSEA < .10 and a standardised root mean square residual (SRMR) < .10 (Hu & Bentler, 1999; McDonald & Ho, 2002; Browne & Cudeck, 1992; MacCallum et al., 1996). Therefore, these results provided evidence of a poor model fit.

Subsequently, a multidimensional model representing first-order factors for each dimension of cultural identity was examined. Based on the theoretical structure developed by Wagner (1995), the 20 indicators indicated five freely correlated first-order factors (see Figure 3). The results showed that the second model's model fit indices were chi-square = 510.54, df = 160, p < .01; CFI = .86; TLI = .83; RMSEA = .092. After comparing the first model (the unidimensional model) and the second model (the multidimensional model), it could be further inferred that a multidimensional model consisting of five freely correlated first-order dimensions was superior to a unidimensional first-order factor model. The model fit of the second model was still not strictly satisfactory compared to the widely recommended model fit criteria.

However, since the measure had been established and published, and the results of each loading remained statistically significant, the second model was still applied in the full SEM without any further change or modification of the original items.

Figure 2.

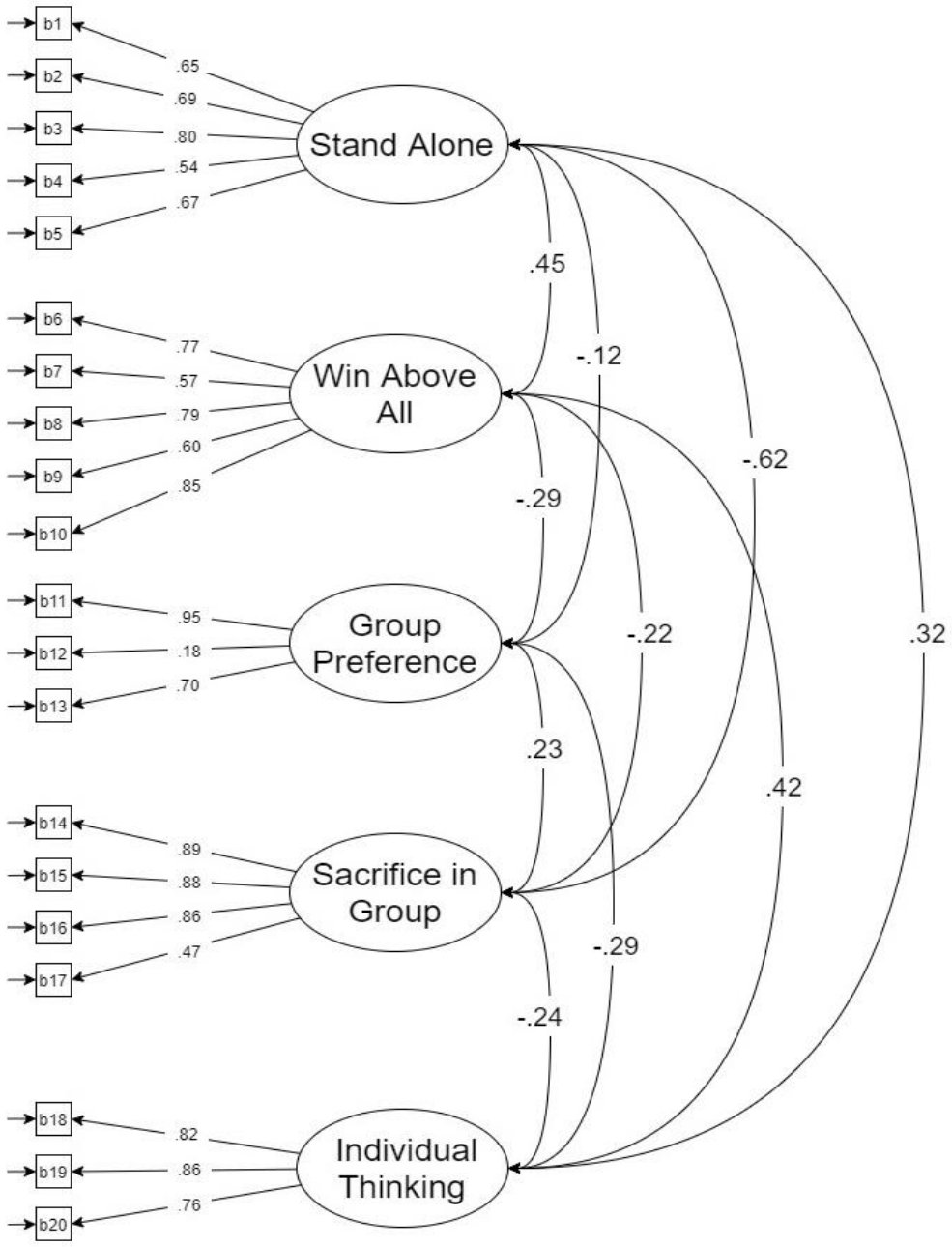
The Unidimensional CFA Model of I–C Cultural Identity in Study 1



Note. In this figure, b1 to b20 refer to 20 items.

Figure 3.

The Multidimensional CFA Model of I–C Cultural Identity in Study 1



Note. In this figure, Stand Alone, Win Above All, Group Preference, Sacrifice in Group, Individual Thinking are five factors of I–C cultural identity, and b1 to b20 refer to 20 items.

5.4.3 Test of Multivariate Normality

In the existing literature, SEM requires multivariate normality (MVN) assumption: if the data are multivariate, the SEM results will be more reliable (Kline, 2015). As such, the data's multivariate normality was first examined using Mardia's MVN test (Mardia, 1970) in R. The results showed that, for Study 1 data, its Mardia's multivariate skewness was 6.31, Chi-square value of the skewness was 273.28, $p < .01$; Mardia's multivariate kurtosis was 97.67, z value of the kurtosis was 11.26, $p = 0$; and Chi-square value of small sample skewness was 277.14, $p < .01$. According to Mardia (1970), both p-value of skewness and kurtosis statistics are suggested to be greater than .05 to meet multivariate normality. Therefore, results indicated that the data of Study 1 were not multivariate normal (see Figure 4 an MVN plot). Moreover, using the Shapiro–Wilk univariate normality test, results of the univariate analysis indicated that all the variables except cultural identity were not univariate normal (see Table 2). According to the multivariate and univariate test results and the plots, it was confirmed that the current data were not multivariate normal.

Figure 4.

Chi-Square Q–Q Plot of Results From Mardia's Multivariate Normality Test in Study 1

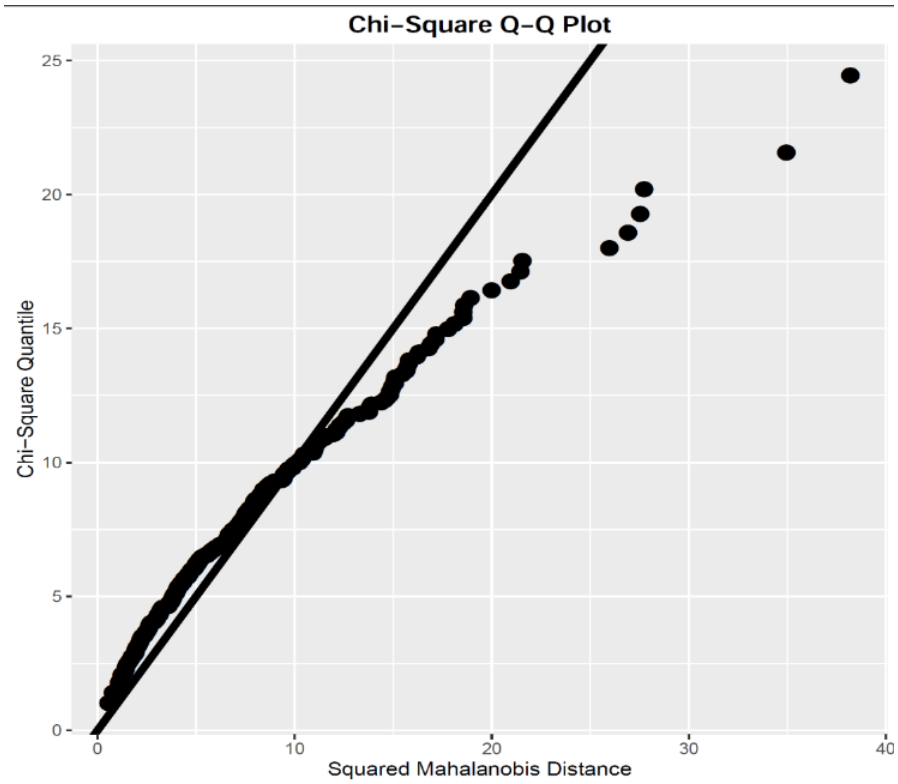


Table 2.

Results of Shapiro–Wilk's Univariate Normality Test in Study 1

Variable	Statistic	p-value	Normality
COEXP	0.97	<.01	NO
COMEXP	0.98	<.01	NO
INDXP	0.97	<.01	NO
Culture	0.99	.07	YES
COLP	0.98	<.01	NO
COMLP	0.98	<.01	NO
INDLP	0.99	<.05	NO
SVO	0.94	<.01	NO

Note. COEXP refers to cooperative learning experiences; COMEXP refers to competitive learning experiences; INDEXP refers to individualistic learning experiences; Culture refers to I–C cultural identity; COLP refers to cooperative learning preference; COMLP refers to competitive learning preference; INDLP refers to individualistic learning preference; SVO refers to angle degree of social value orientation.

Adjustments Based on Reliability Test Results. In Study 1, using SPSS 25, the Cronbach's alpha of each scale was tested to verify the internal consistency reliability of the measures applied in the present research. Overall, Cronbach's alpha results suggested that each scale showed good or acceptable internal reliability except the competitive learning experiences scale (α = .68), individualistic learning experiences scale (α = .67), and one subscale of cultural identity (Group Preference, α = .58). Since

these are published scales, most items remained in the final SEM. Nonetheless, two items in the competitive learning experiences scales and one item from the individualistic learning preference scale were excluded from the final analysis because (a) the results of the reliability test signified that these items were less or even negatively related to the construct they measured (corrected item–total correlation for the three items were -.13, .09, and .02, respectively) and the Cronbach's alpha of corresponding scales would have significantly increased if these items were deleted; (b) based on the CFA results, these items showed negative coefficients to the construct they measured (beta = -.50, -.21, and -.37); (c) this study aimed to explore the relationships among the latent constructs rather than focusing on the measurement model. Hence, these three items were excluded from the full SEM.

5.4.4 SEM (R) Analysis

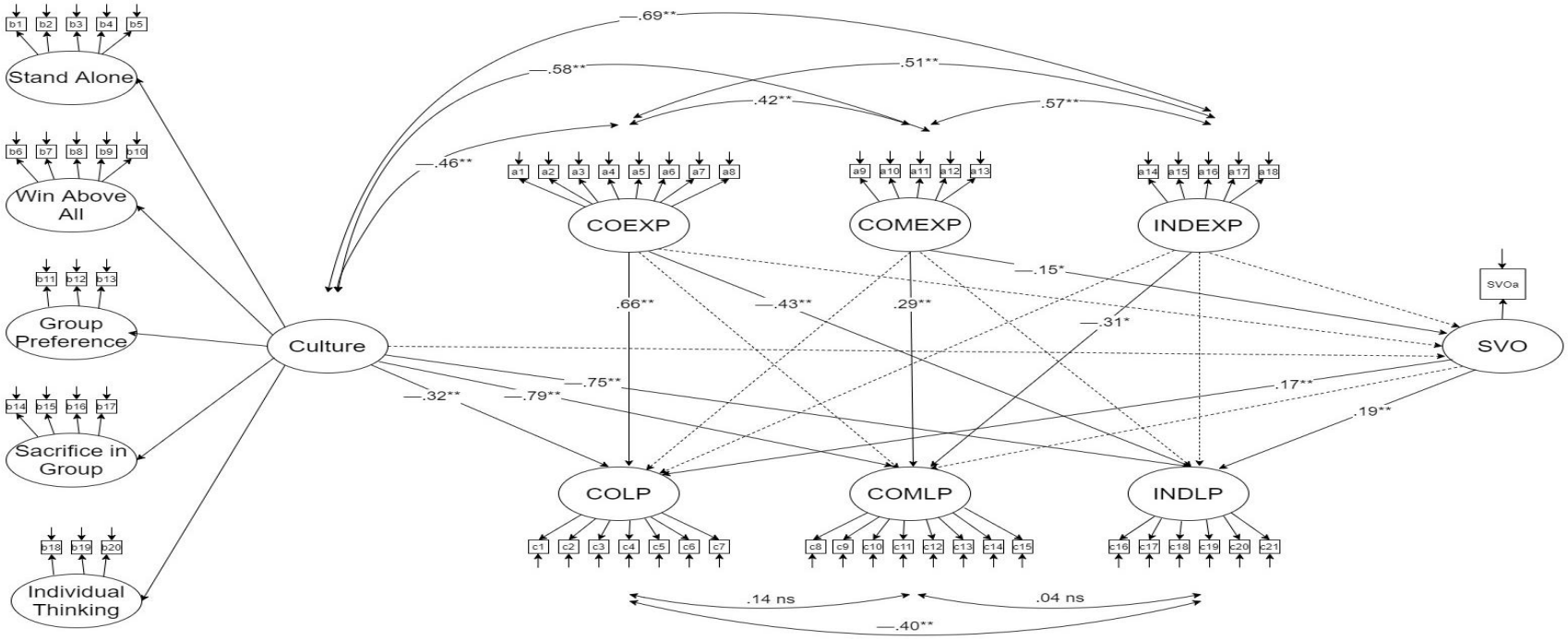
When the data do not meet the requirement of multivariate normality assumption, normal SEM estimate methods, such as maximum likelihood (ML), may not be appropriate to use. This is because, theoretically speaking, if the ML estimation is used in a sample that does not meet multivariate normal distribution requirements, it could mislead the chi-squared statistic and parameter estimates, result in false rejection of the whole model, and incorrectly specify the significance of relationships between variables in the model (Muthén & Kaplan, 1985; Beauducel & Herzberg, 2006; Rhemtulla et al., 2012). Diagonal weighted least squares (DWLS) is widely thought of as an alternative estimates approach of SEM, especially when data are not multivariate normal (e.g., Finney & DiStefano, 2006; Muthén, 1993). As a robust estimation technique, DWLS could provide more accurate estimates of standard errors of parameter estimates and overall model fit index (Rhemtulla et al., 2012; Wirth &

Edwards, 2007). Therefore, the DWLS estimate approach was applied to analyse the present SEM model.

The diagram output representing the final SEM model is shown below (see Figure 5). Direct and indirect paths have been summarised in Table 3. Path coefficients can be interpreted as beta. The model fit of the hypothesised model with the data of Study 1 was calculated using several indexes, including chi-square, CFI, TLI, RMSEA, and SRMR. An acceptable fit is generally indicated by CFI > .90; TLI > .90; RMSEA < .10; and SRMR < .10 (Hu & Bentler, 1999; McDonald & Ho, 2002; Browne & Cudeck, 1992; MacCallum et al., 1996). Results of this study were as follows: $\chi 2$ (1620) = 3293.13, p <.01; CFI = .93; TLI = .92; RMSEA = .063, and SRMR = .098, suggesting a satisfactory model fit.

Figure 5.

SEM Diagram in Study 1



Note. SEM diagram of previous learning experiences, cultural identity, SVO, and learning preferences. Standardised regression coefficients and covariance are presented. COEXP refers to cooperative learning experiences; COMEXP refers to competitive learning experiences; INDEXP refers to individualistic learning experiences; Culture refers to I–C cultural identity; COLP refers to cooperative learning preference; COMLP refers to competitive learning preference; INDLP refers to individualistic learning preference; SVO refers to social value orientation. Black full lines represent significant paths, and dashed lines are non-significant. *p < .05. **p < .01.

Table 3.

Results of SEM Indicating Path Weights, Standard Errors, and p-values of the Hypothesised Model in Study 1

Path	Weight	*SE*	*p*
Direct paths			
Cooperative learning experiences to:			
SVO	-0.04	1.01	0.94
Cooperative learning preference	0.66	0.10	<.01
Competitive learning preference	0.05	0.07	0.23
Individualistic learning preference	-0.43	0.11	<.01
Competitive learning experiences to:			
SVO	-0.15	0.99	0.04
Cooperative learning preference	0.02	0.07	0.74
Competitive learning preference	0.29	0.08	<.01
Individualistic learning preference	-0.002	0.09	0.97
Individualistic learning experiences to:			
SVO	0.16	3.27	0.22
Cooperative learning preference	-0.12	0.22	0.21
Competitive learning preference	-0.31	0.26	0.01
Individualistic learning preference	0.04	0.29	0.69
Cultural identity to:			
SVO	0.18	1.28	0.06
Cooperative learning preference	-0.32	0.09	<.01
Competitive learning preference	-0.79	0.17	<.01
Individualistic learning preference	-0.75	0.14	<.01
SVO to:			
Cooperative learning preference	0.17	0.00	<.01
Competitive learning preference	0.02	0.01	0.67

Individualistic learning preference	0.19	0.01	<.01
Path	Weight	*SE*	*p*
Indirect paths			
Cooperative learning preference from:			
Cooperative learning experiences	0.00	0.02	0.94
Competitive learning experiences	-0.03	0.02	0.07
Individualistic learning experiences	0.03	0.06	0.28
Cultural identity	0.03	0.03	0.12
Competitive learning preference from:			
Cooperative learning experiences	0.00	0.00	0.94
Competitive learning experiences	0.00	0.01	0.69
Individualistic learning experiences	0.00	0.02	0.73
Cultural identity	0.00	0.01	0.71
Individualistic learning preference from:			
Cooperative learning experiences	0.00	0.02	0.94
Competitive learning experiences	0.03	0.03	0.09
Individualistic learning experiences	-0.03	0.08	0.24
Cultural identity	-0.03	0.03	0.05

Hypothesis 1.1: Cooperative learning experiences will be positively related to a prosocial value orientation and a cooperative learning preference but will be negatively related to proself (competitive or individualistic) value orientations and competitive and individualistic learning preferences.

Chinese participants' cooperative learning experiences were significantly associated with both cooperative and individualistic learning preferences but not with competitive learning preferences. Moreover, there were no indirect paths between cooperative learning experiences and the three types of learning preference. These results partly verified the hypothesis that participants' cooperative learning experiences were positively associated with cooperative learning preferences. However, the hypothesised negative relationship between cooperative learning experiences and individualistic learning preference was not observed; instead, the relationship between these two variables was found to be positive. Results showed no significant association between cooperative learning experiences and SVO.

Hypothesis 1.2: Competitive learning experiences will be positively related to a competitive value orientation and a competitive learning preference and negatively related to a prosocial value orientation and a cooperative learning preference.

Findings demonstrated a positive relationship between competitive learning experiences and competitive learning preferences. Competitive learning experiences were also found to be negatively related to prosocial value orientation. Nevertheless, the hypothesised relationships between competitive learning experiences and cooperative and individualistic learning preferences were shown to be non-significant.

Meanwhile, indirect paths between competitive learning experiences and the three types of learning preferences showed no significant trend. Thus, the findings partly supported the hypothesis that competitive learning experiences can predict competitive learning preferences and prosocial value orientations.

Hypothesis 1.3: Individualistic learning experiences will be positively related to an individualistic value orientation and an individualistic learning preference and negatively related to a prosocial value orientation and a cooperative learning preference.

Findings indicated that individualistic learning experiences were negatively related to competitive learning preferences but not related to cooperative and individualistic learning preferences. Individualistic learning experiences were unrelated to SVO, and the indirect paths between individualistic learning experiences and the three types of learning preferences were not statistically significant. Hence, the hypothesis regarding individualistic learning experiences was not supported by the findings in Study 1, while an unexpected relationship with competitive learning preference was observed.

Hypothesis 2: A collectivist cultural identity will be positively associated with a prosocial value orientation and a cooperative learning preference and negatively associated with proself (competitive or individualistic) value orientations and competitive and individualistic learning preference. An individualistic cultural identity will be positively associated with proself (competitive or individualistic) value orientation and competitive and individualistic learning preferences and negatively related to a prosocial value orientation and a cooperative learning

preference.

The relationships between I–C cultural identity and the three types of learning preference were found to be statistically significant. More specifically, collectivist cultural identity was negatively related to a competitive learning preference and an individualistic learning preference (with a significant indirect effect of SVO). Although it was hypothesised that collectivist cultural identity would be positively linked with cooperative learning preferences, the current findings indicated a negative relationship. Results also showed that the relationship between cultural identity and SVO was positive but did not meet the standard threshold of significance at $p = .06$.

Hypothesis 3: A prosocial value orientation would be positively related to a cooperative learning preference. A competitive value orientation would be positively associated with a competitive learning preference. An individualistic value orientation would be positively related to an individualistic learning preference.

Findings demonstrated that SVO was significantly associated with cooperative and individualistic learning preferences but was not related to a competitive learning preference. Findings partly confirmed the hypothesis regarding the positive relationship between prosocial value orientation (i.e., higher SVO score) and cooperative learning preferences; however, the relationship between individualistic value orientation and individualistic learning preference was significantly negative.

5.5 Discussion

This study examined the relationships between Chinese undergraduates' previous learning experiences, their I–C cultural identity, their SVO, and their learning preferences.

Previous Learning Experiences

Results illustrated that cooperative learning experiences were significantly positively related to learners' cooperative preferences, while competitive learning experiences had a positive relationship with competitive learning preferences. These findings align with previous research, which has found a positive relationship between learning experiences and corresponding types of learning preference (e.g., Ryan & Wheeler, 1977; Choi et al., 2011). Individualistic learning experiences were found to be negatively related to competitive learning preferences. This finding indicates that, for Chinese students, the more individualistic learning they experienced, the less they preferred a competitive learning approach. This result corroborates previous research from the United States positing a negative relationship between cooperative learning experiences and individualistic learning preferences (see Choi et al., 2011; in their study, an individualistic learning preference was named "a predisposition toward individualistic efforts").

Cooperative learning experiences were found to have no relationship with competitive learning preferences, which is consistent with findings from previous studies (Choi et al., 2011). In China, competition has been highlighted in the education field:

cooperative learning (e.g., small-group work in the classroom) usually contains within-group cooperation and between-group competition. In other words, in China, students may gain competitive learning experiences despite taking part in a cooperative classroom activity. Thus, in the Chinese context, it would seem reasonable that cooperative learning experiences may not be negatively associated with competitive learning preferences. A negative correlation was also found between competitive learning experiences and SVO, supporting previous studies. It is suggested that the more competitive learning experiences students engage in, the less they will be likely to cultivate a prosocial value orientation (Johnson & Johnson, 1989, 2005).

I–C Cultural Identity

Findings from the present study partly support findings from previous studies that a higher level of personal collectivist identity would be associated with lower levels of competitive and individualistic learning preferences (Hofstede et al., 2005; Triandis, 1996; Wagner, 1995). It can be inferred that when Chinese participants emphasise and appreciate the value of a group (i.e., exhibiting a higher level of collectivist identity), they tend to disfavour competitive and individualistic learning approaches because these learning approaches highlight the value of competition and individual achievement rather than the value of group cooperation and collective good.

Nonetheless, the hypothesised positive relationship between collectivist cultural identity and cooperative learning preference was not observed. In fact, findings showed the opposite: collectivist cultural identity was negatively related to cooperative learning preference. Previous studies have noted that a collectivist culture

(at both the national and individual level) is frequently related to the orientation towards group value over individual value (e.g., Triandis, 1995; Hofstede, 2001). In learning settings, people with a higher level of collectivist identity tend to learn cooperatively and mutually support each other. Researchers, however, have observed that this may not always be the case and that collectivist learners may not adapt to or prefer cooperative learning (e.g., Nguyen et al., 2006). For example, in a cooperative learning classroom, face-to-face interactions among students are often required, and students learn from each other via the process of challenging their peers' opinions and conclusions (Johnson & Johnson, 1991, 2005). In a cooperative learning environment, positive interactions between students (e.g., critical discussion and cross-examination) could play an essential role in enhancing the learning process and improving learning outcomes. However, in a society characterised by a collectivist culture, student–student interactions in the class (e.g., challenging others' opinions) may not fit the norm of collectivism. In contrast to many individualistic countries where students are encouraged to openly disagree with their peers, for Chinese students, direct confrontation is considered inappropriate behaviour which must be avoided in many situations (Hofstede, 1986). It has also been suggested that critical and open-ended discussions may make collectivist students feel uncomfortable (Nguyen et al., 2006). Usually, disagreeing with or challenging others' points of view is thought of as impolite. Instead, when holding different opinions, Chinese students tend to communicate with others in private to prevent (and protect other people from) humiliation or "losing face". Volet (1999) argued that Chinese students emphasise group harmony, classroom conformance, and face-saving; therefore, it can be challenging when confronted with a learning situation that encourages debate or active interactions with their peers. Especially in a collectivist society, the harmony of the collective and personal social

image regarding “face culture” is recognised as a priority by default. Hence, the value of employing cooperative learning (e.g., learning benefits from critical discussions and positive comments) may not be considered relevant, helpful, or essential in supporting students’ learning (Valiente, 2008).

