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HOW TEACHERS SUPPORT STUDENTS' MASTERY GOAL ORIENTATIONS IN VIETNAMESE CLASSROOMS: THE SIGNIFICANCE OF RELATEDNESS

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Abstract

Relatedness is a basic psychological need that, when satisfied, facilitates well-being and results in higher motivation and achievement (Ryan & Deci, 2000a). In societies such as Vietnam, where individuals are influenced by Confucian cultural values that emphasise interpersonal relationships, relatedness with significant others is considered an important need for student academic motivation (Bao & Lam, 2008; Chong, Huan, Quek, Yeo, & Ang, 2010). In Vietnamese classrooms, where teachers are viewed as parents who are responsible for the development of students' knowledge and moral behaviour, student need for relatedness to teachers is considerable. However, few studies have explored the importance of the influence of teacher-student relatedness on Vietnamese students' learning motivation, especially in settings where student-centered models are implemented with the aim of improving student competence and skill mastery.

The aim of the study was to investigate the contribution of teacher-student relatedness, along with classroom goal structures, and self-efficacy, in the prediction of achievement goals and academic achievement for high school students in Vietnam. The three key objectives were: (1) to explore how teacher-student relatedness, classroom goal structures, and self-efficacy predict achievement goals and academic achievement; (2) to examine the similarities and/or differences in levels of teacher-student relatedness, classroom goal structures, achievement goals, and self-efficacy across demographic factors; and (3) to test a model in which teacher-student relatedness, accompanied by

classroom goal structures and academic self-efficacy, is assumed to affect student achievement goals and academic achievement.

The study employed a sequential mixed-methods approach with a quantitative phase followed by a qualitative phase. Data was sourced from surveys of 353 tenth grade students, along with individual interviews of 12 tenth grade students, from senior high schools in Southern Vietnam. In the quantitative phase, a model comprising the measured variables of teacher-student relatedness, classroom goal structures, self-efficacy, achievement goals, and academic achievement was developed. Path analysis indicated that the model provided a good fit for the data. The results showed that students with a high level of teacher-student relatedness tended to develop mastery goal orientation, leading to high achievement. The results also indicated that there was a cross-level interaction between classroom goals structures and achievement goals. Students who perceived a high level of both mastery and performance goal structures reported a tendency to adopt mastery goals. In addition, self-efficacy was significantly related to both mastery and performance goals, but not related to achievement.

The findings from the qualitative phase supported the relationships explored in the quantitative phase. Analysis of interviews indicated students felt a need for getting close to their teacher, and teacher-student relatedness had an impact on students' motivation as they made attempts to please their teacher. Data also indicated that students relied on teachers as a good source of knowledge, and students' orientation to achievement was affected by their perceptions of the instructions emphasised in the class. Students also reported uncertainty in their

perceived self-efficacy as they tended to exert little effort when encountering difficult tasks, and expected to receive considerable support from teachers.

The results of this study significantly contribute to the knowledge of the development of learning and motivational orientations for both Vietnamese students, and students from collectivist cultures more broadly. The findings highlight the salient contribution of teacher-student relatedness and classroom goal structure (both mastery and performance goal structures) to students' adoption of mastery goals in a collectivist context. The results show that an effective way to positively impact mastery goals is through students' perceptions of emotional support from teachers. Moreover, it is the presence of performance goal structures that can also be a driving force for students to adopt mastery goals. The results also report low efficacy beliefs in students from a collectivist culture, which suggests that these beliefs need to be nurtured via effective teaching practices.

This study has important practical implications for Vietnamese education. The findings of this study is likely to inform the profiles of achievement goals for Vietnamese senior high school students. Based on this information, teachers and educators can help improve the quality of teaching and learning through the development of mastery goal orientation.

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List of Abbreviations

AFIs	Approximate Fit Indices
AMOS	Analysis of Moment Structures
ANOVA	Analysis of Variance
AVE	Average Variance Extracted
BNT	Basic Needs Theory
CHC	Confucian Heritage Culture
CET	Cognitive Evaluation Theory
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
COT	Causality Orientations Theory
CR	Composite Reliability
EFA	Exploratory Factor Analysis
GCT	Goal Contents Theory
GFI	Goodness-of-fit Index
MANOVA	Multivariate Analysis of Variance
ML	Maximum Likelihood
MOET	Ministry of Education and Training
OIT	Organismic Integration Theory
PALS	Patterns of Adaptive Learning Survey Scales

PCA	Principal Component Analysis
RMSEA	Root Mean Square Error of Approximation
SDT	Self-determination theory
SEM	Structural Equation Modelling
TASC	Teacher As Social Context
VIF	Variance inflation factor

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Statement of Original Authorship

The work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Signature: _____

Date: _____15/7/2016_____

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Chapter 1 Introduction

1.1 Introduction

In the early 21st century, the Vietnamese government initiated a large-scale educational reform involving the implementation of a new curriculum in all schools (Ministry of Education and Training (MOET), 2001). This reform was motivated by increasing societal pressure demanding that students be equipped with new knowledge and skills to meet the requirements for current and future labour force demands (Pham, 2008). The reform promoted strategies focusing on improving the quality of education, and modernising teaching and learning methodologies. Along with the introduction of a new curriculum, changes in students' academic behaviour in school settings have been a concern to central authorities (MOET, 2005). Rather than focusing on rote learning and memorisation, the new curriculum standards emphasise the importance of developing student interest, problem solving abilities, cooperative learning, and mastery of key concepts. Since traditional methods of teaching and learning (e.g. teacher-centred approaches and passive learning) are ineffective in providing learners with such skills, Vietnamese educators chose to adopt new teaching and learning approaches that originated from the West (e.g. student-centred approaches and cooperative learning) to support the goals of the reform. They believed that with a student-centred approach, Vietnamese students were oriented by a mastery-focused pedagogy which considers students' competence and comprehension as priorities, consequently developing new skills (e.g. independence, creativeness, and activeness) for the labour market (Pham, 2010).

However, the transition from traditional learning approaches to student-centeredness has produced a number of challenges for Vietnamese educators (Hamano, 2008; Nguyen, 2008; Pham, 2010). Researchers indicate that teachers play a critical role in implementing new learning approaches, and they must acquire adequate knowledge of the new methods, as well as being highly motivated to enact them (Hamano, 2008). In addition, there are serious conflicts between many principles of student-centred approaches and the traditional perceptions of Vietnamese teachers, which are expected to influence the effective implementation of this new approach (Pham, 2008; Phuong-Mai, Terlouw, & Pilot, 2005; Tran, 2013a).

Since a student-centred approach is new for Vietnamese schools, and the issues regarding culturally appropriate pedagogy have not been officially considered by Vietnamese educators, the goals of the recent educational reform have not been fully achieved (Pham, 2008, 2010). For example, the teaching in the higher education system is still characterised by the traditional teaching method, and a large number of Vietnamese university graduates do not meet employers' expectations due to the low quality of teaching and learning at the tertiary level (Hayden & Lam, 2010; Nguyen, 2013). Thus, improving the quality of education by 2020 has become a key target of the Vietnamese government (Nguyen, 2013).