It can be inferred those Chinese students with a higher collectivist cultural identity tend to be more concerned with interpersonal relationships and group harmony. As such, they might have a stronger inclination towards maintaining group harmony and avoiding face-to-face conflicts, and they tend to apply learning strategies centred on politeness and face-saving (Gao et al., 1996). Since collectivist learners tend to focus on maintaining harmonious relationships among group members and retreat from possible disagreement, the confrontation among students in a cooperative learning classroom may not be appropriate for those following the collectivist cultural norms (Nguyen et al., 2006). The results of this study support this explanation rather than the rationale that a higher level of collectivist cultural identity is positively related to cooperative learning preferences.

SVO

It was hypothesised that SVO would be associated with learning preferences. Results, indeed, demonstrated that a prosocial value orientation was significantly positively related to a cooperative learning preference. People who frequently like to help and cooperate with others in daily life might also prefer helping and cooperating with others to achieve learning goals. This assumption is in line with previous studies that show that SVO can predict and explain individual differences in preferences for

cooperation (e.g., Bogaert, 2008; Van Lange et al., 2007). In contrast to previous research, however, the present study did not find a relationship between competitive value orientations and competitive learning preferences. It may be relevant that very few participants in the current study were identified to have a competitive value orientation: most demonstrated either prosocial or individualistic value orientations. The study also indicated a positive relationship between prosocial value orientations and individualistic learning preferences. To the researcher's knowledge, this relationship has not, so far, been proposed by existing literature nor been demonstrated by any empirical studies. Further studies might be needed to address this issue.

5.6 Summary

To sum up, Study 1 examined the relationships between previous learning experiences, I–C cultural identity, SVO, and learning preference, based on a sample of 260 undergraduates (74 males and 186 females) in China. Using SEM (the DWLS estimating approach) in R, model fit indices indicated an adequate model fit of the proposed SEM model. Results showed that cooperative learning experiences were positively associated with cooperative learning preferences and negatively related to individualistic learning preferences. Competitive learning experiences were positively associated with competitive learning preferences and negatively related to SVO, while individualistic learning experiences were found negatively related to competitive learning preferences. I–C cultural identity predicted cooperative, competitive, and individualistic learning preferences but may not be related to SVO. Finally, SVO predicted cooperative and individualistic learning preferences.

Chapter 6 Study 2: Investigation of the Relationship Between Previous Learning Experiences, I–C Cultural Identity, SVO, and Learning Preference in the UK

6.1 Overview

This chapter details the aims, methods, and results of Study 2. It begins with the aims and hypotheses, followed by a description of the research methods, including sampling, survey instruments, the data collection procedure, and data analysis. The study's results are then reported and discussed in detail.

6.2 Aim and Hypotheses

Study 2 replicated Study 1 with a UK sample to examine the relationships between previous learning experiences, I–C cultural identity, SVO, and learning preferences in the UK context. The following hypotheses were generated.

1. Previous learning experiences will be related to SVO and learning preference.

1.1. Cooperative learning experiences will be positively related to a prosocial value orientation and a cooperative learning preference but will be negatively related to proself (competitive or individualistic) value orientations and competitive and individualistic learning preferences.

1.2. Competitive learning experiences will be positively related to a competitive value

orientation and a competitive learning preference and negatively related to a prosocial value orientation and a cooperative learning preference.

1.3. Individualistic learning experiences will be positively related to an individualistic value orientation and an individualistic learning preference and negatively related to a prosocial value orientation and a cooperative learning preference.

2. Participants' I–C cultural identity will be related to SVO and learning preference.

- A collectivist cultural identity will be positively associated with a prosocial value orientation and a cooperative learning preference and negatively associated with proself (competitive or individualistic) value orientations and competitive and individualistic learning preference.
- An individualistic cultural identity will be positively associated with proself (competitive or individualistic) value orientation and competitive and individualistic learning preferences and negatively related to a prosocial value orientation and a cooperative learning preference.

3. SVO will be related to learning preference.

- A prosocial value orientation will be positively related to a cooperative learning preference.
- A competitive value orientation will be positively associated with a competitive learning preference.
- An individualistic value orientation will be positively related to an individualistic learning preference.

6.3 Methods

6.3.1 Sample

Participants were selected from a population of undergraduates in UK universities. The sample size was expected to be above 200 to achieve adequate statistical power for SEM (Jackson, 2003). Two UK universities were contacted to obtain permission to recruit undergraduates for this research. The final sample for data analysis consisted of 302 UK undergraduates (56 male and 246 female participants) from these two universities. Most undergraduates majored in social sciences, explaining the significant percentage of female participants (accounting for 81.5% of the UK sample). The participants' age ranged from 18 to 23, with a mean of 18.9 (*SD* = 1.02).

6.3.2 Materials

An online survey was developed to collect data regarding participants' demographic information, previous learning experiences, I–C cultural identity, SVO, and learning preferences. The same measures were used as in Study 1. The full online questionnaire of Study 2 comprised 80 items (see Appendix).

Using SPSS 25, the Cronbach's alpha of each scale was tested to determine the internal consistency reliability of the measures. In terms of the previous learning experience questionnaire, Cronbach's alphas were .81, .83, and .39 for the cooperative learning experience scale (including eight items), the competitive learning experience scale (seven items), and the individualistic learning experience scale (seven items), respectively. Meanwhile, the Cronbach's alphas for each dimension of the I–C scale were: Stand Alone (five items) = .77; Win Above All (five items) = .76; Group Preference

(three items) = .87; Sacrifice in Group (four items) = .79; and Individual Thinking (three items) = .80. In terms of the social interdependence scale, Cronbach's alphas for the cooperative interdependence subscale (seven items), the competitive interdependence subscale (eight items) and the individualistic interdependence subscale (seven items) were .90, .88, and .91, respectively.

6.3.3 Procedure

An online survey was built through Qualtrics, a widely used online survey tool for scientific research in the English language. UK undergraduates from two universities in England were invited to complete the online survey via Qualtrics. The undergraduates were given the link to complete the survey either from their faculty staff and faculty online survey system or from the online advertising of this research via social networking platforms (e.g., Facebook). Through the secure online web link, participants accessed the online survey and gave their consent to participate in the study. When participants missed a response to an item, they would be automatically reminded to fill it in before going to the next page of the online survey. They could not submit the survey if they partially completed the online questionnaire or skipped any questions. As such, there were no missing data in this study.

Following Study 1, a lottery system was employed to provide incentives. Participants were told the amount of money they could win would be based on their responses in the SVO section of the online questionnaire. The actual amount of money UK each UK participant had a chance to receive was £10, and it was available for five participants. At the end of the online survey, participants were asked to leave their email addresses so they could be contacted to receive the money. Participants were then emailed for

their online wallet numbers (e.g., PayPal). Rewards were sent to their online accounts within three months after the data were collected. The duration for collecting quantitative data in Study 2 was around three weeks.

6.3.4 Data Analysis

After the data were collected, they were downloaded into SPSS and R. Among the collected data, one participant's responses were excluded from the final analysed sample since her submitted responses included frequent extreme scores (diagnosed as outliers by the SPSS programme).

Following Study 1, SEM (using R lavaan package) was used to examine whether the hypothesised model fit the UK sample data. Study 2 hypothesised that the path model might have four exogenous variables and four endogenous variables. SVO was considered a mediating variable between previous learning experiences, I–C cultural identity, and learning preferences (see Figure 1, p. 12).

6.4 Results of Study 2

6.4.1 Descriptive Analysis

The proposed model was analysed by SEM using R. Analyses focused on overall model fitness and significant test of individual paths. Table 4 shows the means, standard deviations, and correlations of the variables in the SEM model from the UK sample.

Table 4.

Means of Variables and Intercorrelations of Previous Learning Experiences, Cultural Identity, SVO, and Learning Preference in Study 2

Variables	*M*	*SD*	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1. Cooperative learning experiences	3.82	.59	-						
2. Competitive learning experiences	3.03	.69	-.04	-					
3. Individualistic learning experiences	3.51	.45	-.11	.11	-				
4. Cultural identity	4.50	.63	.18**	-.19**	-.01	-			
5. Cooperative learning preference	2.26	.80	-.37**	.02	.00	-.36**	-		
6. Competitive learning preference	4.18	1.09	.12**	-.34**	.09	.42**	-.05	-	
7. Individualistic learning preference	3.88	1.20	.43**	-.07	-.08	.51**	-.39**	.27**	-
8. SVO	34.64	9.12	-.04	-.14*	-.01	.20**	-.15**	.17**	.10

**. Correlation is significant at the 0.01 level (two-tailed).

*. Correlation is significant at the 0.05 level (two-tailed).

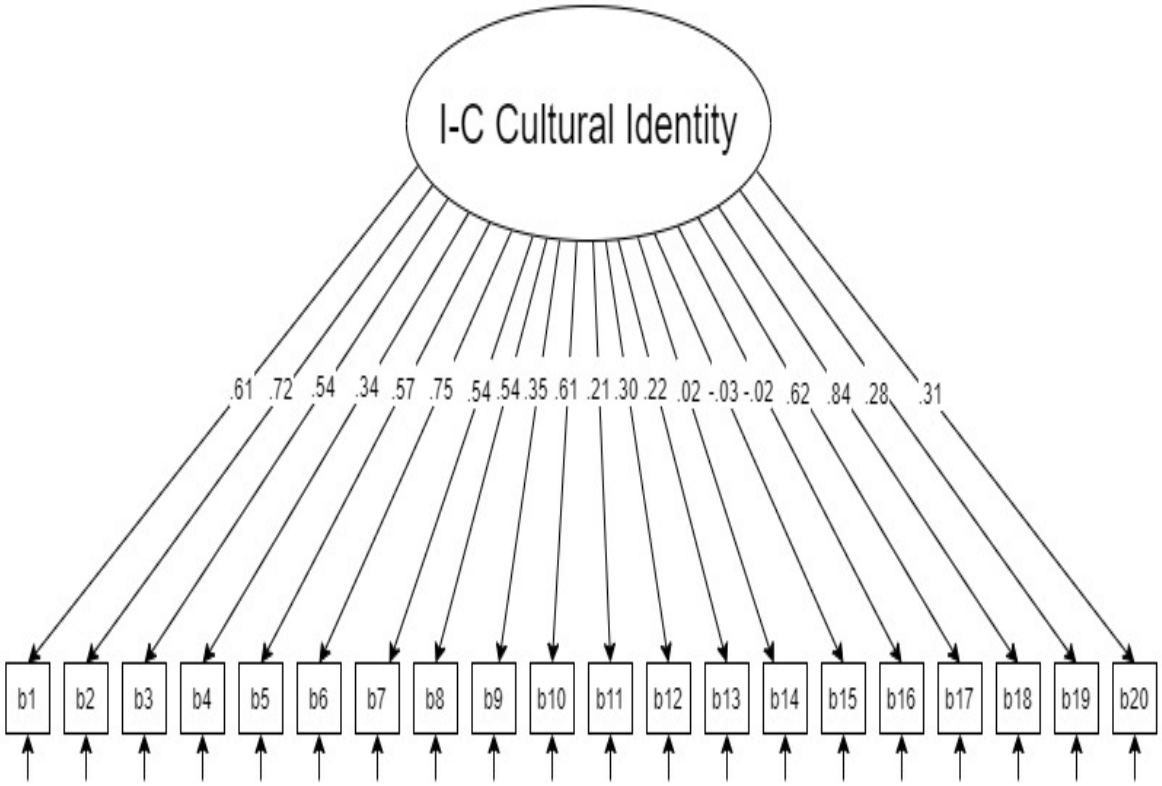
6.4.2 Test of Multidimensionality

Before conducting a full SEM, the I–C cultural identity measure's dimensionality was examined via two steps. In the first step, CFA was employed to examine a unidimensional model, including 20 items (see Figure 6). Much like the results from Study 1, Study 2 provided evidence of a poor model fit (chi-square = 1646.058, *df* = 170, $p < .01$; CFI = .347; TLI = .27; RMSEA = .17).

In the second step, results from a multidimensional model representing first-order factors for each cultural identity dimension were calculated (see Figure 7). The second model was a better fit than the first (chi-square = 358.92, *df* = 160, $p < .01$; CFI = .912; TLI = .895; RMSEA = .064). Hence, it can be inferred that a multidimensional model consisting of five freely correlated first-order dimensions is superior to a unidimensional first-order factor model. Therefore, the second model was applied in the full SEM without any further change or modification of the original items.

Figure 6.

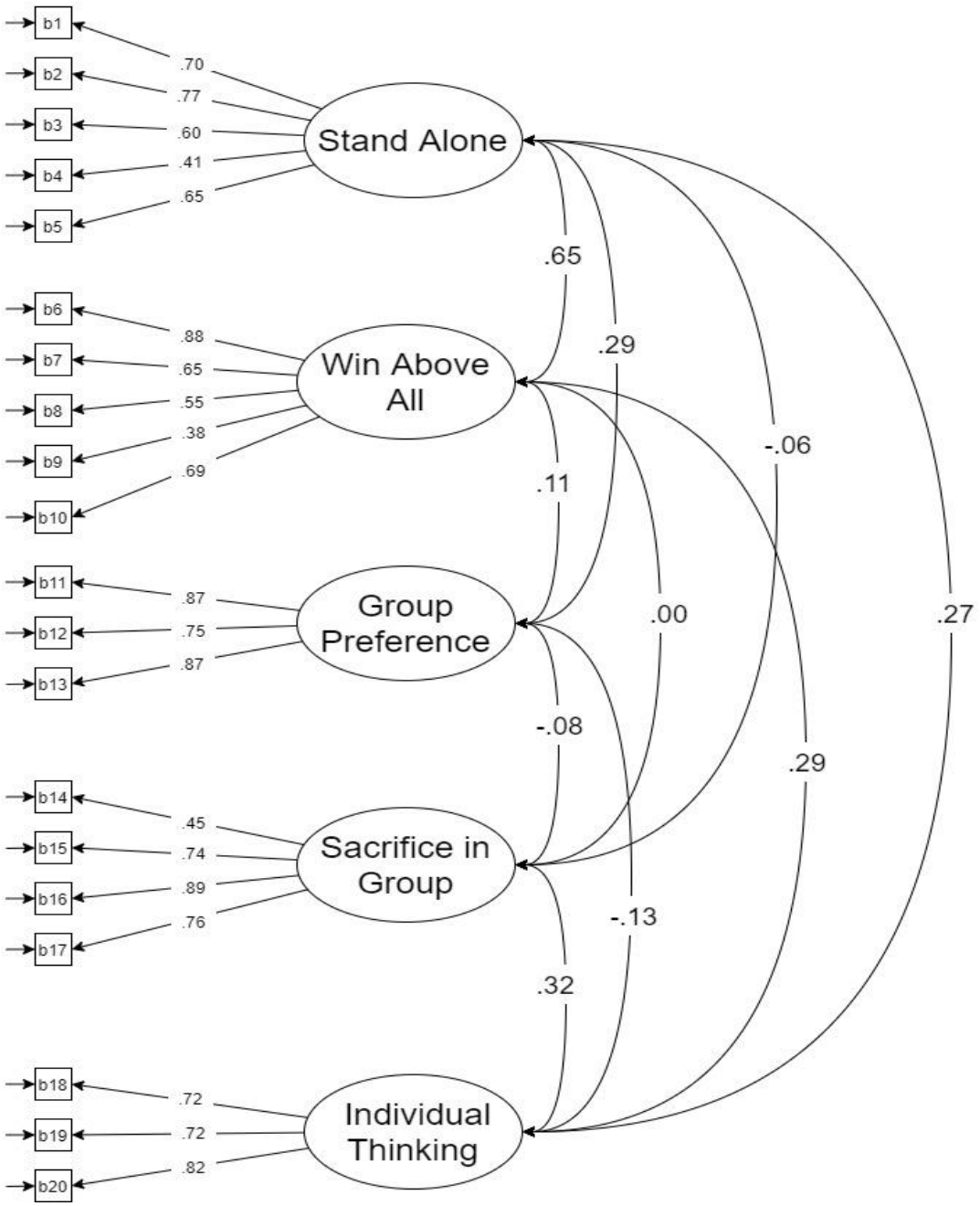
The Unidimensional CFA Model of I–C Cultural Identity in Study 2



Note. In this figure, b1 to b20 refer to 20 items.

Figure 7.

The Multidimensional CFA Model of I–C Cultural Identity in Study 2



Note. In this figure, Stand Alone, Win Above All, Group Preference, Sacrifice in Group, and Individual Thinking are five factors of I-C cultural identity, and b1 to b20 refer to 20 items.

6.4.3 Test of Multivariate Normality

The multivariate normality of the data was examined by using Mardia's MVN test. The results showed that, for the data of Study 2, its Mardia's multivariate skewness was 8.93, Chi-square value of the skewness was 449.6, $p < .01$; Mardia's multivariate kurtosis was 95.58, z value of the kurtosis was 10.7, $p = 0$; and Chi-square value of small sample skewness was 455.07, $p < .01$. According to Mardia (1970), both p-value of skewness and kurtosis statistics need to be greater than .05 to meet multivariate normality. Therefore, results indicated that the data of Study 2 were not multivariate normal (also see Figure 8 an MVN plot). Results of univariate analysis also indicated that all the variables except cultural identity and competitive learning preference were not univariate normal (see Table 5).

Figure 8.

Chi-Square Q–Q Plot of Results from Mardia's Multivariate Normality Test in Study 2

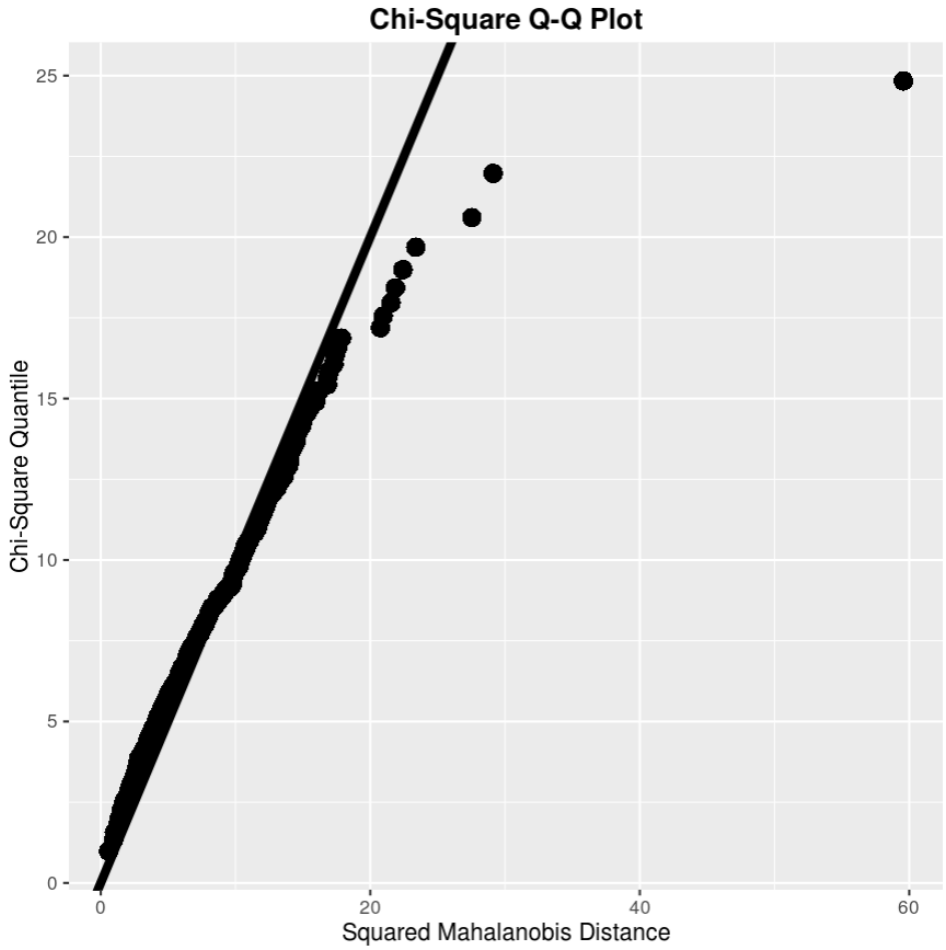


Table 5.

Results of Shapiro–Wilk's Univariate Normality Test in Study 2

Variable	Statistic	p-value	Normality
COEXP	0.97	<.01	NO
COMEXP	0.99	<.05	NO
INDXP	0.98	<.01	NO
Culture	0.99	.12	YES
COLP	0.90	<.01	NO
COMLP	0.99	.23	YES
INDLP	0.99	.05	NO
SVO	0.82	<.01	NO

Note. COEXP refers to cooperative learning experiences; COMEXP refers to competitive learning experiences; INDEXP refers to individualistic learning experiences; Culture refers to cultural identity regarding individualism-collectivism; COLP refers to cooperative learning preference; COMLP refers to competitive learning preference; INDLP refers to individualistic learning preference; SVO refers to angle degree of social value orientation.

Adjustments Based on Reliability Test Results. Overall, Cronbach's alpha results suggested that scales showed good or acceptable internal reliability, except the individualistic learning experience scale (α = .39). Two items in the individualistic learning preference scales were excluded from the final analysis. Firstly, the reliability test results indicated that these two items were unrelated to the construct they measured (corrected item–total correlation for the two items were .17 and .14), and

the Cronbach's alpha of corresponding scales would be improved if these items were deleted. Secondly, this study aimed to explore the relationships among the latent constructs rather than focusing on the measurement model. Hence, these two items were not included in the full SEM.

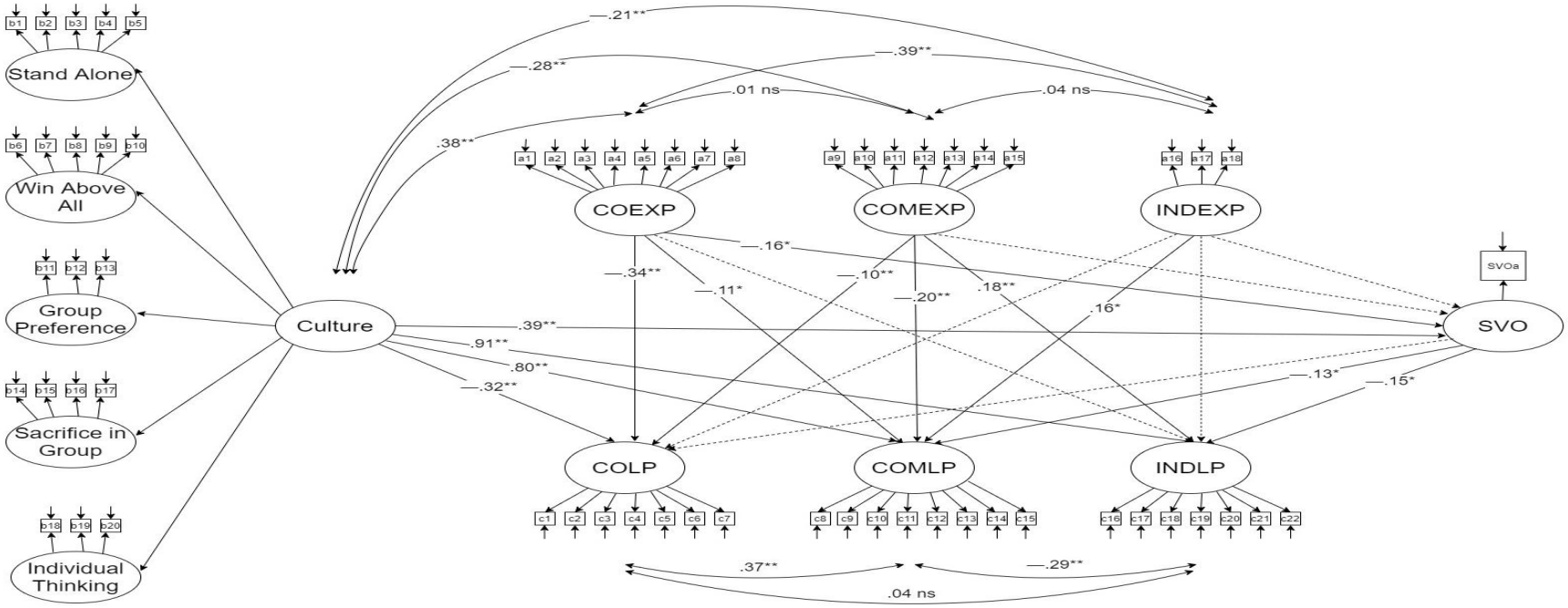
6.4.4 SEM (R) Analysis

A DWLS estimate approach was applied to analyse the SEM model (see Study 1 for justification of this approach). Full SEM was conducted to examine previous learning experiences, I–C cultural identity, SVO, and learning preference (see Figure 9). Direct and indirect paths are summarised in Table 6.

The model fit of the hypothesised model with the present data was calculated using several indexes, including chi-square, CFI, TLI, RMSEA, and SRMR. The results were as follows: $\chi 2$ (1620) = 3286.40, $p < .01$; CFI = .90; TLI = .89; RMSEA = .058; and SRMR = .084. Based on the existing literature, all the above model fit indices suggested an acceptable model fit (e.g., Hu & Bentler, 1999; Kline, 2015).

Figure 9.

SEM Diagram in Study 2



Note. SEM diagram of previous learning experiences, cultural identity, SVO, and learning preferences. Standardised regression coefficients and covariance are presented. COEXP refers to cooperative learning experiences; COMEXP refers to competitive learning experiences; INDEXP refers to individualistic learning experiences; Culture refers to I–C cultural identity, and Stand Alone, Win Above All, Group Preference, Sacrifice in Group, and Individual Thinking refer to five factors of cultural identity; COLP refers to cooperative learning preference; COMLP refers to competitive learning preference; INDLP refers to individualistic learning preference; SVO refers to social value orientation. Black full lines represent significant paths, and dashed lines are non-significant. *p < .05. **p < .0

Table 6.

Results of SEM Indicating Path Weights, Standard Errors, and p-values of the Hypothesised Model in Study 2

Path	Weight	*SE*	*p*
Direct paths			
Cooperative learning experiences			
to:			
SVO	-0.16	1.40	0.01
Cooperative learning preference	-0.34	0.07	<.01
Competitive learning preference	-0.11	0.11	0.04
Individualistic learning preference	0.06	0.18	0.27
Competitive learning experiences			
to:			
SVO	-0.04	0.52	0.38
Cooperative learning preference	-0.10	0.02	<.01
Competitive learning preference	-0.20	0.04	<.01
Individualistic learning preference	0.18	0.07	<.01
Individualistic learning experiences			
to:			
SVO	0.08	1.03	0.33
Cooperative learning preference	-0.05	0.04	0.24
Competitive learning preference	0.16	0.08	0.02
Individualistic learning preference	-0.10	0.12	0.15
Cultural identity to:			
SVO	0.39	.91	<.01
Cooperative learning preference	-0.32	0.05	<.01
Competitive learning preference	0.80	0.11	<.01

Individualistic learning preference	0.91	0.18	<.01
SVO to:			
Cooperative learning preference	-0.07	0.00	0.13
Competitive learning preference	-0.13	0.01	0.05
Individualistic learning preference	-0.15	0.01	0.03

Path	Weight	*SE*	*p*
Indirect paths			
Cooperative learning preference from:			
Cooperative learning experiences	0.01	0.01	0.22
Competitive learning experiences	0.00	0.00	0.49
Individualistic learning experiences	-0.01	0.01	0.38
Cultural identity	-0.03	0.02	0.12
Competitive learning preference from:			
Cooperative learning experiences	0.02	0.03	0.15
Competitive learning experiences	0.01	0.01	0.39
Individualistic learning experiences	-0.01	0.02	0.42
Cultural identity	-0.05	0.04	0.12
Individualistic learning preference from:			
Cooperative learning experiences	0.03	0.05	0.14
Competitive learning experiences	0.01	0.01	0.34
Individualistic learning experiences	-0.01	0.02	0.37
Cultural identity	-0.06	0.07	0.10

Hypothesis 1.1: Cooperative learning experiences will be positively related to a prosocial value orientation and a cooperative learning preference but will be negatively related to proself (competitive or individualistic) value orientations and competitive and individualistic learning preferences.

Results supported this hypothesis and demonstrated that UK participants' cooperative learning experiences were negatively related to competitive learning preferences. However, the hypothesised positive relationships between cooperative learning experiences, prosocial value orientation, and cooperative learning preferences were not found; instead, cooperative learning experiences were negatively related to these two constructs. No relationship was observed between cooperative learning experiences and individualistic learning preferences. In addition, there was no indication of indirect effects between cooperative learning experiences and the three different learning preferences.

Hypothesis 1.2: Competitive learning experiences will be positively related to a competitive value orientation and a competitive learning preference and negatively related to a prosocial value orientation and a cooperative learning preference.

Results showed that the relationships between competitive learning experiences and the three types of learning preference were all statistically significant. Therefore, findings only partially supported the hypothesis that competitive learning experiences were negatively related to cooperative learning preference: the expected positive relationship between competitive learning experiences and competitive learning preferences was not observed, and the results even indicated a negative relationship.

Furthermore, an unexpected positive relationship between competitive learning experiences and individualistic learning preferences was found. No relationship was observed between competitive learning experiences and SVO, nor were there any indirect effects of SVO on the relationship between competitive learning experiences and the three types of learning preferences observed.

Hypothesis 1.3: Individualistic learning experiences will be positively related to an individualistic value orientation and an individualistic learning preference and negatively related to a prosocial value orientation and a cooperative learning preference.

Results revealed no association between individualistic learning experiences and SVO or between individualistic learning experiences and cooperative and individualistic learning preferences. Individualistic learning experiences, however, were found to be significantly positively related to competitive learning preferences. No indirect effect of SVO was found on the relationship between individualistic learning experiences and the three types of learning preferences. Thus, although the findings failed to support this hypothesis, they demonstrated a significant relationship between individualistic learning experiences and competitive learning preferences.

Hypothesis 2: A collectivist cultural identity will be positively associated with a prosocial value orientation and a cooperative learning preference and negatively associated with proself (competitive or individualistic) value orientations and competitive and individualistic learning preference. An individualistic cultural identity will be positively associated with proself (competitive or individualistic)

value orientation and competitive and individualistic learning preferences and negatively related to a prosocial value orientation and a cooperative learning preference.

The results demonstrated a significant relationship between cultural identity and the three types of learning preference. Specifically, cultural identity was found to be negatively related to cooperative learning preferences and positively associated with competitive and individualistic learning preferences. No indirect effect of SVO was found in the paths between cultural identity and the three learning preferences. Findings also confirmed the hypothesis that a collectivist cultural identity was positively associated with a prosocial value orientation and negatively related to individualistic/competitive value orientations; however, the relationships between cultural identity and learning preference were the opposite of the hypotheses.

Hypothesis 3: A prosocial value orientation would be positively related to a cooperative learning preference. A competitive value orientation would be positively associated with a competitive learning preference. An individualistic value orientation would be positively related to an individualistic learning preference.

Finally, results indicated that a prosocial value orientation was negatively related to competitive and individualistic learning preferences. Nevertheless, there was no statistically significant relationship between SVOs and cooperation learning preference.

6.5 Discussion

This study examined the relationship between I–C cultural identity, previous learning experiences, and UK participants' learning preferences by investigating SVO as a mediating factor.

Previous Learning Experiences

Consistent with previous research (Choi et al., 2011), results demonstrated that cooperative learning experiences were significantly negatively related to learners' competitive learning preference, while competitive learning experiences were negatively related to cooperative learning preferences. These findings suggest that when students frequently engage in cooperative learning experiences, they may be less likely to prefer a competitive learning approach. Conversely, when students had more competitive learning experiences, they disfavoured cooperative learning. However, the hypothesised positive relationships between different learning experiences and their corresponding learning preferences were not observed in the present study. Findings showed that cooperative learning experiences were significantly negatively related to learners' cooperative learning preferences, while competitive learning experiences were negatively related to competitive learning preferences but positively associated with individualistic learning preferences. At the same time, individualistic learning experiences were positively related to competitive learning preferences. The present findings are novel in the context of the existing literature since previous studies have not provided evidence to support this relationship. Chapter 8 combines the findings of Studies 2 and 3 to further discuss and

understand these unexpected relationships.

The findings also showed that cooperative learning experiences were significantly negatively related to SVO, which is in contrast to previous studies' findings that the more cooperative learning experiences students engage in, the more likely they are to cultivate a prosocial value orientation (Choi et al., 2011). This suggests that cooperative learning experiences may be negatively related to UK learners' SVOs. Furthermore, UK students' SVOs were found to be positively predicted by a collectivist cultural identity (see below discussion).

I–C Cultural Identity

Results suggested that when participants reported a higher level of collectivist identity, they were more likely to report a prosocial value orientation. At the same time, collectivist cultural identity was negatively related to cooperative learning preferences and positively associated with competitive and individualistic learning preferences. These findings might be explained by considering some of the characteristics of individualist culture.

Theoretically, individualism is concerned with emphasising individual independence and personal aspects: personal goals and individual value are prioritised over the collective interest (Triandis, 1995). According to many scholars, individualistic people believe that personal wellbeing is strongly related to individual pursuits. Hence, individualists tend to strive for individualised tasks and related outcomes: they subordinate group concerns and interests, caring less about shared group pursuits and

collective outcomes (Triandis, 1995; Wagner & Moch, 1986). Typical attributes of individualism are often related to independence, self-reliance, individual autonomy, one's uniqueness, competitiveness, promoting the self-interest of the individual and their immediate family, and less concern towards others' interests and needs (see Triandis, 1995; Wanger, 1995; Hofstede, 2001; Darwish & Huber, 2003). These attributes of individualism are theoretically negatively related to a preference for cooperative learning because such a learning approach highlights each group member's efforts and contribution to the group and closely relates personal achievement to collective success. In contrast, competitive and individualistic learning approaches, which encourage within-class competition and require students to work independently, might be compatible with some cultural characteristics of individualism, such as the emphasis on individual independence, autonomy, and competitiveness. Thus, competitive and individualistic learning may be preferred by students with an individualist cultural identity. The current findings, however, appear to refute those of previous studies, wherein UK students, who have a stronger individualistic cultural identity, tend to favour cooperative learning and disfavour competitive and individualistic learning methods. This apparent contradiction will be discussed alongside the qualitative findings in the general discussion chapter.

SVO

In Study 2, prosocial value orientation was negatively related to competitive and individualistic learning preferences, partly confirming the research hypothesis. Existing studies have indicated that people who hold a prosocial value orientation may prefer prosocial behaviours and dislike competitive and/or individualistic behaviours

in most situations (Bogaert et al., 2008; Murphy et al., 2011; Murphy & Ackermann, 2014). Based on the current findings, it can be inferred that people who frequently like to help and cooperate with others in daily life (i.e., those who hold prosocial value orientations) would dislike competing with others or working individually and independently in order to achieve their learning goals.

Although relationships between SVOs and cooperative learning preferences were not observed in this study, the present findings are nonetheless significant, as they broaden the application of SVO in the education field and bridge the gap between SVO and learning preferences. For UK participants, it seems that SVO more sensitively reflects competitive and individualistic learning preferences than cooperative learning preferences.

6.6 Summary

In summary, Study 2 examined the relationships between previous learning experiences, I–C cultural identity, SVO, and learning preference based on a sample of 302 UK undergraduates (56 male and 246 female participants). Using SEM with a DWLS estimating method in R, the model fit indices reflected an adequate model fit of the proposed SEM model. Results showed that cooperative learning experiences were negatively related to SVO and cooperative and competitive learning preferences. Competitive learning experiences were negatively associated with cooperative and competitive learning preferences but positively related to individualistic learning preferences. Individualistic learning experiences were positively related only to competitive learning preferences. I–C cultural identity was positively related to

competitive and individualistic learning preferences and SVO but negatively related to cooperative learning preferences. SVO was negatively associated with individualistic learning preferences. Finally, no significant effect was found in each indirect path, which means the mediating effect of SVO was not significant in the UK sample.

Chapter 7 Study 3: Students' Beliefs About The Formation of Their Learning Preferences

7.1 Overview

To further understand the findings from Studies 1 and 2, Study 3 qualitatively explored Chinese and UK participants' beliefs about what may affect their learning preferences through an exploratory approach. Moreover, Study 3 also aimed to leave space to investigate other possible unexpected aspects of participants' relevant real-life experiences and the way they understand the phenomena (e.g., cooperative, competitive, or individualistic learning preferences and environment). A combined deductive-inductive approach, therefore, was applied in the present study (Morgan, 2007). Through the deductive approach, pre-existing literature and theories regarding I-C culture, learning experiences, SVO, and learning preferences and findings from Studies 1 and 2 lay the foundation for generating themes and codes in Study 3. Afterwards, in the inductive approach, themes and codes are also generated from the data via less restricted coding and refinement of themes, allowing for unexpected and more contextual-related responses. This combined approach used theoretical constructs and framework deductively (i.e., the relationships between the researched constructs), and then revising the theories with inductive facets (Gale et al., 2013). In study 3, face-to-face interviews were conducted with six participants from China and six from the UK.

7.2 Methods

7.2.1 Sampling

Twelve participants with an equal split across gender and country background were selected from those of Studies 1 and 2 using purposive sampling. The participants had to meet a specific criterion: they had a high score of either cooperative, competitive, or individualistic learning preferences. The final sample comprised four participants (one male and one female from both the UK and China) within each of the three learning preferences. All Chinese participants were educated at Chinese state-run schools from primary to high school, while amongst the UK participants, one was educated in a state school, one had undergone both home education and private school education, and the rest attended private schools.

7.2.2 Materials

Vignettes were used in the present research to help elicit participants' beliefs and attitudes about different learning environments (Barter & Renold, 1999; Gould, 1996; Hughes & Huby, 2002). Applying vignettes enabled participants to reflect upon their learning preferences in detail through their responses and comments about the described classroom contexts. Furthermore, vignettes offered the chance to investigate and compare British and Chinese participants' opinions and attitudes on the same texts (although the languages used were different), depicting three different classroom environments. Each of the scenarios presented was designed following this process: firstly, scenarios depicting three different classroom environments were developed based on the related literature (Johnson & Johnson, 2005, 2009); secondly, vignettes were examined and assessed according to whether they were appropriate to

represent situations related to research topics; and, finally, vignettes were piloted before use. After reading these vignettes, participants were encouraged to evaluate and comment on the three scenarios. The researcher facilitated the participants' responses by raising questions such as "how do you feel about these classrooms?", "which classroom do you like the most, and which is your least favourite? Why?" and "please make comments on each classroom". The vignettes can be seen below.

> **Cooperative Classroom.** "Students must work in groups to complete tasks collectively towards academic goals. Students try to ask one another for information, evaluating one another's ideas and monitoring one another's work. Classroom work is structured in ways that encourage cooperation. Students normally work together to complete tasks and assignments, such as completing a curriculum unit, writing a report, and conducting an experiment. The teacher's role changes from giving information to facilitating students' learning".

> **Competitive Classroom.** "Students compete with one another for school marks and other rewards. Students find competition compatible with their needs. Students normally work against each other to achieve an ideal academic goal, such as a grade of "A", which only one or a few students can attain. Teachers incorporate student competitions into the classroom as part of their curriculum to encourage students to stay on track and bring forth their best work by providing in-class marks towards final grades".

> **Individualistic Classroom.** "Students normally work autonomously. In this classroom, students work by themselves to accomplish learning goals unrelated

to those of the other students. Teachers usually ask their students to work on schoolwork alone and merely encourage them to work in groups".

Afterwards, the interview moved to the semi-structured element, which aimed to understand participants' own experiences in real-life settings. The follow-up interview questions comprised three parts:

1. Investigating participants' experiences of learning methods in the classroom

1.1 Concerning these vignettes, what similar experiences do you remember from your own classroom at school?

1.2 Could you please give me one or two examples of your experiences of the different approaches to learning? How did these make you feel?

1.3 Which of these approaches would you say was most dominant for you? Did this vary across subjects studied?

2. Exploring participants' preferences and attitudes toward learning methods

2.1 How do you feel about the classroom environment you have experienced? Why?

2.2 Comparing the classroom environment you have actually experienced with those presented in the scenarios, which one is your favourite? Why?

3. Exploring what else may affect participants' learning preferences

3.1 When you think about your preferred classroom environment, what factors have you taken into consideration?

3.2 What else do you want to share with me about your experience in classroom environments?

7.2.3 Procedure

Following completion of Studies 1 and 2, 26 participants were contacted and invited via the email address they provided to take part in Study 3. These participants were selected because they had a relatively high score of either cooperative, competitive, or individualistic learning preferences (i.e., scores of social interdependence scales). Specifically, a score of more than 5.0 was considered a high score since this measure was built upon a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*); thus, 5 refers to *slightly agree*. That is to say, participants who had a mean score of above 5 in the learning preference scale could be regarded as having a corresponding learning preference and were, therefore, recruited to participate in this study. Of the 26 potential participants, 12 accepted the invitation to participate in the study. Face-to-face semi-structured interviews with open-ended questions were conducted to explore participants' views on what may affect cooperative, competitive, and individualistic learning preferences based on their own experiences. All interviews were conducted in university campus areas to ensure safety and security. Interviews conducted in China used Mandarin, while English was used to interview the UK participants. Each interview lasted around 30 minutes. Interviews were recorded and stored by a digital audio recorder.

Prior to the interviews, the interviewees were informed about anonymity rules, privacy, and their right to withdraw from the study. When participants consented to the interview, the research began. The interview started with some easy questions (such as name, university, and majors) and vignettes to put participants at ease and create a rapport with them. Participants were then asked to respond to and make comments on vignettes. Subsequently, participants were instructed to respond to a series of

open-ended questions based on their experiences. After all the interview data were collected, thematic analysis was used for qualitative data analysis.

7.2.4 Data Analysis

Audio recordings of interview data conducted in China and the UK were transcribed verbatim in Chinese and English, respectively. Thematic analysis was then employed to analyse the data. It is admitted that there was no attempt to check the reliability of this approach of analysis (i.e., using a second analyst and performing interrater reliability calculations) in the Study 3. However, this might not necessarily affect the reliability of the current qualitative analysis. Barbour (2001) argued that "the degree of concordance between researchers is not really important; what is ultimately of value is the content of disagreements and the insights that discussion can provide for refining coding frames" (p. 1116). A key study by Armstrong et al. (1997) provided evidence that interrater reliability is not really applicable in many types of qualitative investigations.

The thematic analysis procedure comprised the following steps:

1. The researcher familiarised himself with the interview data by reading and re-reading the transcribed data and making notes regarding initial ideas.
2. Some initial codes related to research interest were generated.
3. Potential themes were identified from the codes based on the conceptual links between codes.
4. When the themes were proposed, they were reviewed in the context of extracted codes and entire interview data.
5. Specific themes were refined and then defined more clearly while being

appropriately named.

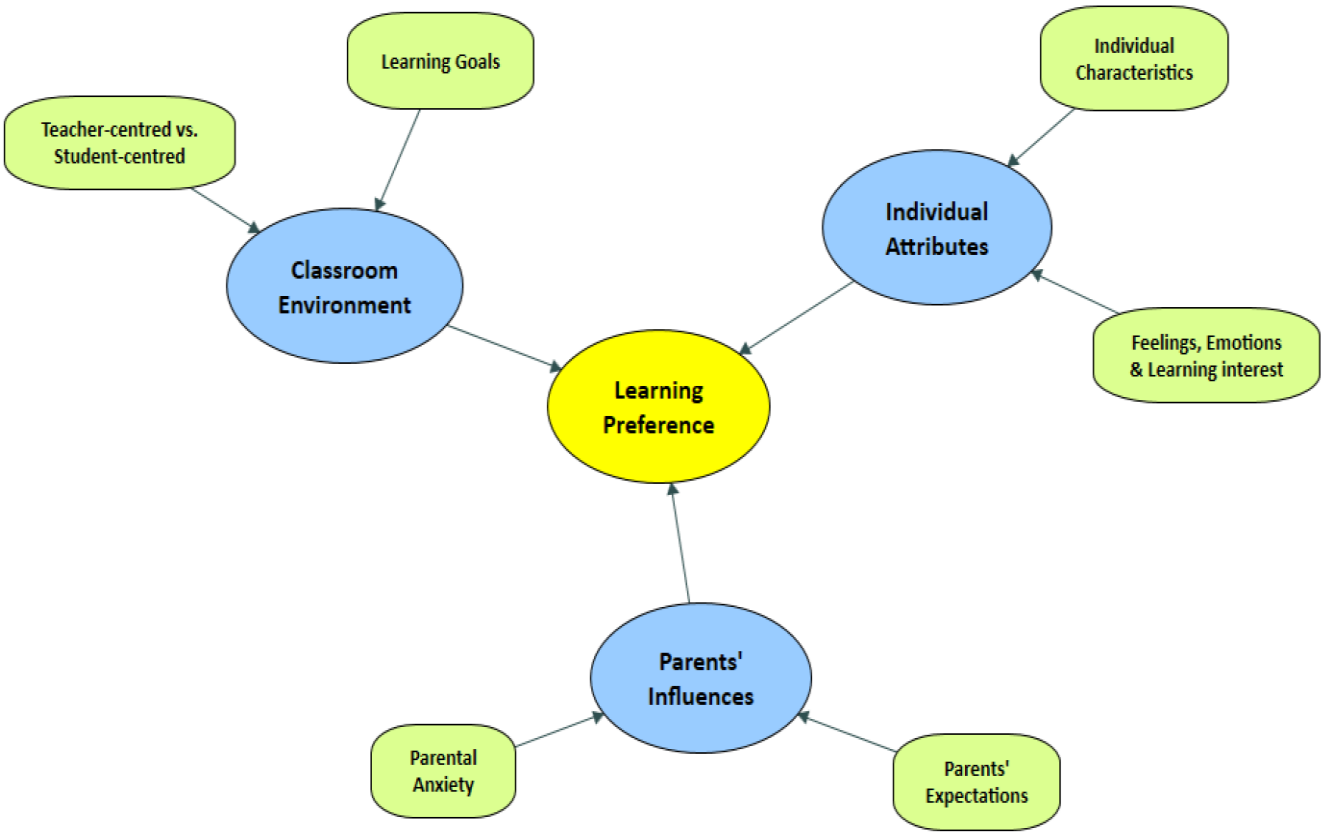
According to Clarke and Braun (2016) and Guest et al. (2011), thematic analysis has the following advantages: (a) its flexibility allows for use across a variety of epistemologies; as such, it may be most appropriate for a study with a mixed-methods design; b) through this approach to analysing the interview data, the researcher can expand the investigative range of participants' previous experiences. Meanwhile, rather than constructing a general description of the data, this analytical process is closer to mapping onto a more "theoretical" approach to generate a more detailed and explicit analysis of interview data from different dimensions (Clarke & Braun, 2016).

7.3 Findings: What Affects Chinese and UK Undergraduates' Learning Preferences?

Three themes were identified from the analysis of the interview transcripts: (a) classroom influences regarding a teacher-centred classroom compared to a student-centred classroom as well as learning goals; (b) individual attributes, including personality traits, feelings, emotions, learning motivations, and learning interests; (c) parents' influences, including parents' expectations and parental anxiety. Figure 10 presents a thematic map indicating the three themes with a series of related subthemes identified from the qualitative data, all of which are considered related to learning preferences.

Figure 10.

Thematic Map of Qualitative Findings



7.3.1 Classroom Environment

Classroom environment was identified as a theme related to learning preference, including teacher-centred/student-centred classroom and learning goals. Specifically, the first subtheme was associated with whether participants experienced classroom environment was teacher-centred or student-centred, while the second subtheme refers to participants' learning goals in their previous schooling time.

7.3.1.1 Teacher-Centred vs Student-Centred Classrooms are Differently Related to Learning Preference

Based on the present interview data, whether a classroom was teacher-centred or student-centred was thought of as relevant to students' learning preferences. Generally, Chinese and UK participants shared different classroom experiences. For Chinese participants, their experiences of previous classrooms had a strong teacher-centred tendency. UK participants, conversely, reflected that their classrooms were more likely to be student-orientated than curriculum-orientated. One UK participant gave an example describing their experience of classrooms as student-orientated,

> *"… it was kind of led by us as supposed to the teacher, and it is opposed to the teacher just telling us what to think… the way the classroom, like the class is organised, so how the teacher plans his lesson around students instead of around like a curriculum. So, he goes what do you want to do today? We've got a poem. What do you want to discuss about it? As opposed to saying we are going to discuss about this."* (B2X)

UK participants who frequently engaged in a student-centred learning environment believed that their learning interests and enjoyment might have been promoted. When talking about their feelings regarding learning in a student-centred classroom, some UK participants reflected that they felt more interested in classes using this approach because they could develop their own thoughts; one noted that in a student-led classroom,

> "*we formed our opinions and I found I did a lot better English than just kind of being told what to do in other subjects, cause I really don't develop my personal thoughts behind it. And I was more interested with regards to English."* (B1X)

In recent decades, a student-centred learning approach has become increasingly popular in many Western countries, while the traditional teacher-centred learning method has gradually faded into the background. Nevertheless, the concept of student-centred learning is not new. In ancient Greece, the philosopher Socrates emphasised students' important role when using questioning and dialogue methods: teachers help students solve problems by asking them questions (Loyens & Rikers, 2011; Tweed & Lehman, 2002). According to the UK National Curriculum, student-centred teaching is considered a core element and is required to be implemented throughout schooling (Department for Education, 2014). Students construct knowledge by themselves in a student-centred learning environment, and they are encouraged to select, understand, and apply new knowledge (Struyven et al., 2010). The role of a student is shifting towards actively participating in the learning process; at the same time, teachers' roles have also changed into becoming a facilitator: they

stimulate students to question and challenge, and encourage them to form their own thoughts (Beijaard et al., 2000; Pratt, 2008).