Research shows that socio-cultural factors may support or hinder students' adoption of a new learning approach, and suggests that teachers play an important role in facilitating students' motivation to learn when educational changes are being implemented (Nguyen, Terlouw, & Pilot, 2006; Pham, 2010; Tran, 2013b). However, little research has been undertaken to investigate the dynamic nature of

teacher-student relationships and how they link to students' academic achievement. Research indicates students' motivation is influenced by a learning environment in which autonomy (sense of psychological freedom and perceived choice over one's actions), and relatedness (sense of being connected to significant others including parents, teachers, and peers) are fundamental factors (Reeve, 2012; Ryan & Powelson, 1991). While a large body of research has focused on autonomy (Cho, Weinstein, & Wicker, 2011; Ciani, Sheldon, Hilpert, & Easter, 2011; Huang & Liaw, 2007; Reeve, Jang, Carrell, Jeon, & Barch, 2004; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005), examining relatedness between teachers and students is limited in collectivist cultures, mainly in Chinese contexts (Bao & Lam, 2008; Furrer & Skinner, 2003; Zhou, Lam, & Chan, 2012). Thus, this study was conducted to address this gap in the Vietnamese context as well as to contributing to the research literature on teacher-student relatedness more broadly.

Drawing on two major motivation theories, self-determination theory and achievement goal theory, the study aimed to (1) explore how teacher-student relatedness, classroom goal structures, and self-efficacy predict achievement goals and academic achievement; (2) examine the similarities and/or differences in levels of teacher-student relatedness, classroom goal structures, achievement goals, and self-efficacy across demographic factors (e.g. gender and class type); and (3) test a model in which teacher-student relatedness, accompanied by classroom goal structures and academic self-efficacy, is assumed to affect students' achievement goals and academic achievement.

The following section briefly outlines the background of the problem investigated by the study. Subsequent sections describe the context of Vietnamese education, and the important role of teacher-student relationships in the reform. Following a consideration of these aspects, the purpose of the study and the research questions will be presented. The last section provides an outline of the subsequent chapters in the thesis.

1.2 Background

Decades of research have demonstrated the benefits of effective teacher-student relationships for students. A number of studies indicate teacher-student relationships are significant for students' successful adjustment at school (Belmont, Skinner, Wellborn, & Connell, 1992; Davis, 2003; Hughes, Wu, Kwok, Villarreal, & Johnson, 2012; Maulana, Opdenakker, Stroet, & Bosker, 2013; Wentzel, 1998). In addition, research has highlighted the importance of teacher-student relationships on students' adoption and internalisation of socially valued goals (Anderman, Andrzejewski, & Allen, 2011; Wentzel, 1999), feelings of self-worth and self-esteem (Connell & Wellborn, 1991), academic engagement and performance (Bong, Hwang, & Song, 2010; Furrer & Skinner, 2003; Wentzel, Russell, & Baker, 2016), and academic achievement (Hughes, Luo, Kwok, & Loyd, 2008; Song, Bong, Lee, & Kim, 2015). At the same time, researchers have focused on the pivotal role of teachers who not only communicate social norms and expectations to their students, but also structure learning environments to promote students' pursuit of social or achievement goals (Ames, 1992a; Shim, Cho, & Cassady, 2012; Wentzel, 1999; Wentzel, Battle, Russell, & Looney, 2010).

According to self-determination theory (Deci & Ryan, 1991), the need for relatedness to teachers is one of the three fundamental needs of human beings that need to be fulfilled for the development of intrinsic motivation. Along with autonomy and competence, relatedness is important because it affects internalisation and learning motivation (Ryan & Deci, 2000a). Researchers suggest that socio-emotional relatedness with teachers is likely to contribute to students' motivational orientation and achievement when students are satisfied with emotional involvement, provision of structure, and autonomy support from their teachers (Bao & Lam, 2008; Furrer & Skinner, 2003; Roorda, Koomen, Spilt, & Oort, 2011).

Some cross-cultural researchers, however, have questioned whether students from cultures with different cultural values are likely to benefit in a similar manner from satisfaction of this psychological need (Bao & Lam, 2008; Jang, Reeve, Ryan, & Kim, 2009; Zhou et al., 2012). For example, Jang et al. (2009) examined whether Korean high school students benefit from satisfaction of the need for autonomy, competence, and relatedness. Their findings indicated that, similar to students in the West, Korean students' satisfaction of basic psychological needs was associated with positive school functioning. However, although they reported that Korean students still need autonomy and benefit from autonomy support, there was no clear evidence that Korean students experienced high levels of relatedness in classrooms. In addition, Zhou et al. (2012) argued that there are some cultural differences in the process of internalisation that mediates between relatedness and motivation in Chinese and American students. To enhance understanding of the universal importance of all basic psychological needs, Jang et al. (2009) called for more research to assess these needs as

predictors and potential outcomes. Given that teacher-student relationships are considered to be critical to students' motivation in the Vietnamese learning context (Pham, 2008), the present study focuses on examining students' need for relatedness to teachers as a predictor of students' achievement goals and academic achievement.

1.3 Context

Vietnamese education has undergone significant reforms since the economic liberalisation policy (known as *Doi Moi*) was introduced in 1986. Since that time, the process of educational reform in Vietnam has consisted of two main periods. The first ten-year plan for educational development was presented in The Third Plenary Session of the Communist Party's Central Committee in 1991. The basic task of this reform was "to shift from meeting the needs of a subsidised, centrally planned economy to meeting the needs of a multi-sector, state-managed, socialist oriented market economy..." (MOET, 1995, p. 14). The education system was designed to produce a labour force ready for the challenges of the new economy (Nguyen & Sloper, 1995). Strategic initiatives included the universal completion of primary education for all students, and increasing the net enrolment of primary school children (Socialist Republic of Vietnam (SRV), 1995). On December 28, 2000, Vietnam announced the attainment of universal primary education, with a net enrolment ratio of 95 %, thus fulfilling the objectives of the national plan (Hamano, 2008).

Following this achievement, improving the quality of education by 2010 became one of Vietnam's key educational goals. With the dramatic changes in the economy after the introduction of Doi Moi policy, education in Vietnam aimed to

prepare students to become independent and creative thinkers (MOET, 2001). A shift from the quantitative expansion of increasing primary school enrolments to a focus on qualitative improvement became a challenge for the Vietnamese government (Hamano, 2008). With respect to future development based on three key themes of standardisation, modernisation, and socialisation, Vietnam had to consider a strategy for raising educational quality to meet the demands of its labour market (Huong & Fry, 2004). In December, 2001, the National Education Development Strategy for 2001-2010 (MOET, 2001) outlined another ten-year master plan in which the effective implementation of a new curriculum is central to improving the quality of education in Vietnam. The new curriculum was first introduced in 2002 for primary education (from grades 1 to 5) and in 2006 it was officially implemented for secondary education (from grades 6 to 12).

A significant characteristic of the new curriculum was the promotion of a student-centred learning approach. The education minister asserted that:

> Learning by rote needs to be eliminated from all schools and replaced with student-centred learning …Any teachers found failing to change their teaching style would be listed and provided with video-tapes showing new teaching techniques. If they still failed to improve, they would be sent for intensive training (Tran, 2000, p.14, cited in Pham, 2010).

The Vietnamese education authorities proposed that the student-centred learning approach, which emphasises students' active role in the learning process, was likely to provide students with the ability to develop knowledge and skills for current and future labour demands (MOET, 2001). With the new approach,

students were positioned in the centre of learning process, with teachers considered as ‘facilitators’ of knowledge, instead of ‘authoritarians’ of knowledge. In addition, students are encouraged to engage in thinking, class participation, and problem-solving (Hamano, 2008). It was believed that the successful implementation of the student-centred learning approach in Western schools would assist the shift in teaching and learning in Vietnam (Pham, 2008).

For more than 100 years, educators and researchers have found that student-centred learning is beneficial for improving students’ critical thinking skills, problem solving skills, and reflective thinking skills (McCombs, 1997, 1999, 2003). A student-centred approach increases students’ responsibility for learning, and shapes students’ learning experiences (Brown, 2008). In a learner-centred framework, students are perceived as active participants in the learning process through their role in applying, analysing, synthesising, and evaluating their knowledge and skills. Additionally, a learner-centred framework provides a positive learning environment that helps students pursue their own learning goals. Research suggests that students’ perceptions of supportive learning environments created by learner-centred teaching practices can account for variation in students’ achievement goals (Meece, Herman, & McCombs, 2003).

Although the implementation of a learner-centred approach in Vietnamese classrooms is central to the recommendations provided in the current educational reform documents, few studies have been conducted to investigate the factors that may influence the success of the new approach (Pham, 2010). Most of the studies that have addressed the current education reform in Vietnam have focused on improving the quality of teacher education by investigating teaching content, and

methods (Hamano, 2008; Nguyen, Dekker, & Goedhart, 2008). The rationale for this focus was based on the assumption that teachers need to learn new methods of instruction for the effective implementation of the new curriculum. McCombs (2003) indicated that among the domains of learner-centred principles, "positive interpersonal relationships and classroom climates are among the most consistent, significant predictors of student motivation and achievement" (cited in Davis, 2006, p. 196). Thus, more research is needed to investigate affective support as another learning environment dimension, especially as a potentially important component of mastery-oriented structures (Turner et al., 2002). In order to successfully implement a mastery-focused pedagogy in the educational reform, it is important for Vietnamese researchers to consider not only instructional support, but also affective support in the development of students' motivation.

Research suggests that the values in a Confucian-collectivistic society may affect the successful implementation of a student-centred learning approach in Vietnam (Le, 2005; Nguyen, 2008; Thanh & Gillies, 2010). As one of the Confucian Heritage Culture (CHC) countries, the existing cultural and educational characteristics in Vietnam may not be aligned with Western educational principles (Phuong-Mai et al., 2005). According to Confucian teachings, concepts of teaching and learning are based on relationships between teachers and students in which teachers 'teach' and students 'learn'. Teachers are considered as experts who impart their wisdom to students. In return, students are expected to respect and obey their teachers (Pratt, Kelly, & Wong, 1999). Therefore, pedagogical practices such as arguing and discussing with teachers are not encouraged in the classroom because these behaviours are considered to be rude and disrespectful (Pham, 2010). For Vietnamese students, the teacher represents the embodiment of

knowledge, authority, and control (Le, 2005). Nevertheless, teachers involved in a cultural context governed by Confucianism are likely to exercise their authority with love, care, and nurture (Ho, Jin, & Watkins, 2001).

The Confucian view of the relationship between students and teachers is significantly different from a Western view. From a Western perspective, teachers are viewed as facilitators of student learning (Pratt et al., 1999). Teachers typically provide general instructions for tasks, and then encourage students to challenge their pre-existing knowledge, and construct new knowledge. Students, in turn, are expected to ask questions, discuss ideas, and challenge competing ideas rather than passively receive the authorised knowledge of teachers. While a Western perspective encourages interactions between teachers and students, the Confucius culture of learning does not encourage face- to- face discussions, instead rewarding receptiveness and conformity in students. These different perspectives of teacher-student relationships, formed on the basis of the nature of the teaching and learning environment, have become one of the most important constraints on the implementation of student-centred learning approaches in Vietnam (Nguyen, 2011a; Pham, 2010; Tran, 2013b).

Research suggests that it may be difficult for Vietnamese teachers to accept pedagogical practices that tend to threaten their authority and put them at risk of losing their role as the sole knowledge provider (Pham, 2010). For example, some researchers doubted the possibility that a teacher would lower themselves from a position of sacred and inviolable correctness to someone who dares to accept they might make mistakes or not know the answer (Phuong-Mai et al., 2005). Supposing that a teacher is unable to answer students' questions, they are seen as

losing face. From Confucian perspectives, losing face is considered as seriously personally damaging, and should be avoided at all costs (Hofstede & Hofstede, 2005). Thus, it is not surprising that Vietnamese teachers are reluctant to adopt many of the student-centred principles which stand in direct contrast to the principles of a Confucian teaching and learning philosophy (Pham, 2008). One way to reconcile the conflict between Confucian and Western values may be to try to incorporate the existing cultural values into the implementation of Western learning and teaching principles (Phuong-Mai et al., 2005).

Despite some success achieved after the reform from 2001 to 2010, the quality of current educational efforts in Vietnam is still the subject of considerable public criticism. As stated earlier, a large number of Vietnamese university graduates do not meet employers' expectations (Hayden & Lam, 2010; World Bank, 2008). For example, with regard to English language learning, most Vietnamese students cannot communicate effectively even after a long period of learning English, leading to a lack of university graduates with the English skills needed for jobs as interpreters, tour guides or teachers of English (Mai & Iwashita, 2012). After conducting examinations and evaluating Vietnamese education in the period from 2000 to 2012, educators concluded that the quality of education and human resources was not responsive to supporting the socio-economic development of the country, and that a focus on examinations, degrees, and achievements still dominated teaching and assessment in Vietnamese society (Nguyen, 2013). Therefore, the Vietnamese government has placed a strong emphasis on improving the quality of education in the National Education Development Strategy in the period of 2011-2020 (MOET, 2012).

1.4 Significance

The present study is significant at both practical and theoretical levels. At a practical level, despite a general recognition that teachers play an important role in facilitating students' motivation to learn when educational changes are being implemented (Nguyen et al., 2006; Pham, 2010; Tran, 2013b), little research has been conducted to investigate the dynamic nature of teacher-student relationships and how they link to students' academic achievement in Vietnamese contexts. The present research will examine how students' need for relatedness to teachers affects their achievement goals and academic achievement. In addition, since students' adoption of achievement goals heavily depends on their perceptions of goal structures of the learning environment (Meece, Anderman, & Anderman, 2006), the emphasis of teachers' instructions in Vietnamese classrooms is expected to be related to students' achievement goals. Self-efficacy is also considered to be associated with classroom climate in which instructional preferences and teacher-student relationships contribute to growth in students' confidence (Fast et al., 2010; Peters, 2013). Factors such as teacher-student relatedness, classroom goal structures, and self-efficacy have been identified in previous studies as having the potential to influence students' adoption of achievement goals (Ciani et al., 2011; Fenollar, Román, & Cuestas, 2007; Urdan, 2004a). Therefore, a model in which teacher-student relatedness, classroom goal structures, and academic self-efficacy act as predictors of achievement goals and academic achievement was proposed and tested in this study.

This study will help investigate the effect of teacher-student relatedness, classroom goal structures, and self-efficacy on students' achievement goals and academic achievement, as well as identifying the similarities and/or differences

between groups. The outcomes of this study will provide empirical evidence on the factors influencing students' adoption of achievement goals within the Vietnamese learning context and help significant others such as educators and teachers identify possible ways to foster students' achievement goals, consequently contributing to improving the quality of education.