In a student-centred classroom, students are required to take responsibility for their learning; they need to monitor and manage their learning process themselves (Bostock, 1998; Martens et al., 2007). It has been suggested that in a student-centred environment, students tend to be more active and responsible for their learning (Cannon & Newble, 2000), and they establish deep learning and understand other students more thoroughly (Lea et al., 2003; Vermetten et al., 2002). Many studies have shown that student-centred teaching is the ideal way of teaching in that it promotes students' learning motivation, autonomy, and learning outcomes (Slavin, 2014, 2015; Johnson & Johnson, 2005, 2009). A student-centred classroom is, therefore, a welcome and favoured means of learning since it can foster students' interests in achieving learning objectives satisfactorily. It was surprising, therefore, that no matter which type of learning preference they identified with, all UK participants generally showed positive attitudes towards cooperative learning because student-centred learning was considered at the heart of cooperative learning (Johnson & Johnson, 2005, 2009). For these participants, their previous experiences of learning in student-centred classrooms seemed to contribute to cooperative learning preferences.

Chinese participants, in contrast, reflected that their learning process in the classroom centred around their teachers. For example, one Chinese participant expressed that "In fact, all the courses were like that teachers taught knowledge in the class, and we listened, practised, and took exams. … It mainly relied on teachers' teaching" (C3Y).

Chinese participants reported that when learning in a teacher-centred classroom, they normally had few opportunities to express their views or share knowledge with their peers. Usually, discussion during the class was discouraged by teachers and relatively against classroom order: students were required to keep quiet. The Chinese participants explained that their teachers might not have wanted students' interactions and discussions during the class. The teacher-centred classroom seems to challenge the core element of cooperative learning because student–student interactions are disfavoured and rarely seen in the classroom. Consequently, all six Chinese participants reflected that cooperative learning methods were almost never applied in their previous schooling. They also believed that students' learning should depend mainly on teachers' teaching:

> *"It should give priority to teachers' lecture, because they [students] haven't accumulated enough knowledge to let them to discuss… you [teachers] need to pour knowledge into students' brain, mainly because they [students] still need to gain knowledge, only when they have accumulated enough knowledge can they be able to think."* (C3X)

The Chinese teacher-centred classroom has been widely discussed in the literature. In a teacher-orientated classroom, the order is strictly governed by teachers, and students' learning relies considerably on their teachers' knowledge (Liu, 2006). For Chinese students, the stream of gaining knowledge passes along a one-way street from teachers to students, and teachers are considered the only source of knowledge in the classroom apart from textbooks (Roberts & Tuleja, 2008; Zhao et al., 2014). Scholars have also suggested that Chinese students value their teachers' opinions over their

peers' (Roberts & Tuleja, 2008). It would seem reasonable to conclude, therefore, that Chinese participants believed that their knowledge might not be enough to support classroom discussion since gaining knowledge from their peers was ineffective and gaining knowledge from teachers was the most effective way.

Moreover, Chinese participants considered cooperative learning less trustworthy and a problematic learning approach because they believed that a classroom needed to be dominated by teachers and not students. They further explained that if a classroom was led by students, students' autonomy and self-control would be questionable in this learning environment. A lack of teachers' monitoring and punishment could lead students to become indolent towards taking part in learning activities; simultaneously, bad habits could easily spread across the class. One participant argued that cooperative learning makes it "much more convenient for you to loaf on learning, and to slack off … some people may think cooperative learning is more relaxed since they can do less work" (C1X). While another participant observed that the cooperative learning classroom looked "quite nice", she noted that:

> "*… actually it [cooperative learning classroom] can be easily influenced by certain bad factors. I think when a group of people get together, students can be interactively influenced by good habits, but actually I think bad habits can spread more and more easily, or more rapidly. For example, let's say at the beginning, everyone may study hard together, and then one day suddenly some people start not doing their coursework, and then they may start to copy others' work, and this situation I think can easily spread."* (C3Y)

Previous research has asserted that a teacher's position in China is not merely that of a teacher: they are also widely thought of as models of correct behaviour (Scollon & Scollon, 1995). In Chinese classrooms, teachers are highly respected and considered the only authority by students, and students must conform to teachers' requirements. As a result, Chinese students often lack independence and autonomy (Soudien, 2006). It could be inferred that, with long-term experiences of learning in a teacher-centred classroom (i.e., the Chinese classroom), Chinese participants believed that teachers' monitoring and supervision necessarily guaranteed the learning process in the class. Hence, they tend to question learners' autonomy and self-control in a cooperative learning environment. These responses, meanwhile, could reflect the issue of the "free-rider effect" raised in cooperation. The unequal contributions of group members in group learning tasks lead to such an effect, whereby some take advantage of other group members' efforts to reduce the workload that they are expected to complete, but ultimately take credit for the outcome of the group work (Orbell & Dawes, 1981; Slavin, 1995). The free-rider effect in cooperative learning groups hinders learning achievements due to students' diffusion of responsibility (Slavin, 1995). Based on this logic, cooperative learning might be less favourable to the participants because they feel worried about these issues.

Chinese participants reflected that the teacher-centred learning environment in which they grew up lacked student–student interactions and communication (e.g., teamwork or group discussions) in the class. All six Chinese participants believed that the cost of group discussion was high, especially with respect to classroom learning. Therefore, cooperative learning was thought of as an ineffective and inefficient teaching and learning method by Chinese participants. For example, one participant claimed that

"learning individually is more efficient"; however, in terms of learning cooperatively with others, she expressed that:

> *"Due to different ways of thinking, different individual ability and everyone's understanding may differ, you need to initially communicate with others, and I think the cost is very high. You need to spend much time, and maybe you say a lot but your teammate may still not understand… or maybe he just want to insist on his own idea and don't want to follow your idea to do."* (C3X)

It is argued that when students are controlled to complete learning tasks, they may realise that the way of learning cooperatively with peers is redundant. This is because cooperative learning generally costs more in terms of time and effort than individual learning: thus, students rarely find immediate benefits when engaging in such a learning approach (Robbins, 2009). Due to abundant experiences of a teacher-centred learning environment, Chinese students may believe that the learning process needs to be controlled by and rely on teachers' teaching. As such, Chinese participants showed less preference for cooperative learning because they felt doubtful about learners' autonomy and self-control in such a learning process. They tended to question whether spending considerable time on student–student interactions was worthwhile.

In summary, learning in a teacher-centred vs student-centred classroom appears to differently influence students' cooperative learning preferences. For UK participants, a student-centred classroom that considers learners' interests and puts students at the centre of teaching and learning might make the learning process more enjoyable. A

student-centred approach is at the core of cooperative learning; hence, all six UK participants expressed positive attitudes towards cooperative learning. However, Chinese participants, who learned in a teacher-centred classroom, expressed concern regarding the use of cooperative learning because learners' autonomy and self-control may mediate guaranteed teaching quality. Teacher-centred teaching was considered the ideal method by all six Chinese participants. This discrepancy could be associated with the natural differences between these two learning environments. In a student-centred classroom, the learning process strongly emphasises students' self-regulation and monitoring, and the teacher tends to be a facilitator rather than an instructor. Conversely, in a teacher-centred classroom, students' learning is often determined by teachers, and the learning process relies significantly on teachers' teaching. Thus, when applying cooperative learning techniques, it is essential to consider students' previous learning experiences regarding teacher-centred or student-centred classrooms since these experiences seem to affect their understandings of such a learning approach. For Chinese students, as they are most likely to learn in teacher-centred classrooms, it could be necessary to clarify students' roles in a cooperative learning classroom, particularly in terms of addressing their potential worries and misunderstandings concerning students' self-regulation.

7.3.1.2 Learning Goals and Learning Preference

Both Chinese and UK participants related learning goals to learning preferences, believing that what they expected to achieve from learning played a pivotal role in influencing their learning preferences. However, both groups expressed different

understandings of learning goals. Chinese participants reflected that their learning goals strongly correlated with achieving higher grades and entering "good" universities. They emphasised that they learned to receive higher grades in the Gaokao (the Chinese national higher education entrance examination). Chinese participants further explained that this might be because whether a Chinese student could enter a good university is entirely determined by their performance in this exam. One participant noted that:

> *"After all, from primary school to high school, learning is for the purpose of getting into a good university, for the Gaokao … No matter the Zhongkao (Chinese entrance exam for high school) or the Gaokao, at the end it is always depended on the rank and the grade line, hence during that time, actually your aim is to enter a good university."* (C1X)

Perhaps due to the strong inclination to learn for grades, Chinese participants argued that cooperative learning was a less effective means of achieving their learning goals. While they observed that cooperative learning would likely benefit a student's life in the long run, it is less likely to help improve exam grades. They argued that to achieve higher grades, the knowledge they gained from primary school to high school was driven mainly by exams, and learning was in pursuit of the right answer and highly associated with exam-taking skills. Chinese participants explained that:

> *"But the Gaokao… it needs longer time to learn. If you keep exercising individually, you can have already done a lot… maybe cooperative learning can be valuable for your whole life, but it is useless to improve your exam*

grade." (C1X)

"You need to focus on exam grades, and gained knowledge is more related to exam, and exam-taking skills are therefore more emphasised in order to get good grade… learning is in pursuit of the right answers… grade means everything." (C3Y)

Chinese participants were also concerned that cooperative learning seemed to be less efficient and even a waste of time because this learning approach requires a significant amount of time to design activities and arrange tasks for each student. They explained that as the Chinese education system is exam-driven, primary school to high school learning must focus on efficiency and effectiveness in achieving high grades. In this sense, the Chinese participants believed that cooperative learning could not be as efficient as competitive learning with respect to achieving high grades in exams. As opposed to cooperative learning, they shared the consensus that competitive learning helped to improve grades, despite identifying with different learning preferences and, for some, finding the prospect of learning in a competitive environment uncomfortable. For example, one Chinese participant who identified with cooperative learning preferences admitted that she did not enjoy competition in learning. However, she believed that competitive learning might best improve performance in examinations, whereas cooperative learning might be less effective "because teamwork often means a waste of time… it normally costs a large amount of time to make plan and arrange." (C1X).

Overall, the Chinese participants' learning goals seem to be associated with the desire

to achieve high grades in examinations. In this regard, they tended to consider cooperative learning as a less efficient and effective way of achieving their learning goals and, as such, showed less inclination towards a cooperative learning approach. In addition, Chinese participants showed positive attitudes towards competitive learning because this learning approach was deemed as a way to improve exam scores. These findings appear to reflect the exam-driven education system in China. Since the 1980s, several Chinese educational reforms have been implemented to promote school efficiency and economic development (Zhao et al., 2014). As a critical part of Chinese pedagogy, "competition mechanisms" were introduced in secondary education to improve Chinese people's competitiveness. As early as the 13th century in ancient China, succeeding in the imperial examinations would result in a high position and considerable wealth. Today, in contemporary Chinese society, the Gaokao is pivotal in determining one's fate because attending higher education institutions is one of the most critical opportunities for social mobility (Annunziata et al., 2006). Ross and Wang (2010) argued that, for students who come from rural or remote areas, the Gaokao could be their only way to access higher education, obtain city residency, and get a decent job. In recent decades, the Gaokao has been used as the single criterion of higher education entrance requirements. Consequently, schools, parents, and students tend to focus on improving exam scores.

When talking about their learning preferences, Chinese participants' evaluation and attribution tended to be related to their exam-orientated learning goals. With such an emphasis on learning for grades, it is not surprising that Chinese students may not see the benefits of cooperative learning; instead, they appreciate competitive learning as it is thought to promote exam grades best. According to Clark et al. (2007), although

Chinese students may acknowledge the positive social elements of cooperative learning, they often neglect its educational value as proposed by many Western scholars because the Chinese competitive pedagogy consistently highlights the importance of grades. Volet and Ang (1998) noted that Chinese students tend to cultivate a preference for assessment based on individual performance that reflects their individual efforts and abilities. At the same time, Chinese students might have a negative opinion of group work, especially when such work requires a group mark. Moreover, scholars have suggested that the competitive Chinese education system has led to a greater competitive and individualistic spirit in Chinese students, which further hinders their inclinations towards learning cooperatively (Cortazzi & Jin, 1996; Nguyen et al., 2006). The Chinese exam-orientated education system shapes students' learning goal towards being strongly related to grades (especially when grades are frequently derived from relative positioning). Therefore, students might prefer competitive learning or, at least, consider it the most efficient way to learn since their learning goals are driven by grades.

The UK participants also indicated that learning goals were associated with learning preferences. However, unlike their Chinese counterparts, whose learning goals were grade-driven, UK participants related learning goals to all-around development. They portrayed this learning goal as comprising three aspects: wellbeing, creativity, and socialisation.

First, the UK participants regarded the development of students' wellbeing as an essential learning goal that should be particularly noted during the learning process. For example, UK participants believed that competitive learning was unhealthy and

problematic in terms of students' wellbeing. As such, they did not want to learn in a classroom employing such an approach, as highlighted by one participant: "in terms of wellbeing … the methods of classroom B [competitive learning scenario] are quite problematic … I don't think that is a healthy environment to be in, and I don't want to be in it" (B3Y).

In terms of the cooperative learning environment, however, UK participants portrayed that:

> "*… I get the impression that the environment in the classroom [cooperative learning] is quite positive. And that I just like the cooperation and people helping each other… When you're talking to each other and you're helping each other, there is not much negativity being passed around. It just feels quite peaceful… I've had good experiences and I haven't felt left out …*". (B2Y)

They, therefore, argued that cooperative learning created a "more comfortable and healthier learning environment", contributing to "the development of students' emotion and wellbeing" (B2X). This finding aligns with many previous studies that have shown that cooperative learning contributes to the positive development of learners' wellbeing because of its positive effects on learners' social and psychological development (Slavin, 1987, 1995, 2014; Johnson & Johnson, 2005). According to Johnson and Johnson (1989, 2005, 2009), working cooperatively with others and valuing cooperation could lead to better psychological health and higher self-esteem of students than learning competitively or individualistically. Meanwhile, in a cooperative learning classroom, students learn how to build trust, repair hurt feelings,

and better understand peers' perspectives (Johnson & Johnson, 1999).

Second, UK participants considered creativity an essential part of their learning goals. They reported that cooperative learning was related to creative work, by which students' creativity development would be promoted. Individualistic learning, however, was thought to limit students' development of creativity. One participant claimed that individualistic learning "really limits creativity and learning" and misses "the point of what learning is about" (B1X).

Research has suggested that cooperative learning is conducive to the development of learners' creativity because it provides a platform where higher level reasoning and the generation and exchange of new ideas are frequently available (Johnson & Johnson, 2005; Slavin, 1995, 2014). Johnson and Johnson (2009) argued that cooperative learning promoted creative thinking compared with competitive and individualistic learning. In accordance with previous studies, individualistic learning may have been disfavoured by UK participants due to its neglect of students' creative development, whereas cooperative learning was preferred since it can contribute to the development of learners' creativity.

Third, socialisation was thought of as a critical learning goal by UK participants. Socialisation and social skills were considered crucial aspects of students' individual development expected to be achieved from classroom learning. UK participants expressed that a cooperative learning approach provided an ideal platform that benefited students' socialisation development:

> *"You don't just learn what you're trying to learn, you've done from the other people, and you learn their perspective on what you're learning as well. So, there's sort of a wider social learning which happens when you work collectively in a group way, whereas as opposed to competitively in an individual way."* (B1Y)

UK participants explained that they preferred cooperative learning because this learning approach benefits students' socialising skills. In contrast, the participants exhibited negative attitudes towards a classroom where social interactions were hardly seen. For instance, an individualistic classroom was disfavoured because it disregards social interactions: one UK participant expressed that such an environment "has a lot more cons over the others because the others allude to social interactions of some sort and social learning … I think that's crucial" (B2Y).

Scholars have observed that cooperative, competitive, and individualistic learning approaches focus on and create different social interactions (Johnson & Johnson, 1989, 2005). Cooperative learning focuses on positive interactions in the classroom, whereas competitive learning often generates negative interactions. Meanwhile, no social interaction exists in individualistic learning contexts (Johnson & Johnson, 2005). Many studies have suggested that cooperative learning contributes to students' development of socialisation and social skills by creating the opportunity for positive interactions in the classroom (Johnson & Johnson, 2005, 2009; Slavin, 1995, 2014). Indeed, when working in cooperative learning groups, students learn to develop new concepts in language, share their thoughts with peers, and communicate in a socially

acceptable way. Cooperative learning can promote skills such as effective communicating, leadership, and dealing with conflicts (Slavin, 1987, 2005, 2014). Compared with competitive and individualistic learning, cooperative learning is thought to enhance supportive and accepting relationships among students, contributing to effective socialisation and social development (Johnson & Johnson, 1999, 2005). Consistent with previous studies, UK participants highlighted the possible benefits of socialisation development in cooperative learning and thus showed positive attitudes towards cooperative learning. The development of social skills is essential because these skills help students perform better academically, succeed in the workplace, and play positive and optimistic roles in society (Chernyshenko et al., 2018). Therefore, applying a cooperative learning approach may have significant educational value because it helps students better adapt to society and succeed in life and at work.

In addition, UK participants also considered the acquisition of knowledge a critical learning goal. They reflected that knowledge gaining was not necessarily equal to getting higher grades. UK participants frequently described cooperative learning as an ideal way to facilitate students' learning and contribute to their knowledge gaining. As opposed to Chinese participants' opinions, which posited that group discussion and learning from peers might be meaningless, the UK participants emphasised the benefits of cooperative learning throughout the interviews. They indicated that through cooperative learning, students could share their opinions and have critical discussions with their peers, by which students could learn better and more:

"Classroom A would be that you actually work with your peers, you get their

opinions, their information, and what they think as well as what you think from your age perspective… so not only do you get teacher's classroom like information, you also get a whole variety of different people like contributing to your knowledge … You might not even think someone has a different opinion about something. And if they are allowed to discuss it and discuss it with you, and you say: 'That's interesting, I never thought of that.' You've now got a whole different standpoint in which you can like critically analyse something." (B2X)

Moreover, UK participants argued that via cooperative learning, students could accumulate ideas from the whole class and engage in healthy debates with their peers. Learning was, therefore, enhanced through iterative knowledge extraction, processing, and exchange:

"Collective task promotes like healthy debate and exploration of the subject… so then you'll be able to draw upon like more aspects, which will just enhance learning, because you'll firstly have behaving to listen to other people think then you'll have your input. And then you come to conclusion and inside, I guess I economise a bit of just asking Google the answer, which you remember for not very long." (B1X)

Studies have suggested that in a cooperative learning environment, students are required to reach a shared group goal, which produces higher achievement and greater productivity than working individualistically (Johnson & Johnson, 2005, 2009).

Verbal communication in cooperative learning plays an essential role in helping team members deepen understandings, construct new thoughts, and deal with different views on a learning task or problem. For example, cooperative learning encourages learners to examine (and re-examine) their understanding and explain knowledge so that peers can understand and apply that knowledge. Therefore, students using cooperative learning often gain knowledge more efficiently than they do by themselves (Bargh & Schul, 1980; Wittrock, 1989; Slavin, 1995). Watkins et al. (2007) argued that when students explain their understandings to each other, they can enrich their knowledge: this way of learning consolidates learners' understanding. The current findings support those of previous studies, indicating the advantage of cooperative learning regarding more robust knowledge gaining.

According to Jones and Isroff (2005), numerous benefits can be obtained when students collectively interact with one other to learn, including positive emotions and strong motivation, by which their engagement in learning activities is strengthened. Cooperative learning asks students to take responsibility for each other's learning success, which facilitates learners' sense of belonging and ownership (Young, 2011). Additionally, through frequent communication and knowledge exchange, students' learning and social development can be promoted (Johnson & Johnson, 2005, 2009). It was, therefore, not surprising that UK participants in this study generally showed positive attitudes towards cooperative learning because this learning approach was most likely to enable the achievement of their learning goals from both an academic and a non-academic perspective.

Despite this preference towards cooperative learning and experiences of a primarily

cooperative learning environment, some UK participants reflected that the UK's education system and learning environment was competitive at its heart, especially in terms of GCSEs (General Certificates of Secondary Education) and A-levels (advanced level). One participant argued that,

> *"Classroom B [competitive learning] … being what's currently sort of prevalent in the UK or my own experiences at Sixth Forms … I found that there was a competitive element and students were very much encouraged to compete … which I think is very much at the heart of learning environments at the moment in this country."* (B1Y)

The participants observed that as the UK learning environment became competitive, so too did their learning goals change to become driven by exams and grades, thereby influencing how they evaluate different learning approaches. In particular, UK participants highlighted that the influence of GCSEs and A-levels was vital in terms of their learning goals. In the UK, GCSEs are the primary qualification taken by students at the end of secondary school, and A-levels are officially defined as advanced exam courses in preparation for university acceptance. UK participants argued that their learning had become more competitive and grade-driven in accordance with the UK's GCSEs and A-levels system:

> *"With classroom B [competitive learning] … there's this sort of drive towards getting the grade … say, doing Biology A-level … there's a very competitive environment of who's getting the top marks, etc. … and that was very much driven by the grade."* (B1Y)

As national entrance exams for higher education, A-levels are significant for UK students; in turn, their learning goals tend to become exam-orientated. Much like the Chinese participants' perspectives, some UK participants (especially those who identified with a competitive learning preference) considered cooperative learning as a less effective means of obtaining good grades than competitive learning. They explained that this was likely because cooperative learning often required more time to design, arrange, and implement corresponding classroom activities. In contrast, competitive learning was a more effective way to learn, especially when learning goals were related to better performance in examinations. UK participants with competitive learning preference explained that, via competitive learning, students could focus on practising questions, which improved exam scores effectively:

> *"The cons [of cooperative learning] is that it takes a lot longer to … if you're going with the curriculum as it would take longer to actually get the creaking down to learn stuff … all the activities based around social stuff would take longer, because people are talking … If you've got a goal, you've got very set goals, you got motivation and it's [competitive learning] fast and it's efficient."* (B2X)

Scholars have argued that the influence of UK education policies directed towards an outcome-orientated education has led to a greater emphasis on assessments that gauge students' learning and development (Au, 2011). An "audit culture" in the UK education system could result in pressure to achieve high grades in vital examinations, such as GCSEs and A-levels (Romme & Soan, 2019). In the UK, schools take

responsibility to help students achieve strong academic outcomes while also looking after their wellbeing, which may lead to a conflict regarding public examinations. Furthermore, students' performance in GCSEs is related to a range of outcome-based school performance indicators in the UK (Strand, 2006). Data from GCSEs are used to assess UK schools, and, as such, students' performance at Key Stage 4 (the final two years of compulsory schooling in the UK) has become significant not only for the students themselves but also for teachers and schools (Connolly, 2006). Denscombe (2000) asserted that UK students' success or failure in public examinations is critical in shaping their future life trajectory because it is related to the opportunities of access to further education or occupations.

In the present study, all six UK participants mentioned the potential benefits of cooperative learning in that it supports students to gain knowledge more effectively. However, when relating their learning goals to public examinations, UK participants' learning goals appeared to mirror those of their Chinese counterparts by becoming exam-orientated and grade-driven. Hence, UK participants might appreciate competitive learning because it may contribute to higher grades. For example, one participant spoke positively about a competitive learning environment, noting that it would involve "just practising questions and seeing what you get. So it's quite an effective method" (B2Y).

Studies concerning the possible influences of different learning requirements on students' learning goals and learning preferences are scarce in the literature. Nevertheless, Volet and Renshaw (1996) found that different courses' learning requirements influenced both Chinese and Western students' learning approaches

considerably. In this sense, this study's findings signify that when Chinese and UK students face the exam-orientated requirement of entering higher education, their learning goals change accordingly to become grade-driven, regardless of the cultural and educational differences between China and the UK. When learning goals are associated with well-rounded development, cooperative learning may be more preferred than other approaches since it benefits learners' all-around development, encompassing wellbeing, socialisation, and creativity. However, student's learning goals become driven by grades to meet the requirement of public examinations. Thus, they tend to prefer competitive learning more than cooperative learning due to its high effectiveness in helping them to achieve higher grades.

7.3.2 Individual Attributes

According to the interview data, the second theme concerning participants' learning preferences is individual attributes, which encompasses learners' characteristics and their feelings, emotions, and learning interest.

7.3.2.1 Learners' Characteristics May Be Related to Learning Preferences

In this study, Chinese and British participants related their learning preferences to individual characteristics. Participants' responses to the possible influence of students' individual characteristics on learning preferences can be understood from two main perspectives: SVO and intro/extroversion.

Firstly, participants believed that students with different value orientations could differ in their learning preferences. Chinese participants reflected that competitive students tended to prefer competitive learning and that competitive learning could be more effective for students who have a strong inclination towards competition. Their responses indicate that students with a competitive value orientation might consider the learning environment as win or lose situation whereby they seek the top rank and avoid being left behind. For example, one Chinese participant identifying with a competitive learning preference considered herself a competitive learner, noting that when she performed relatively poorly, and her "learning state is not good", her rank will, in turn, be "very low", leading to feelings of sadness (C2Y). She argued that competitive learning "of course is most effective for some students who are relatively more competitive and emulative" like herself.

Similarly, UK participants proposed that students who were natural competitors might better adapt to and survive in a competitive learning classroom, although they explained such an influence based on their perceptions of other students rather than themselves. For example, one participant observed that "competitive individuals wouldn't thrive" in a cooperative learning environment, suggesting that they would need a "different environment like classroom B [competitive learning environment] at a more direct of an approach" (B1X).