At a theoretical level, the study addresses the gaps in the existing literature on student motivation in collectivist cultures. The literature indicates that autonomy and relatedness are fundamental factors in student motivation (Reeve, 2012; Ryan & Powelson, 1991). However, while the literature has demonstrated a large body of research regarding autonomy (Cho et al., 2011; Ciani, Middleton, Summers, & Sheldon, 2010; Reeve et al., 2004; Vansteenkiste, Simons, et al., 2005), there are a few studies on relatedness, focusing on Chinese context (Bao & Lam, 2008; Zhou et al., 2012). This study makes a contribution to the literature by providing an understanding of teacher-student relatedness in relation to achievement goals and academic achievement within a Vietnamese collectivist culture. Additionally, collecting qualitative data helps to understand the rationales for the patterns of the relationships between teacher-student relatedness and other constructs identified in Vietnamese high schools.

1.5 Purpose

This study sought to explore the relationships among teacher-student relatedness, classroom goal structures, achievement goals, self-efficacy, and academic achievement in Vietnamese high school students. Specifically, the direct and indirect effects of teacher-student relatedness, classroom goal structure, and

self-efficacy on achievement goals and academic achievement are the focus of this study. The following research questions guided this study.

1. Does teacher-student relatedness, classroom goal structures, and self-efficacy predict achievement goals in Vietnamese senior high school students?

2. Does teacher-student relatedness, achievement goals, and self-efficacy predict academic achievement in Vietnamese senior high school students?

3. Are there significant differences in teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement across demographic factors?

4. What is the relationship between teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement of Vietnamese senior high school students?

The theoretical framework guiding this study will be briefly examined here and elaborated further in Chapter 2.

1.6 Theoretical frameworks used in the study

A brief overview of the theories underpinning the study is presented in this section.

1.6.1 Self-determination theory

Self-determination theory (SDT), first developed by Deci and Ryan (1985), is concerned with people's inherent growth tendencies and innate psychological needs (Ryan & Deci, 2000a). According to this theory, all individuals are assumed to have natural, innate, and constructive tendencies to develop an ever more elaborated and unified sense of self. The theory suggests that three fundamental

psychological needs – the needs for competence, relatedness, and autonomy – provide the basis for identifying the characteristics of the environments that are supportive or antagonistic toward the innate tendencies. That is, when the three needs are satisfactorily met, social environments are assumed to be supportive. By contrast, when these needs are not met, associated factors are assumed to be antagonistic. In this way, SDT embraces an integrating perspective of an "organismic" (individuals have an innate propensity to interact with the external environment in order to exist and develop), and a "dialectical" (motivation can be enhanced or undermined by social and contextual factors) framework for human growth and motivation (Deci & Ryan, 2002).

Self-determination theory is concerned not only with human needs, but also the inherent motivation of human beings. According to SDT, there are two broad categories of motivation: intrinsic and extrinsic motivation (Deci, Vallerand, Pelletier, & Ryan, 1991). The pathways by which needs for autonomy and competence contribute to maintaining and enhancing intrinsic motivation have been clearly demonstrated, but relatedness is involved in intrinsic motivation through internalization. Specifically, students who feel connected to and cared for by their parents and teachers are likely to have a more fully internalized regulation for positive school-related behaviours (Ryan & Deci, 2000b). Given the significant role of teachers in Vietnamese education (discussed further in Chapter 2), relatedness to teachers needs to be examined, particularly in relation to students' academic performance.

1.6.2 Achievement goal theory

Achievement goal theory is another motivational theory that can provide theoretical perspectives on student motivation (Ames, 1992b; Dweck, 1986). Many studies conducted in academic settings have found that achievement goals differentially influence students' motivation and performance in their classes (Grant & Dweck, 2003; Harackiewicz & Sansone, 2000; Jiang, Song, Lee, & Bong, 2014; Keys, Conley, Duncan, & Domina, 2012; McGregor & Elliot, 2002). Early research identified two main types of achievement goals: *mastery goals* and *performance goals* (Ames, 1992b; Dweck, 1986; Nicholls, 1984). Mastery goals reflect one's aspirations for developing competence and task mastery, and performance goals reflect one's aspirations for demonstrating competence relative to others. Accordingly, mastery goal oriented students are more likely to seek challenges, persist with obstacles, and use deeper processing strategies (Dweck & Leggett, 1988). In contrast, performance goal oriented students tend to avoid challenge, display little effort on encountering difficulty, and use ineffective strategies (Ames, 1992a; Pintrich & Schunk, 2002).

Since achievement goal theory was developed to explain children's learning and performance on academic tasks in school settings, it is appropriate to employ this theory for understanding achievement goal orientations in high school students for this study. Pintrich and Schunk (2002) pointed out that achievement goal theory is highly relevant to explaining different academic behaviours and performances because it includes cognitive, affective, and behavioural components. The theory not only informs the reasons why students pursue achievement tasks but also provides an insight into how students define, experience, and respond to achievement situations.

1.6.3 Self-efficacy theory

Self-efficacy theory was developed by (Bandura, 1977). In self-efficacy theory, the concept of self-efficacy refers to individuals' beliefs about their capabilities to effectively perform certain tasks. Bandura (1977) assumed that expectations of personal efficacy determine whether coping behaviour will be initiated, how much effort will be expended, and how long it will be sustained on encountering obstacles. From this assumption, in academic settings students with high self-efficacy are more likely to engage in tasks that help develop their new skills and capabilities, whereas those with low self-efficacy tend to avoid these tasks.

Since self-efficacy influences cognitive development and functioning through cognitive, motivational, affective, and selection processes, it helps regulate people's thoughts, feelings, motivation, and behaviour (Bandura, 1993). Many studies indicate that self-efficacy influences not only individuals' motivation but their achievement and self-regulation as well (for a review see Schunk & Pajares, 2009). As an important mediator of all types of achievement behaviours (Pintrich & Schunk, 2002), self-efficacy should be a critical component in understanding goal orientation and academic achievement of students in this study.

1.7 Overview of the methodology

The research design employed a sequential mixed-methods approach incorporating both quantitative and qualitative methodologies. Phase 1 utilised quantitative methods incorporating a survey, followed sequentially by a qualitative method phase utilising individual interviews. A pilot study preceded the two

phases. A summary of the research design for each of these studies is presented below.

1.7.1 Pilot study

The pilot study was designed to help determine the final version of survey items in the questionnaire. The questionnaire, consisting of four pre-existing measures used in the quantitative study, was piloted with 10th grade students.

1.7.2 Quantitative study- Phase 1

The purpose of this study was to investigate the relationships among the constructs, using a self-report survey. This study used a questionnaire adapted from two scales: *Teacher As Social Context* (TASC) (Belmont et al., 1992); and *Pattern of Adaptive Learning Survey* (PALS) (Midgley et al., 2000). Each of the four measures consisted of Likert style items, with answers ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was administered to students at two different senior high schools in Ba Ria – Vung Tau province in Vietnam (see Appendix A).

1.7.3 Qualitative study – Phase 2

The qualitative study aimed to further inform the results of Phase 1 by investigating the relationships identified in the model at a greater depth. Following the quantitative data collection phase, students from Phase 1 (n=12) were selected for individual in-depth interviews (see Appendix B). The purpose of the interviews is to provide further understanding of the variables (teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy), and the relationships among them from the experiences of Vietnamese senior high school students.

1.8 Thesis Outline

This chapter has provided an introduction to the study, and has outlined the background of the problem, context, significance, purpose of the study, and an overview of the methodology.

Chapter 2 provides a review of the literature focusing on teacher-student relatedness, classroom goal structure, self-efficacy, and achievement goal. It also includes the theoretical framework guiding the study that utilises self-determination theory (SDT) and achievement goal theory, in addition to providing an overview of the cultural characteristics of East Asian students.