In addition, participants who believed that they were not competitively value-orientated expressed a relatively negative attitude towards competitive learning. A Chinese participant who identified with a cooperative learning preference (based on

her survey responses) expressed that she was not a competitive student, and hence she might refuse to engage in learning activities using competitive learning or those involving competition. These findings are consistent with the core element of competitive learning: students can achieve their learning goals if, and only if, they outperform their peers (Johnson & Johnson, 1991, 2005). A competitive value orientation appears to play an essential role in influencing Chinese and UK students' learning preferences and seems to resonate particularly with natural competitors' value orientations.

Meanwhile, participants also reflected that learners with an individualistic value orientation might prefer learning independently. One Chinese participant, who identified as having an individualistic learning preference, expressed that she wished neither to "be influenced by others" nor to influence them due to her individualistic character. Instead, she preferred an individualistic learning approach that allowed her to control the learning outcome fully, claiming that since learning preferences are "associated with personality", she preferred to learn freely and independently in a situation where "both good and bad [results] are determined by myself" (C3X).

Theoretically, people with an individualistic value orientation prefer to maximise their personal gains and disregard others' situations in a range of contexts (Bogaert et al., 2008; Murphy et al., 2011). In education settings, people with individualistic learning preferences tend to focus solely on their own learning achievements and have no interdependence with others (Johnson & Johnson, 1991, 2005). In this sense, individualistic learning is in line with an individualistic value orientation and would thus be preferred by naturally individualistic people.

In summary, based on the Chinese and British participants' reflections in this study, SVO may be related to learning preferences. Indeed, many previous studies have equally shown that people with competitive learning orientations are thought to be natural competitors who frequently take most situations as "win or lose". Those with an individualistic value orientation, however, often care only about their achievements and ignore others' situations (Smeesters et al., 2003; Van Lange, 1999; Murphy & Ackermann, 2014). Students with a competitive value orientation prefer competitive learning, while those with individualistic value orientations tend to have individualistic learning preferences. The current findings are, therefore, at least partly consistent with previous research findings and with those of Studies 1 and 2: that is, competitive and individualistic value orientations may be related to a preference towards competitive and individualistic learning approaches, respectively. It could be inferred that learners' individual differences in SVOs might further affect their learning preferences. It may be suggested, then, that to better support students in achieving learning goals and promoting their learning engagement in the class, their individual differences are worth considering.

Secondly, both Chinese and UK participants believed that whether students aligned with introversion or extroversion might influence their learning preferences. UK participants reflected that introverted students might find it challenging to engage in cooperative learning activities, such as group discussion and group work on learning tasks, due to their shyness. For instance, one UK participant identifying with an individualistic learning preference recalled that she was too shy to talk with other peers in a group discussion:

> *"I mean, I was very shy, very shy, and I barely talk to anyone … especially in school because I felt quite a lot, like, pressure … I do prefer not to talk to others … because I was really shy, I didn't really speak that much, um, so in a way, I did prefer it that we were independent."* (B3Y)

Introversion seems to be a barrier for students' communication or interaction with their peers and thus could hinder their engagement in cooperative learning. As such, introverted students may feel hesitant or even under pressure to express their opinions to other peers. According to Fairhurst and Fairhurst (1995), extroverted people are more likely to share ideas with others and tend to gain new knowledge via talking and discussing in learning environments. In contrast, introverted people tend to avoid interactions with others and prefer processing information without interruption. They often do not want to take the risk of discussing their knowledge with peers. Ramsay et al.'s (2000) findings provided evidence to support such relationships. Based on a sample of 132 first-year undergraduates, the authors studied whether introversion and extroversion were related to students' preference for classroom activities using cooperative learning. Their study concluded that extroverts showed more preference towards group presentations than their introverted counterparts. Ahour and Haradasht (2014) posited that extroverted students had a strong tendency to engage in group work. These extroverts also performed better in cooperative learning groups than in a competitive group. In Laubengayer's (2018) study, although the quantitative results did not find a pattern favouring extroversion over introversion while working cooperatively, the qualitative findings suggest that more introverted participants disfavoured a cooperative learning classroom (whole-

class lecture), whereas participants who identified as extroverts preferred cooperative learning. In the present study, participants' responses appear to resonate with other scholars' findings that extroverted students prefer collaborating with peers. Introverted students, however, might feel more comfortable when working by themselves. This study adds to the literature proposing that whether students align with introversion or extroversion could be associated with their learning preference.

For Chinese participants, introversion was considered related to students' preference for competitive learning. More specifically, Chinese participants emphasised some difficulties that introverted students might face when learning in a competitive environment. They explained that introverted students felt uncomfortable in a competitive learning environment, as they do not want to lose face when they did not perform well in the examinations:

> *"I think many of them [students]… especially introverted girls, I'm kind of extroverted, I think introverted girls may tend to have this [disliking of competitive learning] … they will feel losing face very much, they are more likely to feel like everyone around them is laughing at them because they don't get good grades."* (C2X)

It can be understood that, for the sake of avoiding losing face, students align with introversion tend to disfavour engaging in competitive learning. A range of studies have argued that traditional Chinese "face" culture is pivotal in influencing Chinese learners' classroom performance (e.g., Hwang, 1987; Bond, 1996; Chang & Holt, 1994). According to Hwang (1987), Chinese face culture can be understood from two aspects:

avoiding embarrassment and seeking respect in different social contexts. In education settings, the value of face is associated with students' behaviours in the classroom. Chinese face culture is related to the need for social acceptance and recognition in the group, and Chinese people always strive to maintain their face (Hallahan et al., 1997). Therefore, losing face is thought of as a severe issue in the Chinese classroom that students should evade at any cost (Hofstede, 2001; Hofstede et al., 2005). To keep their face and avoid losing face, Chinese students hesitate to take part in cooperative group work (e.g., group discussions). They do not want to take risks to express their ideas: if they express incorrect points of view in public (e.g., in a classroom), they will lose face (Hwang, 1987; Hwang et al., 2003). The present study's findings seem to support this notion. To avoid losing face when receiving a low rank, Chinese students may refute a competitive learning environment because ranking is usually available for the whole class. It seems, therefore, that introversion, intertwined with Chinese face culture, may be related to students' dislike for competitive learning.

In summary, the Chinese and British participants' responses in this study suggest that whether students align with introversion or extroversion may be associated with learning preferences. However, the ideas behind this influence seemed to differ between Chinese and UK students. UK students believed that introverted students might less favour cooperative learning because their shyness makes them hesitant or nervous about expressing and discussing opinions with peers. Chinese learners, influenced by Chinese face culture combined with risk-avoidance culture, indicated that introverted Chinese students were less likely to prefer competitive learning because they seek to avoid the potential risks of losing face. This difference between the UK and Chinese participants' beliefs in this research is relevant because it has been

widely argued that individual characteristics are strongly associated with learners' learning preferences and behaviours. Nonetheless, the ways people reflect on this relationship could vary in different countries with different underpinning cultures.

7.3.2.2 Students' Feelings About and Interest in Learning May Play a Role in Relation to Learning Preferences

Throughout the interview, students' feelings and emotions were frequently discussed by UK participants (five out of six) in relation to learning preference; however, they were rarely reported by Chinese participants.

UK participants posited that students' feelings, emotions, and learning interests were significantly related to learning preference. They expressed that students engaging in different learning environment might accordingly have different feelings and emotions. The British participants suggested that cooperative learning could contribute to a positive classroom atmosphere and an enjoyable learning environment, leading to students' positive feelings and emotions and the promotion of their learning interest. They reflected that, learning as a group, students would feel comfortable and less stressful in helping and cooperating with their peers:

> *"So, if classroom A [cooperative learning classroom] I just think it somewhat pass through the environment when you're working over people. And you'd feel a bit more comfortable when everyone is working together and helping each other. Um, I think I feel quite comfortable being there and I wouldn't feel like stressed or anything."* (B2Y)

In contrast, UK participants indicated that a competitive learning approach would lead to negative feelings and emotions and greater stress. Thus, a competitive learning classroom was thought of as an unhealthy environment since competitive learning has the potential to produce tremendous pressures for students that may, in turn, harm their wellbeing and effectuate mental health issues. Indeed, a student facing the pressures of striving for higher grades could hardly enjoy the learning process or feel interested in achieving learning goals. UK participants believed that these negative feelings would lead to a dislike for competitive learning, with one participant noting that due to the competitive classroom's "issues in terms of wellbeing", its methods are "quite problematic" (B3Y).

Meanwhile, there were variations in the relationship between learners' feelings and emotions and an individualistic learning preference. One UK participant with a cooperative learning preference expressed strong negative feelings about classrooms with an individualistic learning environment, arguing that this learning approach ultimately discouraged her learning. However, those UK participants identifying with an individualistic learning preference claimed that learning in an individualistic learning classroom could make students feel less pressure due to less group work. One participant posited that using an individualistic learning approach would create a "relaxing" environment because it eliminates the pressures of having to talk to others because "no one was talking and everyone was quiet, and it's nice and relaxing" (B2Y).

Overall, then, UK participants' feelings, emotions, and learning interest seem to be associated with their learning preference. When students have positive feelings

towards learning, they tend to feel interested in and wish to engage in such a learning environment. Conversely, when students have negative feelings in a learning environment, their learning interest and preference are influenced as such. Previous research has suggested that learners can receive positive feelings and emotions via a collective way of interacting with others to solve learning tasks or problems (Jones & Isroff, 2005). Cooperative learning provides a positive and comfortable learning environment (Young, 2011) and fosters positive interpersonal relationships to facilitate students' learning interest (Johnson & Johnson, 1999, 2005). Consequently, in a cooperative learning classroom, learners' willingness to take part in learning activities and their interests in investing energy and efforts in learning would be enhanced. Scholars have noted that students in an environment using cooperative learning have reflected that this method can increase their interests in learning and help them actively engage in the class (Fennel, 1992; Sahin, 2010).

Furthermore, since cooperative learning provides learners with positive experiences and feelings regarding group work, their self-direction and autonomy may be promoted in turn (Brindley et al., 2009). A strong sense of autonomy is vital because it helps students share ideas and collaborate with their peers during group work, providing ample scope for them to obtain group working goals and better engage in discussion (McLoughlan, 1998). Hence, students frequently engaging in cooperative learning tend to cultivate a preference (or predisposition) towards cooperative learning (Johnson & Johnson, 2005). Moreover, many empirical studies have found that a competitive learning environment can lead to students' negative feelings, while individualistic learning tends to make learners lonely and isolated (Crandall, 1982; James & Johnson, 1988; Johnson et al., 1986). Smith and Biddle (2008) explained that

in a competitive learning environment, students might lose interest and feel disengaged since the pressure of competition compromises their autonomy. Thus, competitive and individualistic learning could lead to a loss of students' learning interest and an increase in the risk of psychological disorders and wellbeing issues (Johnson & Johnson, 1989, 2005).

Concerning the Chinese participants, only one identifying with a cooperative learning preference expressed that cooperative learning could build a positive classroom atmosphere, wherein students might feel comfortable and enjoy themselves. Nevertheless, the participant also observed that in a cooperative learning classroom, "the classroom atmosphere is active; it seems to be playing rather than learning", and although "strong competitiveness may lead to high pressure", it may result in a better learning outcome (C1X). It can be inferred that since the Chinese competitive learning environment highlights the importance of improving students' competitiveness and competence, Chinese students' feelings and learning interest may be less emphasised.

To sum up, the current findings support those of previous theoretical and empirical studies: different learning environments can affect learners' feelings towards and interest in learning in different ways. Thus, students vary in their attitudes and preferences towards the three types of learning approaches. Findings indicated that no matter which learning preference they had, all six UK participants believed that positive feelings such as comfort and enjoyment could be gained in cooperative learning contexts. Competitive learning, however, may lead to greater pressure and a reduction in learning interest. In this sense, cooperative learning seems to meet students' needs best because it can create a positive learning environment that

contributes to students' learning engagement. Participants with cooperative learning preferences appreciated the positive feelings they gained from the cooperative learning approach, which was thought of as considerably related to the formation of their learning preference. At the same time, they also reported negative attitudes towards competitive and individualistic learning approaches due to the negative feelings perceived from these two environments. For participants who identified with an individualistic learning preference, meanwhile, individualistic learning tended to be considered as a relaxing approach because it does not require students to interact with each other. Thus, the characteristics of an individualistic learning approach seem to fit well in their preference for learning independently.

7.3.3 Parents' Influences

While Chinese participants proposed a relationship between their parents' influence and their learning preferences, none of the UK participants implied such a direct connection. Some of them noted that their parents enabled them to receive a high-quality education in private schools, where teachers are often warm-hearted and supportive and frequently apply cooperative learning techniques to create an enjoyable learning environment. However, Chinese participants identifying with a competitive learning preference reflected that their parents' influence, including their expectations and anxiety, may have promoted their competitive learning preference but was not related to cooperative or individualistic learning preferences.

7.3.3.1 Parents' Expectations

Chinese participants identified as having competitive learning preferences highlighted how their parents' parenting might be related to their learning preference. They expressed that their parents' expectations motivated them to succeed in learning, strongly driven by exam grades and rankings. It seems that their parents' emphasis on achieving higher grades and comparing their ranks with their peers' might develop students' strong competitiveness as well as their preference for learning competitively. One participant reflected that:

> *"From primary school to high school, my parents always expected me to get higher rank. If I got fifth in the exam, they might expect me to get third, and when I reached the third rank, they would expect me to be the first, so it was always like this. And when I was in the second year of high school, my parents had particular expectations on me… They (the participant's parents) expected me to go to better universities, they might search information on my interested major, and which university could be better in this field, and afterwards they might say you should not only focus your target university, you should work hard to enter the better university."* (C2X)

Many studies support the notion that parents' expectations strongly affect their children's learning (Davis-Keen, 2005; Pearce, 2006; Vartanian et al., 2007). In addition, parents' engagement in students' goal setting could be related to their learning success (Locke & Latham, 2002). Parents' high expectations have been thought to be

related to students' learning motivation, their willingness to enter universities, and their overall academic achievement (Benner & Mistry, 2007; Peng & Wright, 1994). Chinese parents are globally known as "pushy" parents (Ellicott, 2013). According to Chao (1994), Chinese parents have been considered authoritarian from ancient to modern times. There is an ancient Chinese idiom that "parents wish their sons would become dragons and their daughters would become phoenixes" (望子成龙，望女成凤), which reflects Chinese parents' high expectations of their children. It has been suggested that Chinese parents' concern about their children's future is a driver for students' competitive pressure (Zhao & Selman, 2014). Even outside the Chinese competitive learning classroom, Chinese parents' expectations might push students to succeed in learning. The current findings are in line with those of previous studies: namely, Chinese parents' expectations of their children succeeding in a competitive learning environment (i.e., gaining higher grades and rank) might be a critical influence for Chinese participants with competitive learning preferences. On the one hand, competitive learning may bring pressures for Chinese students, but on the other hand, it could motivate them to engage in a competitive learning environment.

7.3.3.2 Parental Anxiety

Under the significant pressure from the competitive learning environment, Chinese parents might be especially sensitive about their children's exam performance. Chinese participants with competitive learning preferences expressed that their exam results determined their parents' feelings and the family atmosphere more widely. When they received high grades and ranks in exams, the whole family would be optimistic and positive. However, underperforming in exams could lead to their

parents' negative feelings; in turn, the family atmosphere would become depressing. They believed that such invisible pressure from their parents motivated them to put more effort to learn and pushed them to compete with others:

> *"…during my Senior Three (the last year of Chinese high school), the whole family atmosphere was all determined by my exam results. Taking mock exams as an example, family atmosphere was closely related to my grade. When I did well in the exams, the whole family would brighten up… and there was a time I might not perform well and only ranked the twelfth… my parents became very worried about me. They didn't speak out their worry directly, but I could feel my family atmosphere is changed – they didn't talk and became depressing, but, for me, this is another kind way to motivate you to put more effort to learn."* (C2X)

Chinese participants' responses indicate that when they did not get good grades, their parents felt anxious, which might further affect their learning. Previous studies have shown that Chinese parents tend to have high-level parental anxiety regarding their children's academic performance and competition in the future labour market (Lin, 2006; Paine, 1998). In particular, the annual Gaokao is widely considered to decide their children's fate, which compounds Chinese parents' substantial anxiety (Zhao & Gao, 2014). This parental anxiety places much academic stress on their children. Furthermore, the Chinese one-child policy introduced in 1979 seems to further intensify parents' anxiety regarding their children's educational attainment (Zhao et al., 2015). In the present study, Chinese participants' responses reflected that parental anxiety pushes and drives them to succeed in a competitive environment, which might

contribute to cultivating competitiveness.

In summary, for Chinese participants who identified with a competitive learning preference, their parents' expectations and anxiety appear to be closely related to the competitive ethos in Chinese education settings. Students are expected to get higher grades and ranks to enter qualified universities. Hence, it is reasonable to infer that Chinese participants' competitive learning preferences may be a consequence of their parents' influences.

7.4 Summary of Findings

Overall, the results showed that Chinese and UK participants attributed their learning preferences to three themes: classroom environment, individual attributes, and parental influence. In terms of the classroom environment, students related their learning preferences to teacher- or student-centred classrooms and learning goals. It seems that these possible influential factors could be associated with the difference between Chinese and British pedagogies. It is interesting to note that Chinese and UK participants held different views on what may affect their learning preference at numerous junctures throughout the interview. For UK participants, learners' feelings and learning interest were highlighted; however, Chinese participants did not mention anything relevant to this perspective. Chinese participants' learning goals were exam-driven, whereas the UK participants' learning goals were generally concerned with all-around development. This distinction might be related to the potential influence of the different education systems in these two countries. In general, the Chinese education system emphasises students' performance in examinations; thus, Chinese

students often need to compete for higher grades and rankings. The responses indicate that Chinese students tend to focus on which learning approach may best improve their grades, especially in public examinations. When discussing their learning preferences, Chinese participants' responses and explanations implied a grade-orientated tendency.

By contrast, the UK education system aims to improve students' all-around development. UK participants did not care solely about exam performance; they also highlighted the importance of students' feelings, emotions, learning interests, and individual development from a range of aspects. Nonetheless, the present findings also showed that when they aimed to achieve a higher grade in examinations, both Chinese and UK participants tended to consider competitive learning as an effective way to promote their exam performance. This is likely due to both countries' education systems requiring students to achieve better performances in public examinations (i.e., the Chinese Gaokao and the UK A-levels) to access higher education. In other words, when students' learning goals become exam-driven, their learning preference is influenced accordingly. Therefore, the present findings at least partly imply that the embedded education system may affect students' learning preferences from different perspectives.

Moreover, a comparison of Chinese and UK participants' responses signifies that the distinct cultures embedded in these two countries may influence students' learning preferences differently. Chinese students' understandings of learning are likely influenced by Chinese CHC, while UK students tend to be more influenced by the Socratic educational culture. In China, following Confucian educational culture, the

teacher's role is highlighted, and the learning process relies significantly on the teacher. Chinese students tend to learn from their teachers and believe that a teacher-centred classroom creates a highly effective learning environment. The findings suggest that Chinese students may disfavour cooperative learning due to its emphasis on the students' role in learning. Encouraging learning from their peers appears to challenge their original educational culture: that is, the CHC. In contrast, influenced by Socratic educational culture highlighting students' roles, UK students tend to enjoy learning in a student-centred classroom, wherein they are encouraged to construct knowledge by themselves (rather than relying on teachers' knowledge transferring) and communicate with their peers to strengthen learning. Therefore, UK participants believed that cooperative learning was the ideal way to learn as it resonates with their original educational culture.

From the individual perspective, students' individual characteristics, feelings, and learning interest were also thought to be related to learning preference. Based on participants' self-reflections and comments on their peers, it seems that learners' individual differences, such as their SVOs and extroversion/introversion, should be considered since these characteristics may be related to students' learning preferences. Indeed, students' individual needs regarding feelings, emotions, and their interest in learning may be worth considering when developing and applying different learning methods to promote their learning. As Spencer-Oatey and Franklin (2009) cautioned, when students have diverse cultural backgrounds, their individual differences should be taken into account to avoid cultural stereotypes. In addition, consistent with previous studies, the findings of this study indicate that learners with different learning preferences might perceive dimensions of the same classroom, such

as individual satisfaction and learning effectiveness, differently (Johnson & Johnson, 2005, 2009). For example, students with cooperative learning preferences may believe that cooperative learning would motivate them best, whereas competitive learning might harm their self-confidence and motivation in learning. Competitive learners, however, tend to hold completely different views: for them, a competitive learning approach motivates them to learn. It seems that although one learning approach may be suitable for students with a specific type of learning preference, it might not meet other students' needs. It can be argued, therefore, that individual differences in learning preferences may need to be appropriately considered to promote students' learning most effectively.

Meanwhile, parental influences were linked to participants' learning preferences. Parents' expectations and anxieties were highlighted as motivating participants to learn competitively, which might further shape their competitive learning preference. However, in the present study, such an influence was only linked to Chinese participants with competitive learning preferences. This finding shows how students with different learning preferences might perceive their parents' influences. Since the UK participants were less likely to report or discuss such an influence, it could be inferred that cultural differences are related to the perceptions of parental influences on learning preferences. Further discussions about parents' influences and learning preferences are provided in the next chapter.

To conclude, the findings of this study suggest that, notwithstanding further studies that need to be conducted, different students tend to respond in different ways to any particular learning approach. In other words, it is not appropriate to advocate any

single learning approach over others. Furthermore, findings highlight the potential influence of the culture and education system in which students grow up. As Nelson (1995) argued, students are not born to cultivate a genetic preference for different learning approaches, but they may learn via a socialising process unique to different cultures. The current findings also suggest that when students are required to learn for exams, some learning preferences may be more common to students from different countries. Together, it could be further argued that, in pursuit of promoting learning, educators could be worth understanding how and why students might differ in their learning preferences, and these understandings could be used to develop and enhance learning strategies. Although the present study may be far from making any substantial claim, it may help educators and practitioners better understand students' learning preferences.

Chapter 8 General Discussion

8.1 Overview

This chapter combines the findings of Studies 1, 2, and 3 and discusses them in response to the research questions. This research's overarching goal was to investigate the theoretically suggested relationships between previous learning experiences, I–C cultural identity, SVO, and learning preference, based on undergraduate samples from China and the UK. In Studies 1 and 2, online questionnaires containing a series of measures were used to examine the relationships between these constructs. Using semi-structured interviews, Study 3 explored participants' beliefs and experiences regarding what affects learning preferences.

Study 1 and 2's findings partially confirmed that for both Chinese and UK students, their previous learning experiences and I–C cultural identity were associated with SVO and learning preferences. Despite this, however, some hypothesised relationships (e.g., the relationship between individualistic learning experiences and SVO) failed to be observed; instead, it was demonstrated that SVO was related to cooperative and individualistic learning preference. The qualitative findings also aimed to generate further discussions and a more in-depth understanding regarding the quantitative findings. This chapter compares the Chinese and UK participants' responses in line with the combination of quantitative and qualitative data to effectuate a more explicit discussion. In addition, critical comparisons will be made between the current research findings and those from the existing theoretical and empirical literature.

8.2 Influence of Previous Learning Experiences on Learning Preference and SVO

8.2.1 Q: What is the Relationship Between Students' Previous Learning Experiences and Learning Preferences?

The relationship between previous learning experiences and their corresponding learning preferences appeared to be different between Chinese and British participants. For Chinese participants, cooperative and competitive learning experiences individually had a positive relationship with cooperative and competitive learning preferences, consistent with previous studies (e.g., Ryan & Wheeler, 1977; Choi et al., 2011). For UK participants, however, findings tended to oppose the existing literature: UK participants' cooperative learning experiences were negatively related to cooperative learning preferences. Findings from Study 3 offer some explanations for these relationships. Chinese participants explained in the interview that, since their learning was mainly orientated by exam grades and ranks, the competitive learning approach is considered more effective and efficient than other learning methods. Chinese participants, therefore, believed that their competitive learning experiences might have promoted their competitiveness and contributed to a competitive learning preference. Thus, it is reasonable to assume that for the Chinese participants, previous competitive learning experiences were positively related to competitive learning preferences. Furthermore, in Study 3, those Chinese participants who identified with a cooperative learning preference in Study 1 reflected that although cooperative learning was not common in their past classrooms, whenever they engaged in cooperative learning, they enjoyed its positive atmosphere and collaborating with their peers to learn. This observation resonates with those of previous studies, which

found that in comparison to competitive and individualistic learning approaches, cooperative learning creates a more positive and healthy learning environment whereby students tend to develop a cooperative learning preference (Johnson & Johnson, 1989, 2005; Choi et al., 2011).

In Study 3, five out of six UK participants reported that their previous classroom experiences were dominated by cooperative learning. They appreciated this learning approach since it can lead to better student–student relationships, positive feelings, promoted learning interests, and well-rounded development, including wellbeing, creativity, and socialisation. Nevertheless, the UK participants also expressed that cooperative learning could be problematic, especially when their learning goals were exam- or grade-orientated. They explained that this could be because cooperative learning often took longer and relied significantly on individual autonomy. Notably, the UK participants of Study 2 and 3 were recruited from selective universities (the "Russell Group") in the UK. As such, it would be reasonable to assume that since they required good grades in public examinations in order to enter these universities, exam grades were vital for them. In this sense, it could be argued that although cooperative learning was thought to have many potential benefits (e.g., all-around development), having many cooperative learning experiences might not necessarily lead to cooperative learning preferences. The time cost of this learning approach and its effectiveness in terms of achieving learning goals could be considered a potential weakness. Meanwhile, Study 3's results also suggested that the UK participants' feelings and emotions could influence their learning preference. UK participants believed that competitive learning led to negative feelings and emotions, losing learning interest, and wellbeing issues. Hence, it can be inferred that the more

competitive learning the UK participants experienced, the less they would prefer the approach due to the negative emotions and feelings raised in this learning environment. In summary, UK participants striving for high examination grades may not prefer cooperative learning. At the same time, they were also less likely to prefer a competitive learning environment, wherein they might perceive negative emotions.

Moreover, quantitative findings showed that individualistic learning experiences had no relation to individualistic learning preferences for both Chinese and UK participants. Instead, Chinese and UK participants' individualistic learning preferences were found to be significantly associated with other learning experiences (which will be discussed in the following section).

8.2.2 Q: What is the Relationship Between Students' Previous Learning Experiences and Other Types of Learning Preferences?

8.2.2.1 Cooperative Learning Experiences and Competitive and Individualistic Learning Preferences.

It is interesting to note that cooperative learning experiences were differently associated with Chinese and UK participants' competitive and individualistic learning preferences in Studies 1 and 2. For Chinese participants, there was a significantly negative relationship between cooperative experiences and individualistic learning preferences, but no significant relationship between cooperative learning experiences and a competitive learning preference was found. For UK participants, there was a significantly negative relationship between cooperative learning experiences and

competitive learning preferences, while the relationship between cooperative learning experiences and individualistic learning was not significant. These findings support previous theoretical studies that have shown that more cooperative learning experiences can lead to fewer competitive and individualistic learning preferences (Johnson & Johnson, 1989, 2005). To date, however, little research has demonstrated these theoretically negative relationships except Choi et al.'s (2011) study. In their study, a negative relationship between cooperative learning experiences and individualistic learning preferences was found, although the researchers failed to demonstrate a negative relationship between cooperative learning experiences and competitive learning preferences. The findings of the present research thus broaden Choi et al.'s (2011) findings by illustrating a negative relationship between cooperative learning experiences and competitive/individualistic learning experiences in two samples of Chinese and UK participants.

Study 3 offers some insights to explain these observed relationships. Based on the interview data, responses of all six Chinese participants highlighted that the Chinese education system is exam-orientated, and the Chinese students interviewed often learned purely for exam grades. They found competitive learning to be the most effective way of learning to improve examination performance. Through a competitive learning approach, students can be considerably motivated to engage in all required learning tasks and devote time to preparing for exams. Therefore, more cooperative learning experiences do not necessarily cause Chinese participants to disfavour competitive learning because it is the most effective way of learning to achieve their learning goals (i.e., getting higher grades).

Additionally, according to the interview data, UK participants expressed that long-term engagement in cooperative learning can cause them to feel fatigued since it involves participation in group discussions and frequently interacting with other group members. In this regard, individualistic learning was considered the preferable way of learning because students would not need to bear the burden of frequent student–student communication. In contrast, they could enjoy their personal time by working independently. Thus, inconsistent with previous studies, it seems reasonable that UK students' more frequent engagement in cooperative learning may not necessarily lead to a lower preference for individualistic learning.

8.2.2.2 Previous Competitive Learning Experiences and Cooperative and Individualistic Learning Preferences.

Results from Study 1 demonstrated no relationship between competitive learning experiences and cooperative learning preferences. Many studies have argued that the competitive Chinese learning environment has led to more significant competitive and individualistic spirits in Chinese students, which may hinder their inclinations towards learning cooperatively (Cortazzi & Jin, 1996; Nguyen et al., 2006). Contrary to expectations, these relationships were not observed in the Chinese participants.

In Study 3, Chinese participants reflected that their previous learning experiences were full of competition; nevertheless, they did not relate these experiences to cooperative or individualistic learning preferences. On the contrary, competitive learning experiences were thought to promote their competitiveness in learning and motivate them to outperform their peers. It has been suggested that competitive

learning can stimulate students' competitive instincts, thereby promoting students' engagement in learning activities (Anderson, 2006). Thus, it seems reasonable that Chinese participants' previous competitive learning experiences might be significantly positively related to competitive learning preferences but might not significantly affect cooperative or individualistic learning preferences.

The findings of Study 2 seem to support previous studies' findings that the more competitive learning students engage in, the less likely they are to prefer cooperative learning (see, e.g., Johnson & Johnson, 2005). In the interviews, UK participants portrayed their learning experiences during GCSEs and A-levels as highly competitive and exam/grade-driven because they needed high grades to enter esteemed universities. In this situation, they suggested that cooperative learning might not be as effective as competitive learning in promoting exam grades. One can infer, therefore, that the more competitive learning the UK participants used to engage in, the less they would prefer cooperative learning.

8.2.2.3 Relationship Between Participants' Individualistic Learning Experiences and Cooperative and Competitive Learning Preferences.

It is interesting to note that Chinese and UK participants differ in terms of the relationship between individualistic learning experiences and competitive learning preferences. For Chinese participants, the more individualistic learning experiences they engaged in, the fewer competitive learning preferences they might have. In contrast, with respect to UK participants, the more individualistic learning experiences they had, the more they would prefer competitive learning. It seems that for Chinese

and UK participants, individualistic learning experiences have opposing relationships with their competitive learning preferences.

Notably, as this research may be one of the first to address this issue, it seems to suggest that other factors' possible interference cannot be ruled out. Therefore, a further study with more focus on the possible influence of competitive and individualistic learning experiences on learning preferences is recommended.

8.2.3 Summary

Overall, Studies 1 and 2 provide empirical evidence to demonstrate the relationship between previous learning experiences and learning preferences. Chinese and British participants' responses in Study 3 imply that classroom learning experiences regarding teacher-centred or student-centred classes are associated with learning preferences. Students growing up in a teacher-centred classroom tend to believe that the process of knowledge transmission should be predominantly reliant on teachers' teaching, while student–student interactions are less valuable. Hence, they are likely to have negative attitudes towards and less preference for cooperative learning. This learning approach (e.g., requiring students' autonomy and highlighting the importance of exchanging knowledge within students) seems to refute their beliefs formed via their previous learning experiences. Conversely, in a student-centred classroom where positive student–student interactions are often emphasised, students are more likely to recognise that characteristics of cooperative learning (e.g., encouraging students to learn from each other to create and apply knowledge) benefit them most since this learning method seems to resonate with their beliefs shaped in past learning

experiences.

In summary, the current research findings indicate that learning experiences can influence students' learning preferences. Nonetheless, such an effect of learning experiences might not solely address cooperative, competitive, and individualistic learning; it could also be associated with individual needs, perceptions in each learning environment, and classroom format (e.g., whether a classroom is teacher-centred or student-centred). These findings also could imply that the higher the cooperative, competitive, or individualistic learning preference students have, the more they might correspondingly perceive their previous learning experiences as cooperative, competitive, or individualistic. Further studies are necessary to identify possible conditions under which previous cooperative, competitive, or individualistic learning experiences result in learning preferences and, in turn, how learning preferences lead to perceiving experiences as cooperative, competitive, or individualistic. Future research must shed further light on learning experiences and experienced classroom environments that could potentially affect learning preferences from a broader range of aspects.

8.3 Influence of I–C Culture on Learning Preference and SVO

8.3.1 I–C Cultural Identity and Learning Preference in China

Study 1 showed that the Chinese participants' higher levels of collectivist cultural identity were negatively related to competitive and individualistic learning preferences. Previous research has suggested that people with a strong collectivist identity focus on collective good and group interest, and thus tend to subordinate their personal interest in place of group values (Triandis, 1996; Wagner, 1995; Hofstede, 2001, 2013). Consequently, it can be inferred that they may disfavour a learning approach and environment emphasising achieving individual learning goals while ignoring other group members or competing with their peers (i.e., competitive or individualistic learning). In contrast, they tend to favour cooperative learning since such learning methods correlate with their collectivist cultural identity (Johnson & Johnson, 2005, 2009). Therefore, it seems that collectivist students emphasise interpersonal relationships and cohesion within the group and tend to avoid conflicts and coldness in the group to maintain harmony: as such, competitive and individualistic learning methods are favoured less.

The hypothesised positive relationship between collectivist cultural identity and cooperative learning preferences was not observed in the Chinese data. The current findings showed instead that the stronger the collectivist cultural identity of Chinese participants, the less they would prefer cooperative learning. Chinese participants' responses in Study 3 provide possible explanations for this unexpected relationship. Firstly, the participants reflected that from primary school to high school, their parents had concerned themselves with their studies. Parents pushed and motivated them to

work hard in learning and expected them to perform well in examinations. Furthermore, Chinese participants expressed that their learning performance (i.e., their grades and ranks in exams) greatly influenced their parents' emotions (e.g., anxiety) and family atmosphere. Thus, Chinese students with a higher collectivist cultural identity learn not only for themselves but also to meet their parents' expectations and contribute to the whole family.

In previous research, a strong collectivist cultural identity has been suggested to involve a strong sense of group honour and willingness to contribute to the group (Hofstede, 2001; Triandis, 1995). Collectivist people are more concerned about achieving the collective good of the group than that of themselves. In a collectivism-dominated society, filial piety is often highlighted as a virtue, and children are expected to be obedient to and repay their parents by working hard to make them proud (Salili, 1996). Zhang (2000) argued that for Chinese people, collectivism is primarily significant in the unit of the family. According to Salili (1994), meanwhile, Chinese and British people tend to vary in their understanding of the meaning of achievement. Achievement for Chinese people is more associated with affiliative than individual concerns, and Chinese affiliative achievement goals are significantly related to their goals of individualistic achievement. However, this relationship was not observed in the UK group. Wilson and Pussy's study (1982) found that, for Chinese people, making families proud and face-saving were thought to be a great incentive in relation to individual success and achievement. Hence, it may be inferred that Chinese students who have a strong collectivist identity may seek to contribute to their family (make the family proud) and achieve group honour in a learning context. Learning may be the best way for students to achieve these goals in China. These students have a strong

motivation to achieve learning goals: not only for themselves but also for their family.

Thus, to achieve this goal, they must engage in intense competition to obtain relative advantages (e.g., higher rank) over their peers since the Chinese learning environment incorporates great competitiveness and focuses on exam-orientated learning outcomes. In the interviews, the Chinese participants considered cooperative learning as a less effective way to improve their exam grades because such a learning approach involves spending considerable time on activity design, group arrangements, and communication with group members. In this sense, students may not prefer cooperative learning because it cannot effectively support them to succeed in a competitive learning environment and then repay their parents.

In addition, the Chinese participants in Study 3 worried that students' bad habits could be easily spread (for example, the free-rider effect) in cooperative learning environments. Many researchers have argued that due to unequal task distributions and participations in cooperative learning tasks, some group members may take advantage of other groupmates' efforts to reduce their personal workload (Obrbell & Dawes, 1981; Slavin, 1995; Wagner, 2002). Therefore, those Chinese participants who were more concerned about group value disfavoured a cooperative learning approach because the negative effects that could emerge in such an environment could potentially harm the learning process of the whole group in a "collective" way.

Overall, the present findings imply that for Chinese students, a higher level of collectivist cultural identity may not necessarily lead to a preference for cooperative learning, as previous studies suggested. Rather, Chinese students with strong

collectivist identities focus more on family honour and tend to succeed in the Chinese exam-orientated learning environment to meet parental expectations and repay their parents. As a result, these students prefer cooperative learning less, as it is considered less effective in promoting their grades and ranks. At the same time, a stronger collectivist cultural identity is also associated with more emphasis on the collective good. In this sense, potential risks of cooperative learning (e.g., the free-rider effect) may harm the whole learning group's collective value; consequently, students disfavour this learning approach.

8.3.2 I–C Cultural Identity and Learning Preference in the UK

Study 2's results indicate that the UK participants' individualist cultural identity was positively related to cooperative learning preferences, whereas it was negatively related to competitive and individualistic learning preferences. These findings oppose those of many theoretical and empirical studies (e.g., Hall, 2017; Hofstede, 2001; Ellison et al., 2005; Zhan et al., 2013). Theoretically, individualist culture emphasises individual independence and personal goals and highlights individual value as more important than the collective interest (Triandis, 1995). Hence, learners with a strong individualistic identity tend to compete with others or work independently to achieve their learning goals rather than learning through a cooperative approach whereby they need to take shared responsibility and create mutual support with other group members.

Study 3's findings lend support to understand this phenomenon. It was found that the UK participants perceived their feelings, emotions, and learning interests as essential individual needs in learning settings, and they frequently related their learning goals

to all-around development. Based on their responses, both competitive and individualistic learning approaches were thought to create negative feelings and emotions and diminish their learning interest. For example, during the interview, all six UK participants expressed that competitive learning produced tremendous pressure and made them highly anxious because they always had to strive to compete with other peers and be the best. In terms of individualistic learning, some participants believed that it could lead to great loneliness since there was no interaction in the classroom. Moreover, UK participants believed that competitive and individualistic learning methods could be incompatible with their personal learning goal (all-around development). On the contrary, learning competitively or individualistically was considered to hinder personal development of creativity, wellbeing, and socialisation.

Research suggests that unlike collectivists, who concern more on collective wellbeing, individualistic people are more likely to focus on personal wellbeing and individual needs (Triandis, 1995; Wagner & Moch, 1986). People with an individualistic identity have the inclination to think in terms of "I" and emphasise their own needs, views, and feelings (Triandis, 1995; Hofstede, 2001). In this sense, with remarkably distinctive characteristics, cooperative, competitive, and individualistic learning may differently meet or not meet individualistic students' needs and interests, leading to different perceptions and preferences concerning these learning approaches. It has been suggested that competitive learning can put considerable pressure on students, while individualistic learning often causes students' loneliness. Thus, many scholars argue that competitive and individualistic learning approaches harm students' psychological wellbeing and limit the support of well-rounded development (Crandall, 1982; James & Johnson, 1988; Johnson & Johnson, 2005). According to Smith and Biddle (2008),

competitive learning might result in students' loss of learning interest and disengagement in the learning process because competitive pressure compromises learners' autonomy and independence. In this sense, it seems that UK participants' responses in Study 3 support these previous studies. Therefore, it is reasonable to assume that students with a stronger identity of individualism tend to be more concerned with their personal pursuits and individual interests; however, since competitive and individualistic learning cannot satisfy (or even goes against) their individual needs (e.g., their learning goals of all-around development), they tend to prefer these two learning approaches less.

Following the above logic, a positive relationship between UK participants' individualistic cultural identity and cooperative learning preference in Study 2 is reasonable because cooperative learning satisfies the individual needs of students with a strong individualistic cultural identity. In Study 3, UK participants reflected that they preferred cooperative learning because such a learning approach was enjoyable and healthy and could help their well-rounded development by fostering students' creativity, socialisation, and wellbeing. Many studies have found that compared to competitive and individualistic learning, cooperative learning is the ideal way of learning that can meet students' individual needs and promote learning motivation and learners' self-autonomy (Slavin, 2014, 2015; Johnson & Johnson, 1989, 2005, 2009). Cooperative learning can contribute to well-rounded development from a range of various aspects. It is believed that cooperative learning provides a positive and comfortable classroom environment (Young, 2011) and facilitates students' positive relationships, contributing to an increased learning interest (Johnson & Johnson, 1999, 2005). Empirical studies have posited that students who employed cooperative

learning reflected that this learning method increased their learning interest and motivated them to better engage in classroom activity (Fennel, 1992; Sahin, 2010). According to Brindley et al. (2009), cooperative learning provides students with positive experiences and a sense of the group, which promotes students' self-direction and autonomy. Hence, students with high individualistic cultural identity prefer cooperative learning approaches because their self-direction, self-reliance, and individual autonomy are highlighted.

Furthermore, individualistic students tend to perceive group work in cooperative learning environments as a platform for confrontation and searching for solutions, while achieving a task goal could be more necessary than maintaining a relationship (Economides, 2008). Unlike the collectivists, who need to avoid direct confrontation to avoid losing face, confrontation in cooperative learning enables individualistic students to discuss, exchange feedback freely, and challenge each other to achieve a group learning goal. In addition, a group's goal takes the place of personal interest that drives and motivates individualists to engage in group work. At the same time, students' perceptions of highlighting self-reliance may push them to contribute to reaching group goals. Therefore, since a cooperative learning approach could meet UK participants' individual needs, encompassing positive emotions, feelings, learning interests and wellbeing development, their individualist cultural identity may be positively related to cooperative learning preferences.

To sum up, previous studies have often proposed that an individualistic cultural identity is related to better performance in and more preference towards competitive and individualistic learning methods (e.g., Wagner, 1995). The current findings,

however, indicate that the stronger the individualistic cultural identity the UK participants hold, the less they would prefer individualistic learning. This could be because individualistic culture is related to an emphasis on individual needs and personal pursuit, and competitive and individualistic learning might not meet students' personal needs (e.g., emotional needs, wellbeing, and all-around development). The current research results seem to reject the findings of previous studies that posit a negative relationship between individualistic identity and cooperative learning preferences (e.g., Triandis, 1995; Hofstede et al., 2005). In this research, UK participants with a strong sense of individualism may prefer cooperative learning because such a learning approach can meet their personal needs and pursuits and motivate them to engage in group work to achieve learning goals.

In addition to the above discussions, it is notable that, in this research, some items reflecting individualist cultural identity (from measurement of I-C cultural identity) and individualistic learning preference (from social interdependence scales) were portrayed in a similar vein. It is acknowledged that this could potentially diminish item validity, which could limit the discussions. However, there is a substantial difference between measures of I-C cultural identity and learning preferences: some items of the previous measure focus on group tendency or preference in a more general and virtual context, and items of the later scale are embedded in education environment (especially given the fact that the instruction of learning preference scale and nearby items clearly refer to learning preference in education context). This could therefore help participants to distinguish I-C cultural identity from individualistic learning preference, and discussions based on data measured by these scales could still remain validity but careful concerns about the potential item validity issue are also needed.

8.4 SVO

Another important aim of this research was to investigate the relationship between SVO and learning preference and examine how SVO might mediate the influence of previous learning experiences and I–C cultural identity on learning preference.

8.4.1 The Influence of Culture and Previous Learning Experiences on SVO

Study 1 found that Chinese participants' SVOs were associated with their previous competitive learning experiences but not with previous cooperative and individualistic learning experiences and I–C cultural identity. In Study 2, however, it was found that UK participants' previous cooperative learning experiences and I–C cultural identity had a significant relationship with their SVOs.

Based on these findings, it is notable that the Chinese participants with more competitive learning experiences are less likely to have prosocial value orientations but rather tend to be individualistic value oriented. In Study 3, the Chinese participants reported an abundance of competitive learning experiences when talking about their previous learning experiences. It is interesting to note that although China is dominated by collectivism, highlighting interpersonal relationships and group harmony, the Chinese participants in this study appreciated learning through competing. They believed that competitive learning promoted personal competitiveness, which could support them to succeed in learning settings. Thus, the competitiveness fostered through such "impressive" competitive learning contributed

to the development of their proself (competitive or individualistic) value orientations.

With its emphasis on student–student competition and competitiveness, competitive learning, in particular, seems to challenge the core value of the embedded culture of collectivism that foregrounds collective good, interpersonal relationships, and group cohesion (Triandis, 1995, 1996; Hofstede, 2001; Hofstede et al., 2005). Moreover, the Chinese education system emphasises the promotion of Chinese students' competitiveness to meet the requirements of global competition (Zhao & Selman, 2014), and Chinese students are required to follow the national education policy and adapt to a competitive learning environment. Thus, competitive learning experiences appear to affect their SVO considerably.

In contrast, the more cooperative learning experiences the UK students had, the less likely they were to have a prosocial value orientation and the more likely they were to have developed an individualistic value orientation. Cooperative learning encourages student–student cooperation and mutual support, which arguably opposes the individualism culture that focuses on individual value, personal gain, and independence (Triandis, 1995, 1996; Hofstede, 2001; Hofstede et al., 2005). According to Study 3's findings, while UK participants admitted and appreciated the possible benefits from cooperative learning, they also doubted its effectiveness and efficacy in terms of reaching personal learning goals. This conflict between cooperative learning experiences and the UK's individualistic culture might have led to the unexpected negative relationship between cooperative learning experiences and students SVO: the more cooperative learning they used to undertake, the less likely they were to cultivate a prosocial value orientation. This finding contradicts those of previous

studies that suggest that more cooperative learning contributes to the development of students' prosocial value orientations (e.g., Johnson & Johnson, 1989, 2005, 2009; Choi et al., 2011). Further studies are needed to examine how cooperative learning experiences affect students' SVO development, especially in other individualism-dominated societies.

Taken together, it seems that learning experiences in different societies characterised by distinct cultures influence people's SVO development in different ways. It could be inferred from the above findings that when the learning environment is opposite to the embedded national culture of individualism or collectivism, such a learning approach would have more notable influences on students' SVO than other learning methods.

The present research also examined the relationship between participants' I–C cultural identity and their SVOs. Although no relationship was observed in the Chinese participants, the results of Study 2 demonstrated a positive relationship between collectivist cultural identity and prosocial value orientations in the UK sample, consistent with previous studies (Tranidis, 1995; Hofstede, 2001). At the national level, China is widely considered a collectivist culture (e.g., Hofestede, 2001, 2013; Hofstede et al., 2005). Based on the current findings, it is somewhat surprising that at the individual level, whether a Chinese student believes they are collectivist or individualist may not be related to SVO. Conversely, although the UK embodies the characteristics of an individualist culture, the more UK students identified themselves as collectivist, the more likely they were to hold a prosocial value orientation, indicating a discrepancy between the national cultural background and individual

cultural identity. Further studies are needed to examine how culture at different levels could be related to people's SVO. Future work should also focus on further examining whether the relationship between personal I–C cultural identity and SVO might vary in different cultural contexts.

8.4.2 SVO and Learning Preference

The present research sheds new light on the relationship between SVO and learning preference. Previous studies have shown that SVO can predict people's cooperative, competitive, and individualistic decisions and actions in a range of different contexts in daily life (e.g., Bogaert et al., 2008; Murphy et al., 2011). Nevertheless, few studies have focused on educational contexts. Thus, as one of the first studies to investigate the potential relationship between SVO and learning preferences in an educational context, the present research generated hypotheses regarding such relationships. Firstly, it was assumed that a prosocial value orientation would be positively related to cooperative learning preferences and negatively related to competitive/individualistic learning preferences. Secondly, proself value orientations (competitive or individualistic) were hypothesised to be positively associated with competitive and individualistic learning preferences, respectively, and negatively associated with cooperative learning preferences.

Findings suggest that the more prosocial value orientations the Chinese participants had, the more they would prefer cooperative and individualistic learning. For UK participants, however, the more prosocial value orientations they held, the less likely they were to have competitive and individualistic learning preferences. As discussed in Chapter 3, cooperative learning might be understood as a real-life example of social

dilemmas. In this sense, a cooperative learning environment could entail a situation whereby if no group member contributes to the group learning tasks, the whole group will not achieve their learning goals. Nonetheless, students free-riding on other members' behaviours could be personally more profitable. Therefore, students with a prosocial value orientation may tend to show a greater willingness to engage in cooperative learning and contribute to collective work. In contrast, students with individualistic or competitive value orientations may not prefer to engage in cooperative learning tasks.

Prosocials, meanwhile, are more likely to be natural co-operators who often seek win–win situations (Bogaert et al., 2008; Smeesters et al., 2003; Van Lange et al., 2007) and hence may be less likely to have competitive learning preferences (i.e., seeking win or lose situations and maximising their own learning outcomes relative to others) or individualistic learning preferences (i.e., caring solely about their own learning outcomes while ignoring their peers' outcomes). The current findings provide initial empirical evidence that partially demonstrates the relationship between SVO and learning preferences, although the nature of these findings varies according to the context.

Nevertheless, other hypothesised relationships between SVO and learning preference were not observed in the current research. For example, Chinese participants' SVOs were not found to be significantly related to competitive learning preferences, and UK participants' SVOs were not significantly related to cooperative learning preferences. These surprising results could because the predictive ability of an SVO in a specific situation can be affected by contextual factors. For example, previous research has

suggested that the predictive power of SVO on cooperative/competitive/individualistic actions and decisions could be strongest in a neutral environment with few external influences. However, when the situation includes contextual information regarding individuals' cooperative decisions, the predictive effect of the straightforward relationship of prosocials with cooperativeness and proselfs with selfishness may be lost (Bogaert et al., 2008). It could be inferred that certain contextual factors of the Chinese and UK education environments may affect the predictive power of participants' SVOs.