At the beginning, the chapter focuses on Vietnamese cultural values under the influence of collectivism and Confucianism, providing an understanding of factors that have an impact on Vietnamese students' academic motivation. These values include the sense of belonging/collectivist spirit, filial piety and the family, respect for learning and teachers, and saving face and harmony. Then, theories of motivation are described in details, following the structures of what they are, how they develop, how they pertain to academic motivation, and how different they are across cultures. Finally, the chapter ends with an integration of these theoretical frameworks that helps explain students' achievement goal profiles in a collectivist culture like Vietnam.

Chapter 3 outlines the methodology used for the study. A detailed description of each part of the process is provided (e.g., the selection of participants, measures utilised, and statistical techniques used for data analysis). Some supportive theoretical underpinnings for the methodological procedures are also discussed.

Chapter 4 presents the results of the analysis of the data from the two study phases. For the quantitative phase, the results of the descriptive analysis, factor analysis, multivariate analysis of variance (MANOVA) and analysis of variance (ANOVA), regression analysis, and path analysis are presented. The results of the qualitative analysis are then considered in order to provide support to the paths identified in the quantitative analysis.

Chapter 5 provides a discussion of the results of the study, where the findings are discussed in relation to the individual hypotheses developed.

Chapter 6 presents implications of the results, limitations of the study, and recommendations for future research in the development and maintenance of teacher-student relatedness in high school students.

Chapter 2 Literature Review

2.1 Overview

This chapter consists of four main parts. The first section addresses Vietnamese cultural values relevant to academic settings. The second section provides an overview of the motivational theories underpining this study, including self-determination theory, achievement goal theory, and self-efficacy theory. The third section discusses the relationships among teacher-student relatedness, classroom goal structures, achievement goals, self-efficacy, and achievement. Finally, the research questions guiding the study will be presented with the hypotheses that are derived from a consideration of the literature.

2.2 Overview of Vietnamese cultural values

In this attempt to address the applicability of motivational theories to Vietnamese students, it is necessary to understand the cultural values central to the Vietnamese academic setting. The following section provides an overview of Vietnamese cultural values under the influence of collectivism and Confucianism.

From the perspectives of Hofstede and Hofstede (2005), collectivism is regarded as a major characteristic of Vietnamese society. Vietnam scores high on the Power Distance Index (PDI) (Malaysia scores highest with 104; China: 80; Singapore: 74; Vietnam: 70; Hong Kong: 68; Korea: 60; Taiwan: 58; Japan: 54), with power distance referring to the extent to which “the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally” (Hofstede & Hofstede, 2005, p. 46). Normally, countries with a high score in the PDI have a low score in individualism (Hofstede &

Hofstede, 2005), and Vietnam is no exception. Accordingly, it can be asserted that to a large extent, Vietnamese society is a collectivist society. Hofstede (2001) indicates that inequality is the basis of societal order in high-PDI countries and the hierarchy is necessary to the proper functioning of society. As a high-PDI society, Vietnam is characterised as having a tendency toward a hierarchical and authoritative leadership structure (Nguyen, Elliott, Terlouw, & Pilot, 2009; Pham, 2008).

In a collectivist culture, people from birth onwards are integrated into strong, cohesive in-groups, which are believed to protect them throughout their lives but in turn expect their unquestioning loyalty (Hofstede, 2001). Therefore, collectivists tend to value group performance and group rewards, more than personal performance (Earley, 1994). They also emphasise unconditional relatedness and place "relationships in the front and themselves in the background" (Triandis, 1994, p. 219). As collectivists, Vietnamese people tend to give priority to relatedness and desire to live and work in the same community or cultural/ethnic enclave (Nguyen, 2002). The sense of relatedness, or community spirit is reflected in moral and citizenship education for high school students. Doan (2005) indicates that citizenship education in high schools highlights the notion of developing a 'socialist citizen', who is described as "a patriot who loves manual labour, and knows how to live and work for the harmony and benefits of the comunity" (p. 455).

In addition to a collectivist orientation, Vietnamese society is governed by Confucian principles, as the country has experienced nearly one thousand years of Chinese imperial rule (Huong & Fry, 2004). It is believed that Confucian ideas

and ideology are deeply rooted in Vietnamese minds and set a powerful interpersonal norm for daily behaviours, attitudes, and practices (Park, 2000). Although Vietnam claimed independence from Chinese regimes in 938 AD, the evidence of Confucianism still appear to be strong in Vietnam (Tran, 2013b). As part of the Confucian world, Vietnam shares common values with other Confucian Heritage Culture (CHC) nations (e.g., Vietnam, Japan, Korea, Singapore, Taiwan, Hong Kong and Malaysia), including a high regard for family, the strong value of education and academic achievement, and a strong sense of hierarchy and harmony (Helmke & Tuyet, 1999). In order to understand how these Confucian values have been adapted in Vietnamese society, the following section explores elements of Vietnamese cultural values including the sense of belonging/collectivist spirit, filial piety and the family, respect for learning and teachers, and saving face and harmony.

2.2.1 Sense of belonging

The emphasis on belonging to community in Vietnamese culture is developed from the need for collectives against natural disasters (To, 2010). Vietnam is traditionally characterised as a country with water-based rice-crop agriculture. Depending heavily on nature for the development of the water-based rice-crop agriculture, Vietnamese need to cooperate with each other to protect crops against frequent floods, storms, and many unexpected natural calamities. Thus, they have formed strong community bonds and Vietnamese people always attempt to maintain a developed sense of belonging with the community (Ngo, 2015). The sense of belonging to the community is nurtured in a lot of Vietnamese folk songs such as:

- Nhiễu điều phủ lấy giá gương

Người trong một nước thì thương nhau cùng

As the rosy silk covers the mirror stand

Let's people in a country be united in the same affection

- Bầu ơi thương lấy bí cùng

  Tuy là khác giống nhưng chung một giàn

  Love one another, gourd and pumpkin

  Though of different species, you are in the same arbour (Phan, 2011, p. 64)

2.2.2 Filial piety and the family

Filial piety is the essential idea of Confucian ethics for ordinary people (Hwang & Han, 2010). In Confucian philosophy, 'filial' is termed from the idea that one's life is an extension of one's parents' lives, and 'piety' is concerned with one's conduct that does not cause anything dangerous for the body inherited from one's parents. One's conduct is termed 'filial piety' only when one takes good care of one's body and never says or does anything that causes one's parents to be insulted (Hwang, 1999). From the Confucian perspective, showing filial piety to one's parents is a positive duty and should be carried out unconditionally (Hwang & Han, 2010). In Vietnamese society, filial piety is the most highly respected virtue (Nguyen, 2002). It is believed that individuals are given a body by their parents, and they have a sense of being indebted to their parents. Therefore, doing their filial duty for their parents is a way to repay what they own their parents (Glewwe, 2004). Accordingly, individuals in Vietnamese society tend to repay their parents by respecting and caring for them or by bringing honour to their families through academic achievement (Nguyen, 2002). In a recent survey (Dalton, Hac, Nghi, & Ong, 2003), 99% of respondents in Vietnam said that

parents are to be respected regardless of their qualities and faults (c.f., Japan: 74%; China: 78%; Taiwan: 91%; S. Korea: 93%).