Participants' responses in Study 3 lend support to this line of reasoning. They reflected that the learning environment in China and the UK tended to have a competitive nature. Both Chinese and British participants highlighted the importance of public examinations: if students wanted to enter a "good" university, they had to perform well and receive high grades in these exams. Chinese participants portrayed their learning goals as exam-orientated and grade-driven. For the UK students, although they highlighted the importance of students' all-around development encompassing creativity, socialisation, and wellbeing, they also described the UK education system as competitive at its heart. In particular, they emphasised that their learning experiences during GCSEs and A-levels were competitive, and they had to obtain higher grades to enter their desired universities. Therefore, in terms of the Chinese learning environment, both learning and learning goals were considered competitive rather than cooperative. In the UK, while the learning process might be relatively cooperative (in that it incorporates many cooperative learning techniques in the classroom), the learning goals might be still competitive, especially for students striving to enter prestigious universities. Hence, it can be inferred that such a

competitive context could have a potential influence on the predictive effect of SVO; as such, some of the expected associations between SVO and learning preferences might be biased in the current research.

Overall, the current findings partly confirmed the hypothesised relationship between SVO and cooperative, competitive, and individualistic intentions in education settings (i.e., learning preferences), which bridges the gap between the related theories of these two constructs. Further studies are needed to investigate how the contextual factors of a learning environment affect the predictive power of SVO and its relation to learning preferences. In addition, the present findings revealed a discrepancy in the relationship of SVO and learning preference between China and the UK. For the Chinese participants, a prosocial value orientation was positively related to both cooperative and individualistic learning preferences. However, for the UK participants, a prosocial value orientation only negatively predicted individualistic learning preferences. Future studies may wish to consider focusing on how cultural differences might moderate the relationship between SVO and learning preferences since cooperation, competition, and individualistic behaviours may have different meanings for people from societies characterised by distinctive cultures.

Chapter 9 Conclusion and Implications

9.1 Conclusion

The present research applied a QUAN+qual mixed-methods design to examine the theoretical relationship amongst previous learning experiences, I–C cultural identity, SVO, and learning preferences in China and UK in two quantitative studies. The third qualitative study explored the students' perceptions of what may affect learning preferences.

The research findings partially supported the notion that previous learning experiences and I–C cultural identity influence both Chinese and British students' SVO and learning preferences. At the same time, although SVO was related to cooperative and individualistic learning preferences, some of the hypothesised relationships, such as the mediating effect of SVO, were not observed. Based on Chinese and UK undergraduate samples, this research highlights the complexity of the influence of I–C culture and learning experiences on students' SVOs and learning preferences.

In Study 3, qualitative findings were added to the quantitative findings (Studies 1 and 2) to reveal that classroom environments (i.e., teacher- or student-centred approaches and learning goals), learners' characteristics, feelings, emotions, and learning interests, as well as parental influences, could also be associated with learning preferences. In general, it can be understood that one's learning preference and SVO may be an outcome of the interaction between people and their experienced context (e.g., culture and learning environment). Children are not born to have a preference or

inclination in terms of a learning approach; instead, they may discover their preferred way of learning via a socialisation process that is unique in each society and in different cultures (Nelson, 1995). Thus, the present research findings are significant because they contribute to a more robust understanding of the influence of contextual factors on learning preferences.

9.2 Theoretical Implications

Firstly, the findings of the current research have important implications for social interdependence theory (Deutsch, 1962; Johnson & Johnson, 2005). Social interdependence theory focuses on the influence of contextual or situational interdependence on the interactions between people and their results. Various studies in the fields of educational psychology (Johnson & Johnson, 2005; Johnson & Norem-Hebeisen, 1977) and social psychology (Bogaert et al., 2008; Murphy et al., 2011; Murphy & Ackermann, 2014; Van Lange et al., 1997) have investigated the development of individual personality traits regarding cooperative, competitive, and individualistic orientations and inclinations. Although the consequences of cooperative, competitive, and individualistic contexts and people's cooperative, competitive, and individualistic inclinations are theoretically suggested to be strongly correlated, there exists little empirical research evidence, if any, demonstrating this relationship, except one conducted by Choi et al. (2011). Nonetheless, their study focused solely on the relationship between cooperative learning experiences and different predispositions regarding social interactions in education contexts. The current research expands their findings by incorporating examinations of participants' competitive and individualistic learning experiences. That is, the relationships found

between previous learning experiences, SVOs, and learning preferences in this research could link the situational studies with fieldwork addressing the development of personality traits, thereby expanding the scope of social interdependence theory.

Secondly, this research may be one of the first studies to link SVO to learning preferences and demonstrate the relationship between these two concepts. SVO was developed from economic psychology and has consistently been proven by previous studies to predict prosocial and proself tendencies and behaviours in daily life (Van Lange et al., 1997; Au & Kwong, 2004; Bogaert et al., 2008). Many previous studies have found that SVO can predict people's cooperative, competitive, and individualistic behaviours in their everyday lives (Murphy et al., 2011; Murphy & Ackermann, 2014; Bogaert et al., 2008; Van Lange et al., 1997). However, few studies have related SVO to educational contexts. Learning preference, in educational theory, is a concept proposed by educational psychologists and related to students' cooperative, competitive, and individualistic inclinations and actions in the learning process (Johnson & Johnson, 1989, 2005; Choi et al., 2011). It could be, therefore, posited that one's SVO may predict one's cooperative, competitive, or individualistic intentions or preferences in learning settings (i.e., learning preferences). This research has provided initial empirical evidence to support the relationship between these two concepts. Findings also indicate that learning preferences are distinct from learning goals. These results may help scholars to understand and develop theories concerning both SVO and learning preferences (e.g., social interdependence theory). In addition, this research has important implications for broadening the application of SVO theories in the education field.

Thirdly, the current research examined how I–C culture might be related to SVO and learning preferences. Notably, the findings suggest a discrepancy in the influence of I–C culture between individual level (i.e., participants' I–C cultural identity) and national level (i.e., regarding China as characterised by collectivism and the UK as dominated by individualism), which could lead the way for further studies on the relationship between cultural differences and individual differences/characteristics in learning from the perspective of cross-cultural psychology. The disparity between some of the current findings and the results from previous studies may signify that cultural differences shift from generation to generation. At the individual level, I–C culture's influence on learning preference may not be as simple as has been suggested in the literature. Instead, such an influence is so complex that it intertwines with individual characteristics (e.g., personality traits), contextual factors (e.g., classroom environment), and specific subcultures (e.g., Chinese face culture).

The findings of this research may provide evidence to support the notion that learning preference may be affected by contextual and individual factors in complex ways, highlighting the importance of the interaction between one's own attributes and his or her surrounding environment.

9.3 Practical Implications

The current research findings also have practical implications. Firstly, this research demonstrates the pivotal role of the learning environment in understanding students' learning preferences and SVOs. Results indicating the relationships between different previous learning experiences and students' learning preferences and SVOs have

implications for policies and practices seeking to understand how the learning environment can shape learners' characteristics. It is essential for teachers, educators, and practitioners to note that different learning methods implemented in the classroom may not only be related to students' learning outcomes but also be influential in the formation of learners' characteristics in the long run. In particular, the findings of the Chinese group suggest a negative relationship between competitive learning experiences and prosocial value orientation. Previous studies have highlighted the negative effects of competitive learning, including considerable academic pressure, wellbeing issues, and even psychosomatic symptoms (Hesketh et al., 2010; Zhao & Selman, 2014; Zhao et al., 2014; Zhao et al., 2015). The present findings can broaden practitioners' understanding of potential outcomes from competitive learning: namely, that students who frequently engage in a competitive learning environment are less likely to cultivate the prosocial value orientation needed to adapt to and survive in modern society (Johnson & Johnson, 2005). Although competitive learning may contribute to students' exam grades, education itself should aim to promote students' well-rounded development rather than merely emphasising one particular aspect (e.g., exam-orientated knowledge and skills). Meanwhile, the present research findings indicate that students with different learning preferences may perceive learning environments differently. There may, therefore, be a benefit in applying a combination of different learning approaches to support students' overall learning. As Tauer and Harackiewicz (2004) suggested, employing a blended learning method (e.g., a combination of cooperative and competitive learning) in instruction can enhance the learning process since such a learning approach can meet most students' learning preferences.

Secondly, this research has illustrated that learning preference and SVO are influenced by I–C cultural identity; however, such a relationship differed between Chinese and UK participants. These findings have meaningful implications for studies addressing culture and learning by providing empirical evidence to support the I–C cultural influence on people's learning and value orientation in different countries. Possible implications of these findings could be related to the understanding of cross-cultural learning: students experiencing different cultures and forming different cultural identities from the perspective of individualism or collectivism may vary in their learning preferences and SVOs. While the influence of culture on learners' academic roles, learning preferences, and behaviours are widely acknowledged, educators, practitioners, and students likely underappreciate such an influence in terms of affecting a given student. In the current research, the observed discrepancy between the influence of national cultural background and individual cultural identity on learning preference and SVO might have contributions to a better understanding of the interaction between culture and learners' individual differences at different levels. As Hall (1990) noted, since different embedded cultures influence their respective education systems, educators should be aware of the context in which learning is acquired.

Finally, the qualitative research results signify that students' individual characteristics (e.g., those that align with introversion or extroversion) and their different perceptions in the learning environment (e.g., feelings, emotions, and learning interests) might be related to their preferred way of learning, although these relationships differed between Chinese and UK participants. These findings have implications for educators, who may reflect upon how students differ in their approaches to learning activities

when designing learning strategies. In this sense, a better understanding of the nature and origin of learners' individual differences may help educators create a learning environment that facilitates more effective student learning. According to Spencer-Oatey and Franklin (2009), individual differences in different cultural groups must be considered when seeking to understand individual behaviours from a cross-cultural perspective. Adding to this point, the findings of the present research also imply that teachers and instructors may need to bear in mind the importance of the interaction between the learning context and learners' individual differences and needs when considering which learning approaches are most appropriate to use.

In summary, although tailoring a single learning strategy or classroom activity to meet all students' learning preference is not possible, the present study's findings may have implications for educators and practitioners to better understand how to promote learning in ways that fit learners' individual differences and personal needs. Information regarding the concept of learning preference and its related influential factors may help instructors create an appropriate learning environment to contribute to students' learning experiences.

9.5 Limitations

While this research contributes in both a theoretical and a practical sense, there are several limitations that should be acknowledged. The first issue relates to the non-random selection strategy adopted in Studies 1 and 2. The sample's compatibility may also be less than ideal. The universities from which participants were recruited in China and the UK differ in terms of academic vigour and entrance requirement. Hence, the

different intensity of competitiveness may have affected students' self-reported learning preferences differently since, as discussed before, students' learning preferences are influenced by their learning experiences and environment.

Secondly, the reliability of measures was not as consistent as those of previous studies. Most measures applied in the present research had good Cronbach's alphas; however, a few items had low internal reliability, especially those designed as reversed. These items were removed from the final analysis to increase the Cronbach's alpha (and thus, the internal reliability) of corresponding scales. Another limitation of the measures may be related to the previous learning experiences scales used in this research. In the literature, few (if any) measures have been developed to address previous learning experiences. In Studies 1 and 2, to investigate participants' previous cooperative, competitive, and individualistic learning experiences, the scales were revised based on published measures addressing current learning experiences or learning environment from a social interaction perspective. Nevertheless, since these scales or measures were originally developed to understand students' perceptions of their current learning experiences and environments, the use of these scales may have some issues regarding their validity and reliability when used to reflect previous learning experiences. Further studies may be worthwhile to establish and apply measures that more accurately reflect students' previous learning experiences, as high validity and reliability measures contribute to more convincing statistical results. Future studies may also be required to examine how the measure performs in various samples and then to amend these tools to identify students' learning experiences, cultural identity, SVO, and learning preference more accurately. Moreover, it is acknowledged that students' learning preferences may have an impact on how they perceive the learning

environment. For example, students with competitive learning preferences may perceive a class as competitive, while students with individualistic learning preferences may consider the same class as individualistic. Thus, future studies need to identify how learners with different learning preference may perceive the same class differently.

Thirdly, the UK participants in the qualitative study (Study 3) used to receive an education at a private school, a boarding school, or at home; none had any experience in learning in state schools. Therefore, the findings regarding students' learning experiences in the UK may be limited as learning in state schools is more prevalent for the vast majority of people in this country. Further studies may, therefore, wish to investigate UK students' learning experiences by including more typical school types.

Fourthly, Studies 1 and 2 relied on a self-report methodology. The constructs incorporated in this research have been suggested to be independent of instruments assessing tendencies towards social desirability, and these constructs were measured by a series of unrelated and independent questionnaires. However, it may not be sufficient to exclude the possibility that such tendencies have influenced the current findings. For instance, in the present research, based on both the Chinese and British participants' responses to the SVO slider measure, none of the participants was identified as having a competitive value orientation, which may be due to the influence of social desirability.

Finally, the present research cannot determine the causality of the variables since only one hypothetical model was examined (albeit in two contexts). Alternative models are

necessary to further investigate causality and identify which model best fits the data. Besides, it is acknowledged that students' learning preferences may have an impact on how they perceive their experienced previous learning environment. For example, students with competitive learning preferences may perceive a class as competitive, while students with individualistic learning preferences may consider the same class as individualistic. Hence, findings regarding possible cause-effect direction between learning experiences and learning preferences might be limited and conclusions drawn based on these current results need to be treated carefully. Further studies are necessary to identify possible conditions under which previous cooperative, competitive, or individualistic learning experiences result in learning preferences and, in turn, how learning preferences lead to perceiving experiences as cooperative, competitive, or individualistic.

9.6 Implications for Future Research

By setting up and examining a hypothesised model, the present research paved the way for future research to gain a comprehensive understanding of how contextual factors such as learning environment and culture may interact with learners' individual differences (e.g., learning preference and SVO). Several additional avenues for future research might be worthy of pursuit. Firstly, to further investigate the complicated influence of contextual factors on students' learning preferences, future studies may incorporate additional relevant variables, such as students' other individual characteristics (e.g., introversion/extroversion), and address samples from different perspectives. In addition, the data collected in the present study were cross-sectional, and students' previous learning experiences rely significantly on participants'

memories. Therefore, it may be worth conducting studies of a longitudinal nature to understand the impact of culture and learning experiences on learning preferences, which may capture such an influence in a more dynamic way.

Secondly, future studies could further explore the nature of biculturalism (I–C culture) in relation to learning preferences. That is, further investigation of the relationship between learning preference and students' cultural identity reflecting both collectivism and individualism could be worthwhile. Scholars have argued that studying culture and its influence based on a biculturalism framework may not sufficiently reflect the complexity of culture (Baskerville, 2003). The traditionally classified subdimensions of I–C culture may not always necessarily belong to the categories they are supposed to. For instance, previous studies have considered competitiveness as a sub-dimension of individualism (Wagner, 1995). However, based on a sample of 2,533 participants from 20 nations, Green et al. (2005) found competitiveness to be simultaneously related to both individualism and collectivism because it appeared to be combined with other subdimensions of I–C culture (e.g., self-reliance and group-orientated interdependence). The researchers concluded that individuals' cultural identity might include different combinations of sub-cultural dimensions of individualism and collectivism. Future research investigating the influence of I–C culture on students' learning preference and SVO may wish to incorporate a range of different dimensions of I–C culture and address the interactive effects of these dimensions because investigating such variations at different levels could contribute to a more accurate understanding of cross-cultural differences.

Thirdly, researchers could expand the research scope regarding the investigation of the interaction between I–C culture and the learning environment by incorporating participants from other societies characterised by distinctive culture values to further understand how these intertwined factors might affect learning preference and SVO. For example, researchers could examine which contextual or situational factors may moderate the interaction and its influence on learning preference. Future studies could address this question by incorporating a wider range of national samples to understand this variation more comprehensively. Furthermore, the present research incorporated I–C culture from individual and national (societal) levels to understand the relationship between I–C culture and individual differences (SVO and learning preference). Future research may consider focusing on I–C cultural influence from an organisational level. For instance, I–C culture in classrooms and schools at the organisational level may interact with the societal culture and individual cultural identity, potentially affecting learners' individual differences in learning preferences and SVOs. Thus, future research incorporating I–C culture at the level of society, organisations, and individuals may contribute to a further understanding of these concepts and expand the scope of related theories.

Finally, findings from any one study should be considered tentative and in need of further research and replications. It is acknowledged that the current findings must be replicated with different populations applying various measures in future research. However, since this research may be one of the first studies to show that cooperative, competitive, and individualistic learning experiences have different relationships with students' learning preferences and SVOs, it is expected that the findings of the present research will contribute to the relevant fields and future research.

To conclude, the findings from this research are critical because they provide empirical evidence to support the theoretically proposed relationships among culture, learning experiences, SVO, and learning preference in two countries embedded with different cultures and learning environments. The sequential QUAN+qual mixed methods with a comparative design, as well as the individual-level and large-scale nature of the present research, provided a fuller picture of the complex relationships between contexts (i.e., I–C culture and learning experiences) and individual differences. These results could contribute to a better understanding of the concepts of learning preference and SVO.

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Appendix

Questionnaire

Online questionnaire can be seen on

https://bristolexppsych.eu.qualtrics.com/jfe/form/SV_6nwffK7c6Tck4ct

Demographic information

1. Age [ ] (e.g. 18)
2. Gender [ ] (e.g. male/female)
3. Nationality [ ] (e.g. British)

The following pages contain a number of statements depicting several classroom activities. Please tick one box for each statement below to show how often these classroom activities happened from your primary school to high school.

What Is Happening in this Class—subscale 'cooperation' (Fraser, 1998)

	Almost Never	Seldom	Some times	Often	Almost Always
1. I got along with other students when doing assignment work.	1	2	3	4	5
2. I shared my books with other students in the class,	1	2	3	4	5
3. When I worked in groups, there was	1	2	3	4	5

teamwork in the class,

4.	I worked with other students in the class.	1	2	3	4	5
5.	I learned from other students in the class.	1	2	3	4	5
6.	I worked with other students when doing homework for this class	1	2	3	4	5
7.	I got along with other students on class activity.	1	2	3	4	5
8.	Students worked with me to achieve our class goals.	1	2	3	4	5

Learning Environment Inventory—subscale 'competitiveness' (Fraser et al., 1982)

		Almost Never	Seldom	Some times	Often	Almost Always
9.	Most students wanted their work to be better than their friends' work.	1	2	3	4	5
10.	Students competed to see who can do the best work.	1	2	3	4	5
11.	A few of the class members always tried to do better than the others.	1	2	3	4	5
12.	Students felt left out unless they competed with their classmates.	1	2	3	4	5
13.	Most students cooperated rather than competing with one another.	1	2	3	4	5
14.	There was much competition in the	1	2	3	4	5

class.

15. Students seldom competed with one another.	1	2	3	4	5

The "Emphasis on individualistic work" scale (Tapola & Niemivirta, 2008)

	Almost Never	Seldom	Some times	Often	Almost Always
16. Students often worked alone with their tasks.	1	2	3	4	5
17. Students were encouraged to work independently during the lessons.	1	2	3	4	5
18. In the lessons, the teacher taught and students listened.	1	2	3	4	5
19. School tasks were challenging.	1	2	3	4	5
20. There were lots of tests in school.	1	2	3	4	5

The following pages contain a number of statements with which some people agree and others disagree. Please rate how much you personally agree or disagree with these statements-how much they reflect how you feel or think personally. Please tick one box for each statement below to show how much you agree or disagree with it.

Individualism-Collectivism Items (Wagner, 1995)

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Agree	Strongly Agree
21. Only those who	1	2	3	4	5	6	7

	depend on themselves get ahead in life. (reverse)						
22.	To be superior a person must stand alone. (reverse)	1	2	3	4	5	6	7
23.	If you want something done right, you've got to do it yourself. (reverse)	1	2	3	4	5	6	7
24.	What happens to me is my own doing. (reverse)	1	2	3	4	5	6	7
25.	In the long run the only person you can count on is yourself. (reverse)	1	2	3	4	5	6	7
26.	Wining is everything. (reverse)	1	2	3	4	5	6	7
27.	I feel that winning is important in both work and games. (reverse)	1	2	3	4	5	6	7
28.	Success is the most important thing in	1	2	3	4	5	6	7

life. (reverse)

29. It annoys me when other people perform better than I do. (reverse)	1	2	3	4	5	6	7
30. Doing your best isn't enough; it is important to win. (reverse)	1	2	3	4	5	6	7
31. I prefer to work with others in a group rather than working alone.	1	2	3	4	5	6	7
32. Given the choice, I would rather do a job where I can work alone rather than doing a job where I have to work with others in a group. (reverse)	1	2	3	4	5	6	7
33. Working with a group is better than working.	1	2	3	4	5	6	7
34. People should be made aware that if they are going to	1	2	3	4	5	6	7

	be part of a group then they are sometimes going to have to do things they don't want to do.						
35.	People who belong to a group should realise that they're not always going to get what they personally want.	1	2	3	4	5	6	7
36.	People in a group should realise that sometimes are going to have to make sacrifices for the sake of the group as a whole.	1	2	3	4	5	6	7
37.	People in a group should be willing to make sacrifices for the sake of the groups well-being.	1	2	3	4	5	6	7
38.	A group is more productive when its members do what they want to	1	2	3	4	5	6	7

	do rather than what the group wants them to do. (reverse)						
39.	A group is most efficient when its members do what they think is best rather than doing what the group wants them to do,	1	2	3	4	5	6	7
40.	A group is more productive when its members follow their own interests and concerns. (reverse)	1	2	3	4	5	6	7

The following pages contain a number of statements with which some people agree and others disagree. Please rate how much you personally agree or disagree with these statements-how much they reflect how you feel or think personally. Please tick one box for each statement below to show how much you agree or disagree with it.

Social interdependence scales (Johnson and Norem-Hebeisen (1979)

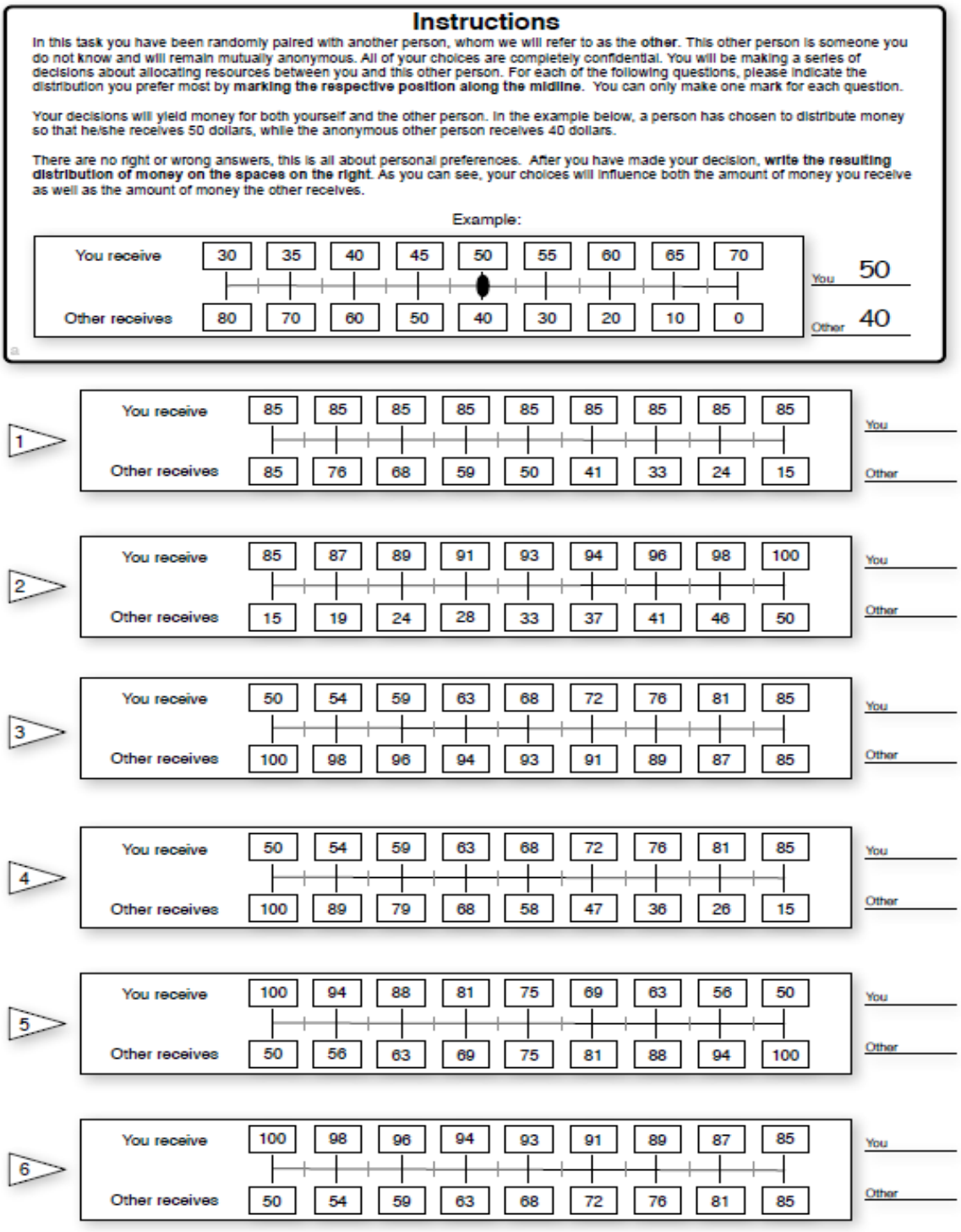
	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Agree	Strongly Agree
41. I like to help other students learn.	1	2	3	4	5	6	7
42. I like to share my ideas and materials with other students.	1	2	3	4	5	6	7
43. I like to cooperate with other students.	1	2	3	4	5	6	7
44. I can learn important things from other students.	1	2	3	4	5	6	7
45. I try to share my ideas and materials with other student when I think it will help them.	1	2	3	4	5	6	7

46. Students learn lots of important things from each other.	1	2	3	4	5	6	7
47. It is a good idea for students to help each other learn.	1	2	3	4	5	6	7
48. I like to do better work than other students.	1	2	3	4	5	6	7
49. I work to get better grades than other students do.	1	2	3	4	5	6	7
50. I like to be the best student in the class.	1	2	3	4	5	6	7
51. I don’t like to be second.	1	2	3	4	5	6	7
52. I like to compete with other students to see who can do the best work.	1	2	3	4	5	6	7
53. I am happiest when I am competing with other students.	1	2	3	4	5	6	7

54. I like the challenge of seeing who is best.	1	2	3	4	5	6	7
55. Competing with other students is a good way to work.	1	2	3	4	5	6	7
56. I don't like working with other students in school.	1	2	3	4	5	6	7
57. I like to work with other students. (reverse)	1	2	3	4	5	6	7
58. It bothers me when I have to work with other students.	1	2	3	4	5	6	7
59. I do better work when I work alone.	1	2	3	4	5	6	7
60. I like work better when I do it all myself.	1	2	3	4	5	6	7
61. I would rather work on school work alone than with other students.	1	2	3	4	5	6	7

62. Working is small groups is better than working alone. (reverse)	1	2	3	4	5	6	7

The six primary items of SVO slider measure (Murphy et al., 2011)



Instructions

In this task you have been randomly paired with another person, whom we will refer to as the **other**. This other person is someone you do not know and will remain mutually anonymous. All of your choices are completely confidential. You will be making a series of decisions about allocating resources between you and this other person. For each of the following questions, please indicate the distribution you prefer most by **marking the respective position along the midline**. You can only make one mark for each question.

Your decisions will yield money for both yourself and the other person. In the example below, a person has chosen to distribute money so that he/she receives 50 dollars, while the anonymous other person receives 40 dollars.

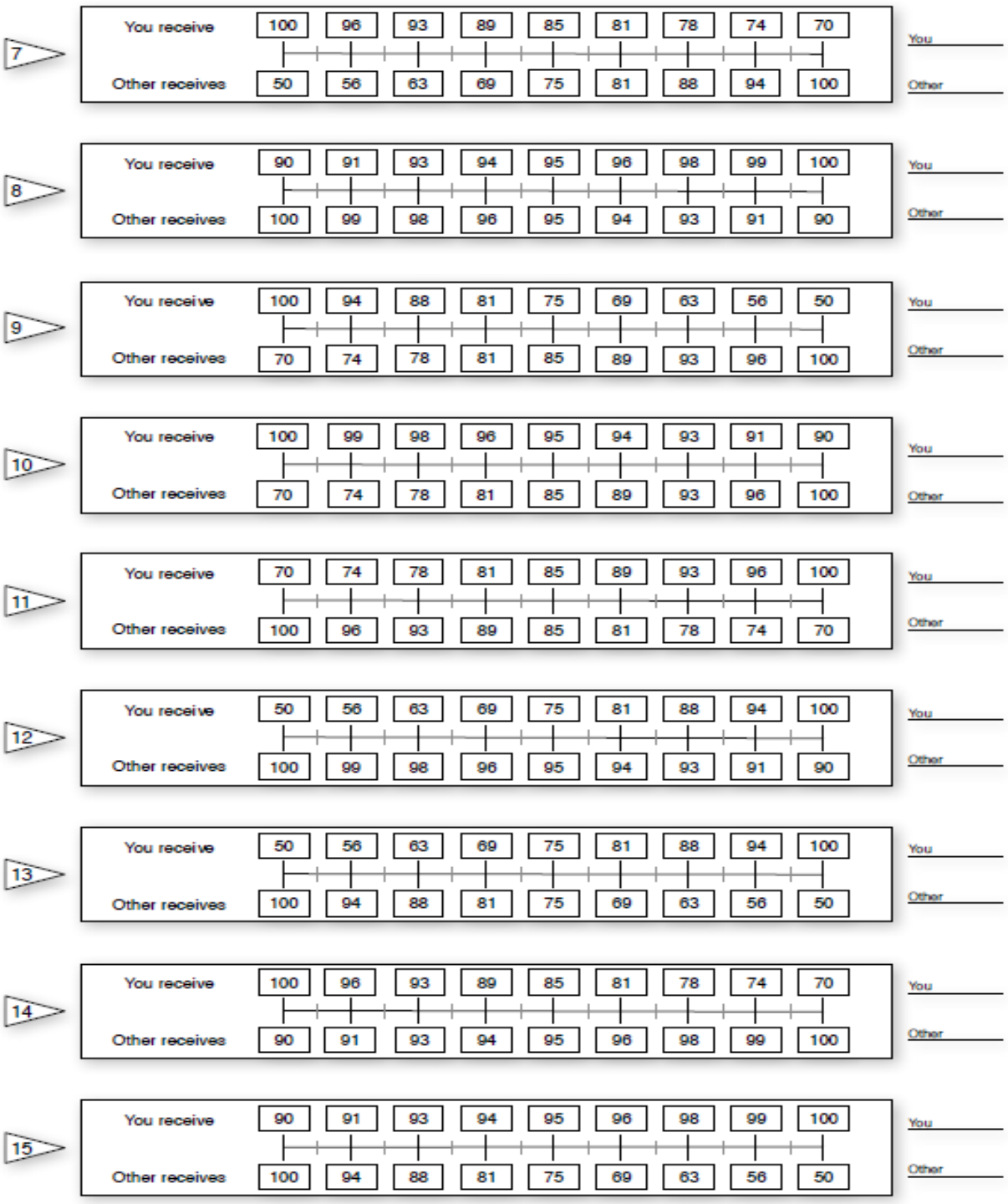
There are no right or wrong answers, this is all about personal preferences. After you have made your decision, **write the resulting distribution of money on the spaces on the right**. As you can see, your choices will influence both the amount of money you receive as well as the amount of money the other receives.

Example:

You receive	30	35	40	45	50	55	60	65	70	You 50
Other receives	80	70	60	50	40	30	20	10	0	Other 40

1	You receive	85	85	85	85	85	85	85	85	85	You
	Other receives	85	76	68	59	50	41	33	24	15	Other
2	You receive	85	87	89	91	93	94	96	98	100	You
	Other receives	15	19	24	28	33	37	41	46	50	Other
3	You receive	50	54	59	63	68	72	76	81	85	You
	Other receives	100	98	96	94	93	91	89	87	85	Other
4	You receive	50	54	59	63	68	72	76	81	85	You
	Other receives	100	89	79	68	58	47	36	26	15	Other
5	You receive	100	94	88	81	75	69	63	56	50	You
	Other receives	50	56	63	69	75	81	88	94	100	Other
6	You receive	100	98	96	94	93	91	89	87	85	You
	Other receives	50	54	59	63	68	72	76	81	85	Other

The nine secondary items of SVO slider measure (Murphy et al., 2011)



About SVO slider measure

The computation of SVO slider measure

($\bar{A}$s) refers to the mean allocation for DM self, while ($\bar{A}$o) means the mean allocation for another person. Both values are calculated from the result of measure, and then for the purpose of 'shifting' the base of the resulting angle to the center of the circle (50, 50), 50 will be subtracted from the each of these mean values. Eventually, the inverse tangent of the ratio between these means will be computed, which can result in a single index of a DM's SVO (See below, Murphy et al., 2011).

$$\mathrm{SVO}^{\circ} = \arctan\left(\frac{(\bar{A}_o - 50)}{(\bar{A}_s - 50)}\right)$$

Based on their model, altruists can be related to an angle which is greater than 57.15^0; prosocials are more likely to have angles between 22.45^0 and 57.15^0; individualists would have angles between -12.04^0 and 22.45^0; and the angle regarded with competitive orientation type may be less than -12.04^0.

Separating the subtypes of prosocial orientation

As the outcomes of secondary Slider Measure items, allocation choices from prosocial orientation DMs would be computed as two mean different scores. Specifically, the first difference score refers to 'average normalized distance between the subject's allocations and the particular allocations that would maximize equality'. The second difference score is defined as 'the means distance between his/her selected allocations and the particular allocations that maximized join payoffs for that item'.

Then, through the way of ‘computing the ratio of the first difference score divided by the sum of both difference scores’, these values can be aggregated into a single meaningful index. As a result, the outcome will be shown as an index between 0 (concerned with a perfect inequality aversion type) and 1 (indicating a perfect joint gain maximization).

Ethics documents

Ethics form

SoE RESEARCH ETHICS FORM

It is important for members of the School of Education, as a community of researchers, to consider the ethical issues that arise, or may arise, in any research they propose to conduct. Increasingly, we are also accountable to external bodies to demonstrate that research proposals have had a degree of scrutiny. This form must therefore be completed for each piece of research carried out by members of the School, both staff and students

The SoE's process is designed to be supportive and educative. If you are preparing to submit a research proposal, you need to do the following:

1. **Complete the form on the back of this sheet**

   A list of prompts for your discussion is given below. Not all these headings will be relevant for any particular proposal.

2. **Arrange a meeting with a fellow researcher**

   The purpose of the meeting is to discuss ethical aspects of your proposed research, so you need to meet with someone with relevant research experience. Discussants are encouraged to take the role of critical friend and approach the research from the perspective of potential participants.

   Track the changes in how your thinking has changed as a result of your decisions; this form is designed to act as a record of your discussion and any decisions you make.

3. **Upload a copy of this form and any other documents (e.g. information sheets, consent forms, materials) to the online ethics tool at**: https://dbms.ilrt.bris.ac.uk/red/ethics-online-tool/applications.

   Please note: Following the upload you will need to answer ALL the questions on the ethics online survey and submit for approval by your supervisor (see the flowchart and user guides on the SoE Ethics Homepage).

If you have any questions or queries, please contact the ethics co-ordinators at: gsoe-ethics@bristol.ac.uk

Please ensure that you allow time before any submission deadlines to complete this process.

Prompts for discussion

You are invited to consider the issues highlighted below and note any decisions made. You may wish to refer to relevant published ethical guidelines to prepare for your meeting. See
http://www.bris.ac.uk/education/research/networks/ethicscommittee/links/
for links to several such sets of guidelines.

1. Researcher access/exit
2. Power and participant relations
3. Information given to participants
4. Participant's right of withdrawal
5. Informed Consent

6. Complaints procedure

7. Safety and well-being of participants/researchers

8. Anonymity/confidentiality

9. Data collection

10. Data analysis

11. Data storage

12. Data protection (see: http://www.bristol.ac.uk/secretary/data-protection/)

13. Feedback

14. Responsibilities to colleagues/academic community

15. Reporting of research

Be aware that ethical responsibility continues throughout the research process. If further issues arise as your research progresses, it may be appropriate to cycle again through the above process.

Name(s): Chengcheng Ma

Proposed research project: Exploring the Relationships among Cultural Background, Learning Experience, Social Value Orientation, and Learning Preference

Proposed funder(s): No

Discussant for the ethics meeting: Shiting Chen

Name of supervisor: Dr Jo Rose, & Dr Shelley McKeown Jones

Has your supervisor seen this submitted draft of your ethics application? Y

Please include an outline of the project or append a short (1 page) summary:

In the field of education, learners' differences regarding learning preference have been

widely explored from a range of perspectives. From a social interaction perspective, learning preference are frequently related to learners' preferences of classroom learning structure, within which they may hold different inclination towards approaches to achieving study goals (Owens and Straton, 1980; Johnson & Engelhard, 1992). Based on existing literature, culture and learning experience are suggested to influence learning preference essentially. However, such influence seems to be contradictory, when considering the real context.

In theory, Chinese collectivism culture should promote cooperative learning preference. However Chinese competitive learning environment may lead to competitive or individualistic learning preference. Also, in the UK, although its individualism culture can theoretically contribute to the development of individualistic or competitive learning preference, the cooperative learning environment in the UK can promote cooperative learning preference. The proposed study may be one of the first to use the concept of Social Value Orientation as a mediating effect to investigate how culture and learning experience affect learning preference. The concept of Social Value Orientation refers to 'stable preferences' and 'personality traits' that can reflect individual preferences for particular patterns of outcomes for oneself and others (Messick, & McClintock, 1968; McClintock, 1978; Smeesters et al., 2003).

In the proposed study, comparative research design with a mixed-methods approach will be adopted. Concerning the comparative design, it is expected that the influence of different culture regarding collectivism/individualism and different education environment on SVO and learning preference can be investigated and compared cross nations (China and UK). Besides, based on the QUAN+qual mixed methods design,

quantitative methods and qualitative methods will be sequentially applied in the proposed study. In the quantitative part, online-based survey will be used to collect quantitative data, which mainly includes, a) participants' demographic information (such as gender, age, and so forth), b) previous cooperative learning experience based on the scale of What Is Happening in this Class (WIHIC, Fraser, 1998), c) cultural background regarding collectivism-individualism, d) applying SVO slider Measure (Murphy et al., 2011) to identify participants' SVOs, and e) examining participants' predispositions in education settings by employing Social interdependence Scales (Johnson & Norem-Hebeisan, 1979). In qualitative part of the study, semi-structured interview with open-ended questions will be applied to explore further how people may think about what affect the formation of learning preference based on their own experience. Also, vignette techniques will be used to strengthen the interview method. Quantitative data analysis will employ path analysis, while thematic analysis will be used to analyse the qualitative data.

Ethical issues discussed and decisions taken (see list of prompts overleaf):

1. Researcher access/exit

In the quantitative study, online questionnaires will be distributed through the department mailboxes of selected universities. In the qualitative part, participants will be contacted based on the email address they provide at the end of the online questionnaire. When quantitative data have been collected, participants will be thanked through the thank-you note at the end of the online questionnaire.

2. Information given to participants

At the start of each study, participants will be given informed consent before

participation by providing them both information sheet (denoting the details of the study, research and complaints procedures, and their rights of withdrawal) and consent form (explicitly asking their consent for voluntarily and permission for the use of their results).

3. Participants right to withdrawal

All participants will be informed about their rights to withdraw during the research process without given any reasons. In the quantitative part of the study, participants can withdraw at any time prior to anonymisation of the data. Once the data are anonymised, participants will no longer be able to withdraw. The quantitative data will be anonymised via separating participants' responses from their contact information, and this procedure will be completed within three days upon their submission. In the qualitative part of the study, participants are allowed to withdraw at any time within 14 days after the completion of the interview. After 14 days, all the qualitative data will be anonymised by coding and renaming participants' personal information, and hence they can no longer withdrawal.

4. Informed consent

In the proposed study, although participants will be undergraduate students who are normally able to read and understand the content of information sheet, the information sheet has been designed to be readable and examined by experienced researchers (the supervisors).

In the informed consent, participants will be informed that, a) research data will be used in a PhD thesis and potentially for publication, b) participants' data will be used

in generalised form for the online survey and non-identifiable in the interviews, by which they will keep anonymous and non-identifiable, c) in the qualitative study, participants will be informed that they need to give consent to being audio recorded.

In the online questionnaire, participants will be informed that they need to read carefully about the information sheet. Ticking the boxes beside the consent statements will indicate that they have read the information sheet and give the consent. In the qualitative study, participants will be asked to read the information sheet, at the same time, the researcher will help to orally explain the information related to the study and double check whether they have understood. Signing their names on the consent form will indicate that they give the consent.

5. Complaints Procedure

All participants have the right to complain about their participation in this doctoral study. At the beginning of the online questionnaire and interview, an information sheet will be given for participants to remind them how to go about the complaint procedure. All the participants will be informed about every change transparently and professionally. Meanwhile, I will provide my supervisors' contact details in the informed consent if participants highlight any difficulties or have any further requirements.

6. Safety and well-being of participants/researcher

The qualitative research will take place in the safe areas, such as school campus and public areas of the library. Since vignette technique will be used in the qualitative study, the textual scenarios may potentially recall participants' some negative

memory. Hence, one the one hand, textual scenarios will be designed to depict a virtual situation with neutral language. On the other hand, when participants feel uncomfortable with the textual scenarios, the researcher will stop the interview and try to make them at ease.

7. Anonymity/Confidentiality

Participants' contact information (i.e. email address) given in the online questionnaire will only be used for the lottery and recruitment of the qualitative study. The storage of participants' contact information will be separated from their responses to the questionnaire. In terms of data regarding their responses in both quantitative and qualitative research, participants will be number coded or renamed after the data are collected. Besides, all participants' names will neither be used in any forms of reporting of the research nor the storage of data. Both quantitative and qualitative data collected in the proposed study will be held in confidence and used only for the purposes agreed with the participants. No identifiable information will be disclosed.

8. Data Collection

In quantitative part of the study, questionnaires will be collected by online method. In qualitative part of the study, recordings will be made to collect the interview data. During the interview, two digital voice recorders will be used, in case one of the equipment breaks down.

9. Data Analysis

Quantitative data analysis will apply path analysis method, while qualitative data

analysis will use thematic analysis. In the qualitative study, copies of the completed transcripts will be sent back to each corresponding participant for review and comments to ensure accuracy and valid interpretation of what has been said.

10. Data Storage

In the informed consent, participants will be made aware of how and why their personal data is being stored, to what uses it is being put and to whom it may be available. Research data will be stored on password-protected devices for security, with backups to guard against equipment loss or failure resulting in loss of data which participants have given their valuable time to complete. University server will be used as the backup for temporary data storage. All of the data collected (including questionnaires, interview transcripts and audio recording) in this research will be sorted with care.

11. Data Protection Act

The data will be stored on the secure university server where the researcher is the only person that has the access. All the personal data of participants will be stored temporarily in the researcher's laptop and locked with a password. This means that only researcher has access to it. All data will be archived after the completion of the study. Contact data will only be used in the proposed study and will not be used for recruiting to a different project.

The researcher will comply with the legal requirements with respect to the use of personal data and the storage as set down by the University of Bristol in their websites for Data protection Information and Guidelines that can be extracted at

http://www.bristol.ac.uk/secretary/data-protection/.

12. Feedback

Participants will be informed through the information sheet that, if they want to follow up the study and know the research outcomes, they can contact the researcher through the email address provided in the sheet. A piece of brief report regarding the research results then will be emailed to the participants' mailbox.

13. Reporting

In the information sheet, participants will be informed that the results of the current study will be reported in the PhD dissertation, journal article and conference presentations.

14. Responsibilities to colleagues/academic community

This research will be conducted to the highest to protect the integrity and reputation of educational and psychological research. All the ethics procedures and codes of professional conduct will be followed throughout the process of the research. Moreover, this research is for my doctoral thesis, which will involve trustworthiness, systematic analysis of data (not cherry-picking), so that readers are not misled by my report.

If there are issues that I cannot handle, I have several directions for assistance depending on the source of the problem: my supervisors and the academic community in the SoE.

If you feel you need to discuss any issue further, or to highlight difficulties, please contact the GSoE's ethics co-ordinators who will suggest possible ways forward.

Signed: Chengcheng Ma (Researcher) Signed: Shiting Chen (Discussant)

Date: 10 January 2019

Information sheet and consent form for online questionnaire

Exploring the Relationships among Cultural Background, Learning Experience, Social Value Orientation, and Learning Preference

You are being invited to take part in a PhD research. Before you decide whether or not to take part, it is important that you understand what the research is for and what you will be asked to do. Please read the following information and do not hesitate to contact the researcher about anything that might not be clear to you.

In this study, you may be asked to complete approximately 15 minutes online questionnaire which aims to examine your cultural background, learning experiences, social value orientation and learning preference. All participants who take part in the project will be given the opportunity to enter a £20 pounds prize draw.

All responses you give in the online questionnaire will be kept confidential and stored securely by the researcher. Anonymised data will be used for publication purposes and archived for future research use. Individual privacy will be kept in all published and written data resulting from the project.

It is up to you to decide whether or not to take part, if you agree to take part then please tick the boxes beside the below consent statements. Your responses to the online questionnaire will be kept anonymously. Note that you can change your mind and withdraw from the study at any time prior to the anonymisation of the data. Once the data are anonymised, you will no longer be able to withdraw. The data will be anonymised via separating your responses from your contact information, and this procedure will be completed within three days upon your submission. Your contact information given in the online questionnaire will only be used for the lottery and recruitment for further study.

Thank you for taking time to consider taking part in this project and if you would like to have any more information or to follow up the results you can contact us using the details below.

Thank you for your interest.

Researcher

Chengcheng Ma, School of Education, University of Bristol.

Email address: cm15397@bristol.ac.uk

Supervisors

Dr Jo Rose, School of Education, University of Bristol.

Email address: jo.rose@bristol.ac.uk

Dr Shelley McKeown Jones, School of Education, University of Bristol

Email address: s.mckeownjones@bristol.ac.uk

SoE ethics committee

Dr Navin Kikabhai, School of Education, University of Bristol

Email address: navin.kikabhai@bristol.ac.uk

Participant consent form

Please carefully read and check the statements below. If you agree to take part in this study, please give your consent by ticking the boxes below.

	Please check
I confirm that I have been given and have read and understood the information sheet for the above study and have asked and received answers to any questions raised.	[]
I understand that my participation is voluntary and that I am free to withdraw during data collection without giving a reason and without my rights being affected in any way.	[]
I understand that researchers will hold all information and data collected securely and in confidence and that all efforts will be made to ensure that I cannot be identified as a participant in the study (except as might be required by law) and give permission for the researchers to hold relevant personal data.	[]

Information sheet and consent form for interview

Exploring the Relationships among Cultural Background, Learning Experience, Social Value Orientation, and Learning Preference

You are being invited to take part in a PhD research study exploring potential influence on the formation of learning preference. Before you decide whether or not to take part, it is important that you understand what the research is for and what you will be asked to do. Please read the following information and do not hesitate to contact the researcher about anything that might not be clear to you.

In this study, you will be asked to read some textual scenarios and then give the responses to a series of interview questions. The interview will last about 40 to 60 minutes and will be recorded by a digital recorder.

All responses you give in the interview will be kept confidential and stored securely by the researcher. Individual privacy will be kept in all published and written data resulting from the project. Your name will be number coded or renamed, after the data are collected, and will never be used in any forms of reporting of the research or in the storage of data.

It is up to you to decide whether or not to take part, if you agree to take part then please complete the consent statements below. Note that you can change your mind at any time during data collection and withdraw from the study by contacting the researcher within 14 days after the completion of interview. After the 14 days, interview data will be anonymised and it will no longer be possible to withdraw.

Thank you for taking time to consider taking part in this project and if you would like to have any more information or to follow up the results you can contact us using the details below.

Thank you for your interest.

Researcher

Chengcheng Ma, School of Education, University of Bristol.

Email address: cm15397@bristol.ac.uk

Supervisors

Dr Jo Rose, School of Education, University of Bristol.

Email address: jo.rose@bristol.ac.uk

Dr Shelley McKeown Jones, School of Education, University of Bristol

Email address: s.mckeownjones@bristol.ac.uk

SoE ethics committee

Dr Navin Kikabhai, School of Education, University of Bristol

Email address: navin.kikabhai@bristol.ac.uk

Participant consent form

If you agree to take part in this study, please give your consent by reading and checking the statements below

Please check

I confirm that I have been given and have read and understood the information sheet for the above study and have asked and received answers to any questions raised. [ ]

I understand that my participation is voluntary and that I am free to withdraw during data collection without giving a reason and without my rights being affected in any way. [ ]

I understand that researchers will hold all information and data collected securely and in confidence and that all efforts will be made to ensure that I cannot be identified as a participant in the study (except as might be required by law) and give permission for the researchers to hold relevant personal data. [ ]

I understand that agreeing to take part mean that I am willing to: be interviewed by the researcher and allow the interview audio-recorded. [ ]

_____ _____ _____

Name of Participant Signature Date

_____ _____ _____

Name of Researcher Signature Date

Ethics approval

RE: Ethical Approval Form

NK Navin Kikabhai
周三 2/13, 8:46
Chengcheng Ma; Jo Rose; Shelley McKeown Jones

全部答复

你已在 2019/2/13 10:08 答复。

Dear Chengcheng,

Your application has been signed off, thank you for your patience with this.

Regards

Navin

From: Chengcheng Ma <cm15397@bristol.ac.uk>
Sent: 10 February 2019 17:44
To: Navin Kikabhai <navin.kikabhai@bristol.ac.uk>
Subject: 答复: Ethical Approval Form

Archived or 'signed off' applications.

Project title	Submitter	On behalf of	Faculty	Department	Supervisor	Status	☑
Exploring the Relationships among Cultural Background, Learning Experience, Social Value Orientations, and Learning Preferences [update] [comment]	Chengcheng Ma	Chengcheng Ma	Faculty of Social Sciences and Law	Graduate School of Education	Jo Rose	Signed off	Yes