In addition, family is central to an individual's life in Vietnamese society. Family was ranked as "very important" by 82% of Vietnamese respondents in a survey by (Dalton et al., 2003), which is roughly comparable to other East Asian nations in the 1995-1998 World Values Survey (China: 77%; Taiwan: 77%; Korea: 90%; Japan: 91%). Vietnamese people tend to avoid doing anything that may have a negative influence on family welfare, prestige, and reputation because an individual's misconduct is often blamed on the whole family, including relatives and ancestors (Nguyen, 2002; Vazquez-Nuttall, Li, & Kaplan, 2006). For example, a Vietnamese popular saying emphasising the important role of family in children education is '*Con hu tai me, chau hu tai ba*' (children's mistakes come from mother, grandchidren's mistakes come from grandmother) (Doan, 2005). In academic settings, researchers have shown that the Vietnamese classroom is conceptualised as a family (Kramsch & Sullivan, 1996; Le Ha, 2001). This family is characterised by the sense of supportiveness, politeness, and warmth. In this family, students work together as a class while the teacher is expected to guide students in terms of the development of knowledge and moral values both inside and outside the classroom. For Vietnamese students, the father is the leader in the family and the teacher is the leader in the classroom (Nguyen et al., 2006).

2.2.3 Respect for learning and teachers

Respecting learning and teachers is an important traditional Vietnamese value. In regard to higher education, the long tradition of education still exists in Vietnam. Huong and Fry (2002) indicate that Vietnam has the oldest recorded institution of higher education (1076) in Southeast Asia. They note that the Royal

College (Van Mieu Quoc Tu Giam), built in the Temple of Literature (now in Hanoi) to provide moral education and training to the sons of dignitaries, was found to predate both the colleges at Angkor Wat and the University of Santo Thomas in Philippines. The existence of the Temple of Literature demonstrates that respect for learning and teachers has been an enduring trait of the Vietnamese people throughout its civilisation, which has contributed fundamentally to the shaping of Vietnamese culture, history and its people (Huong & Fry, 2004).

Crawford (1966) states that Vietnamese students place high value on learning, and believe that their academic success brings honour to their families. Within such a society that places a strong emphasis on respect for learning, Vietnamese teachers are highly valued and teaching is considered a noble profession (Huong & Fry, 2004; Le Ha, 2001).

2.2.4 Saving face and harmony

The concept of face is also important in a CHC such as Vietnam. Face refers to one's social and professional position, reputation, and self-image (Go & Mok, 1995). Individuals in a CHC society try to avoid losing face at all costs because the loss of face is personally damaging (Hofstede & Hofstede, 2005). Research indicates that due to fear of losing face, many CHC learners are reluctant to express personal ideas or participate in class discussions (Cocroft & Ting-Toomey, 1994; Volet, 1999). Therefore, in many traditional CHC societies, students "…are not encouraged to speak out, to question or to criticise, to reflect or act independently, nor to organize their ideas in a logical and linear manner" (Jones, 1999, cited in Nguyen et al., 2009, p. 119). In CHC societies, allowing one to save face is very important. In order to save face, learners tend to use more indirect styles such as avoidance (not discussing the topic of conflict), and/or

assume an obliging style (greater concern for the other's interest in the conflict than one's own) (Nguyen et al., 2006). Thus, Vietnamese students are hesitant of engaging in practices such as exchanging information within the group or bringing teacher's knowledge into question (Tran, 2013a).

Another key virtue in Confucian societies is keeping harmony with others. In fact, concern for harmony is the ultimate goal of Confucianism (Hofstede & Hofstede, 2005). It is considered a fundamental principle and underlies much social behaviour in Confucian societies (Kim & Markus, 1999). In order to promote harmony in interpersonal relationships, individuals are expected to behave properly in their roles and relationships. Normally, people prefer to avoid confrontations, and conflicts or use conflict resolution strategies to protect relationships that may be broken (Cross & Gore, 2003). Many Vietnamese proverbs, such as, "One time self-denial means nine times goodness", "Think seven times before speaking out", and "Words cost no money, use them well to please others", reflect the belief that for the sake of harmony, people are less likely to express their opinions and preferences that may be different from others, or to explore fallacies in the thinking of others (Nguyen et al., 2006). Consequently, Vietnamese people tend to maintain harmony in relationships by avoiding hurting the feelings of others, especially of teachers, parents, and elderly people (Nguyen, 2011a).

In general, Vietnamese culture is not only characterised by collectivism but governed by Confucianism. These cultural values have contributed to shaping Vietnamese people. More specifically, the CHC values have exerted influences on Vietnamese students' motivational and cognitive processes, as well as educational outcomes.

2.3 Theoretical framework

As discussed in the previous section, Vietnamese cultural values have a significant impact on education. This suggests that the learning motivation of Vietnamese students may also be influenced by these values. In this section, theories of motivation in education that are relevant to this study will be reviewed, including self-determination theory, achievement goal theory, and self-efficacy theory.

2.3.1 Self-determination theory (SDT)

The following section will provide an overview of SDT, which was adopted as part of the theoretical framework for this study, in order to understand how student motivation is supported by learning environments.

2.3.1.1 Overview

Self-determination theory (SDT) was first developed by Deci and Ryan (1985). According to SDT, all individuals are assumed to have natural, innate, and constructive tendencies to develop a more elaborated and unified sense of self. Under this assumption, SDT is concerned primarily with this innate tendency as a fundamental aspect of human life. However, SDT posits that this fundamental process of human nature does not happen automatically but it is affected by social-contextual factors. In this way, SDT embraces an integration of both an "organismic" and "dialectical" framework for human growth and motivation (Deci & Ryan, 2002). Within the organismic perspective, the theory proposes that individuals have an innate ability/propensity to interact with the external environment in order to exist and develop. The dialectic perspective suggests that

this innate tendency can be enhanced or undermined by specifiable social-contextual factors.

SDT builds on five interrelated mini theories: basic needs theory, organismic integration theory, goal contents theory, cognitive evaluation theory, and causality orientations theory (Reeve, 2012; Vansteenkiste, Niemiec, & Soenens, 2010). Each mini theory represents a component in the framework of SDT.

Basic needs theory (BNT) focuses on a consideration of innate psychological needs for competence, autonomy, and relatedness. BNT helps explain the concept of psychological need and clarifies the relationship between these needs and students' motivation, high-quality engagement, effective functioning, and psychological well-being. This theory also emphasises the universality of psychological needs that must be satisfied in all cultures, and in all developmental periods (Deci & Ryan, 2002).

Organismic integration theory (OIT) categorises types of motivation and explains the internalisation of motivation. Within organismic integration theory, motivation is categorised into two types: intrinsic and extrinsic motivation. Students who are intrinsically motivated engage in an activity because it is interesting and enjoyable, whereas students who are extrinsically motivated engage in an activity not for interest but for an outcome that is separate from the activity itself. By using the concept of internalisation, the theory differentiates four types of extrinsic motivation: external regulation, introjected regulation, identified regulation, and integrated regulation (Deci & Ryan, 1985; Ryan & Deci, 2000a).

These types of extrinsic motivation range from the least autonomous to the most autonomous in a continuum, depending on the degree of the internalisation.

External regulation, which is the least autonomous, represents a type of motivation in which students engage in a learning activity because they want to achieve a reward or avoid a punishment. *Introjected regulation*, which is slightly autonomous, refers to a type of motivation in which students engage in an activity to avoid feelings of guilt and shame or to seek feelings of worth. *Identified regulation*, which is viewed as an autonomous type of extrinsic motivation, occurs when students engage in an activity because they recognise the value of the activity, and not for any external pressure. *Integrated regulation*, which is the most autonomous type of extrinsic motivation, occurs when identified regulations are fully assimilated to the self. To some extent, integrated regulation is similar to intrinsic motivation. However, it is different from intrinsic motivation because integrated regulation is guided by a separable outcome of an activity (e.g., the importance of the activity) while intrinsic motivation is based on interest in the activity (Vansteenkiste et al., 2010).

Goal contents theory (GCT) focuses on answering the question of *what* people can pursue in their daily behaviour. The mini theory introduces two types of goals: intrinsic and extrinsic goals (Vansteenkiste, Lens, & Deci, 2006). According to GCT, the pursuit of intrinsic goals supports psychological need satisfaction and fosters psychological well-being, whereas the pursuit of extrinsic goals does not contribute to satisfaction of psychological needs and thus predicts ill-being. In education, when students focus on intrinsic goals, they tend to experience deeper learning, perform at a higher level, persist longer on tasks, and experience greater psychological well-being than those who pursue extrinsic goals (Vansteenkiste, Matos, Lens, & Soenens, 2007).

Cognitive evaluation theory (CET) explains the effect of external events on intrinsic motivation. The theory proposes two cognitive processes through which contextual factors affect intrinsic motivation: perceived locus of causality (perceived autonomy); and perceived competence. According to CET, students' intrinsic motivation will be enhanced or undermined depending on the extent to which students' perceptions of autonomy or competence are supported or thwarted by external events. This theory is considered as a crucial mini theory in the overall SDT framework because it is concerned with specific contextual factors that affect students' intrinsic motivational processes (Reeve, 2012).

Causality orientations theory (COT) focuses on individual differences in one's motivational orientations. COT identifies three orientations that vary in the degree of self-determination: autonomy orientation, controlled orientation, and impersonal orientation (Deci & Ryan, 2002; Vansteenkiste et al., 2010). Autonomy orientation refers to an orientation in which individuals are guided toward intrinsic motivation and well-integrated extrinsic motivation. Students who adopt an autonomy orientation are likely to rely on autonomous and self-determined guides such as personal interests, self-endorsed values, and personal goals. Controlled orientation is an orientation in which one's behaviour is controlled and directed by social factors. Students who adopt a controlled orientation tend to rely on controlling guides such as environmental incentives, social prescriptions, and pressuring internal language. Impersonal orientation is related to an orientation in which individuals do not act intentionally. When students are impersonally oriented, they often fail to regulate their behaviour effectively. According to causality orientations theory, each student embraces each of these orientations in their personality (Deci & Ryan, 2002).

Among the five mini theories, BNT is considered particularly important to the SDT framework because it involves the concept of basic psychological needs (Deci & Ryan, 2002; Reeve, 2012; Vansteenkiste et al., 2010). The following section provides further discussion of basic psychological needs, including a consideration of their importance, how they are defined, and how they are characterised.

2.3.1.2 Significance of basic psychological needs

Reeve (2012) identifies three ways in which the concept of basic psychological needs makes an important contribution to SDT. First, three basic needs are identified as essential psychological nutriments of human beings that need to be fulfilled if they are to develop and thrive. Satisfaction of these needs is considered as "a unifying principle" within SDT (Vansteenkiste et al., 2010, p. 131). Second, need satisfaction accounts for the relation between a basic psychological need and its outcomes. When students' needs are satisfied, they actively engage in learning activities; otherwise they show a passive or antagonistic involvement. Third, the satisfaction of the three needs provides the basis for identifying the characteristics of the environment that are supportive or antagonistic toward the innate tendencies. That is, when the three psychological needs are satisfactorily met, social environments are assumed to be supportive. By contrast, when these needs are not met, social environments may be unsupportive or even antagonistic. These basic psychological needs are explicated in the following section.

2.3.1.3 Definition of basic psychological needs

In self-determination theory, needs are defined as "innate psychological nutriments that are essential for ongoing psychological growth, integrity, and well-

being" (Ryan & Deci, 2000a, p. 229). On the basis of this definition, Deci and Ryan (2000) identified three basic psychological needs for *competence*, *autonomy*, and *relatedness*, and stated that the satisfaction of these needs is critical for intrinsic motivation.

C*ompetence* reflects a need to feel effective in attaining one's goals. A number of studies have shown that optimal challenges, promoting feedback, and freedom from demeaning evaluations, support learners' perceived competence and, in turn, facilitate intrinsic motivation (Deci et al., 1991; Harter & Jackson, 1992; Ryan & Deci, 2000a). However, self-determination posits that perceived competence needs to be accompanied by autonomy to improve levels of intrinsic motivation.

Autonomy refers to a need to feel free in initiating and regulating one's actions (Ryan & Deci, 2000a, 2006). Ryan and Deci (2000a) noted that a sense of autonomy is an *internal perceived locus of causality* (the activity of "personal endorsement) can give individuals a feeling of being autonomous and intrinsically motivated when they fully and authentically internalise the values of external regulatory factors into the self. Although the needs for competence and autonomy have been considered the most powerful influences on intrinsic motivation, a sense of relatedness is also essential for the maintenance of intrinsic motivation (Deci & Ryan, 2000).

Relatedness refers to a sense of being connected with other individuals (Baumeister & Leary, 1995; Deci & Ryan, 2002). According to Baumeister and Leary (1995), human beings fundamentally have a strong desire for interpersonal attachment. With the need to belong as a fundamental human motivation, individuals are "pervasively" motivated to form and maintain social relationships

with significant people such as parents, teachers, peers, and partners (Deci & Ryan, 2002). When individuals are satisfied with the need for social relatedness, they appear to derive certain benefits both emotionally and cognitively because "the need to belong is a powerful, fundamental, and extremely pervasive motivation." (Baumeister & Leary, 1995, p. 497).

2.3.1.4 Characterisation of basic psychological needs

Three important characterisations of basic psychological needs are identified within SDT: essential, innate, and universal (Ryan & Deci, 2000a). The first important characterisation is that basic needs are essential nutriments for people's physical development and functioning. Specifically, satisfaction of basic psychological needs promotes people's thriving and optimal functioning, and prevents their illness. The second important characterisation is the innate nature of basic needs from which three implications can be derived: (1) need satisfaction is critical throughout one's entire life; (2) need satisfaction is beneficial for everyone (from children to adults); and (3) the needs for competence, autonomy, and relatedness are universal as they are evident in all genders, social classes, and cultural contexts. The third important characterisation is that need thwarting is associated with a variety of maladaptive consequences (Vansteenkiste et al., 2010).

Regarding the universal importance of basic psychological needs, some debate in the field has been evident relating to cross-cultural variations in how these basic needs are satisfied. Some researchers have expressed doubt regarding the universal importance of autonomy and relatedness (Bao & Lam, 2008; Iyengar & DeVoe, 2003; Iyengar & Lepper, 1999; Markus & Kitayama, 2003; Vansteenkiste, Zhou, WillyLens, & Soenens, 2005) as well as the compatibility of

autonomy and relatedness across cultures (Markus & Kitayama, 1991) (refer to Section 2.3.2 for more details). However, BNT posits that "the specification of innate and universal needs does not preclude differences in socialization affecting how those needs are satisfied" (Vansteenkiste et al., 2010, p. 139). This suggests more research is needed to examine the universal characteristics of basic needs across different social environments.

The next section will explore the importance of need satisfaction in promoting motivation in academic settings.

2.3.1.5 Basic psychological needs and intrinsic/extrinsic motivation

As discussed earlier, satisfaction of the psychological needs for competence, autonomy, and relatedness are essential for developing and maintaining intrinsic motivation and facilitating the integration of extrinsic motivation (Ryan & Deci, 2000a). Indeed, intrinsically motivated behaviours are based on individuals' needs for competence and autonomy (Ryan & Deci, 2000a). Specifically, when students experience a situation in which external events foster internal perceived locus of causality (e.g. choice about acting), they tend to become more intrinsically motivated because their sense of autonomy is satisfied. In contrast, students tend to become less intrinsically motivated in a controlling context in which external events (e.g. threats of punishment and deadlines) foster external perceived locus of causality, and thus thwart students' need for autonomy. Similarly, external events such as positive feedback are expected to increase perceived competence and thus enhance students' intrinsic motivation, whereas negative feedback is predicted to undermine their intrinsic motivation. Given that external events affect intrinsic motivation through change in perceived locus of causality and in perceived

competence, perceived autonomy and perceived competence are viewed as mediators in these cognitive processes (Ryan & Deci, 2000a).

Unlike autonomy and competence, relatedness plays an important, but more distal role in the maintenance of intrinsic motivation. SDT suggests that relatedness affects intrinsic motivation through the internalisation process of extrinsic motivation (Deci & Ryan, 2002; Ryan & Deci, 2000a). It is assumed that people tend naturally to internalise cultural demands, values, and regulations when they are embedded in social conditions in which they feel connected to others (e.g. teachers and parents). In educational contexts, students are willing to internalise the knowledge and practices of teachers when they feel securely connected to, and cared for, by their teachers (Ryan & Deci, 2009).

Over the past three decades since SDT has been utilised in education, it has been shown to be an effective framework for examining the quality of learners' motivation, exploring social-contextual factors that affect learners' intrinsic motivation and internalisation processes, and explaining regulation of learners' study behaviours (Boyd, 2002; Deci & Ryan, 1991; Reeve et al., 2004; Ryan & Deci, 2000a; Vansteenkiste et al., 2006). SDT research suggests that promoting intrinsic motivation should be given high priority in educational practices because it is associated with a variety of outcomes that are beneficial to learners (Deci et al., 1991). In fostering intrinsic motivation, SDT not only demonstrates the powerful effects of autonomy and competence but also highlights the important role of relatedness for intrinsic motivation (Ryan & Deci, 2000a). This study focuses on the third basic psychological need, relatedness, by investigating the influence of relatedness on students' achievement goals, especially relatedness

between teachers and students. In the following section, teacher-student relatedness will be discussed from the perspective of SDT.

2.3.1.6 Teacher-student relatedness

The following sections will discuss teacher-student relatedness from different focuses within SDT, including emotional security, motivational support, and compatible need with autonomy.

2.3.1.6.1 Emotional security

From an SDT perspective, relatedness is connected to the concept of emotional security (Roorda et al., 2011). Indeed, Deci and Ryan defined relatedness as “secure and satisfying connections with others in one’s social milieu” (Deci et al., 1991, p. 327). Accordingly, researchers have highlighted the dimensions of emotional security and closeness in teacher-student relationships (Deci et al., 1991; Ryan & Powelson, 1991; Wentzel, 1997). Teachers can provide a warm, loving, and nurturing environment in which they genuinely care for, and express interest in, students (Connell & Wellborn, 1991), and this caring may lead to positive changes in students’ motivational outcomes (Wentzel, 1997). For example, when a student perceives the teacher as liking and admiring him or her, the student is more likely to develop confidence, which in turn, enhances positive engagement in the classroom (Connell & Wellborn, 1991; Furrer & Skinner, 2003), as well as increased interest in academic tasks (Davis, 2006). Hence, when students perceive their relationships with their teachers as supportive and caring, they are more likely to report feeling more competent and supported by the classroom context (Bong et al., 2010; Opdenakker, Maulana, & den Brok, 2012; Roorda et al., 2011).

2.3.1.6.2 Motivational support

Relatedness in SDT is not simply a concept of connection, but is a fundamental factor for motivation (Ryan & Powelson, 1991). From the self-determination perspective, several studies have examined the relationship between students' relatedness to teachers and their academic motivation (Bao & Lam, 2008; Connell & Wellborn, 1991; Furrer & Skinner, 2003; Hughes et al., 2012; Ryan, Stiller, & Lynch, 1994; Wentzel, 1999). Findings indicated that students were more likely to be involved in academic activities if they felt happy and comfortable in the classroom, and were appreciated by teachers (Furrer & Skinner, 2003). Students' performance in achievement tests and their overall grades were also found to be higher (Hughes et al., 2012). Other findings indicated that the effect of the teacher is the strongest influence on students' academic behaviours in class and teacher support is highly correlated with effort and academic grades (Connell & Wellborn, 1991; Goodenow, 1993; Wentzel, 1998). Together, these findings have lent support for the influence of teacher-student relationships in shaping the quality of students' motivation in academic settings (Wentzel et al., 2010), in which teachers are portrayed as one of the key determinants (Pelletier, Séguin-Lévesque, & Legault, 2002). Although there may be some arguments in the literature regarding the centrality of the position of relatedness to intrinsic motivation, the positive relation between teacher support, and student motivation and achievement, has been consistently shown at most education levels from preschool to high school (see Roorda et al., 2011 for a review).

Based on the SDT framework, Skinner and Belmont (1993) suggest that teachers could fulfill students' need for relatedness by being more involved with students. Teacher involvement can be measured by examining the extent to which

teachers take time for, express affection toward, enjoy interactions with, are attuned to, and dedicate resources to their students. In a recent study, Maulana et al. (2013) examined teachers' involvement with students in relation to academic motivation in a cross-national context. In this longitudinal study, teachers' involvement was negatively linked with controlled motivation in both Dutch and Indonesian samples. These findings imply that teachers' involvement is important for early adolescents' academic motivation, and are consistent with previous research documenting the links between students' sense of relatedness, academic motivation, engagement, and achievement (Furrer & Skinner, 2003; Goodenow, 1993).

2.3.1.6.3 Compatibility of relatedness and autonomy

Self-determination theory also postulates that relatedness is "not antithetical" to autonomy, instead accompanying autonomy in promoting academic motivation (Ryan & Powelson, 1991). It is argued that "supports for relatedness (e.g., the interpersonal involvement of parents and teachers) will enhance motivation in general but will enhance intrinsic motivation and integrated internalisation only if the involved others are autonomy supportive" (Deci et al., 1991, p. 333). In other words, autonomy is the primary support that enhances a child's feelings of relatedness to significant others (Ryan et al., 1994). In fact, it was found that students who were oriented with more autonomy support rated their teachers "warmer" than those who experienced more controlling learning contexts (see Ryan & Powelson, 1991). Hence, autonomy support and relatedness are considered to be intertwined and fundamental needs for learning motivation.

Cross-cultural researchers have raised doubts about the compatibility of autonomy and relatedness in collectivist learners' motivation. Bao and Lam

(2008) investigated the role of autonomy, and relatedness in Chinese children's motivation. With the assumption that autonomy is not equivalent to freedom of choice, autonomy was found to be important in promoting motivation in Chinese children and relatedness also made a contribution. Hui, Sun, Chow, and Chu (2011) reported similar findings when examining the effect of filial piety, and the three components of self-determination on academic motivation among Hong Kong secondary high school students. In this study, relatedness acted as a strong predictor of adolescent academic motivation, along with competence. It is worth noting that although autonomy made a less important contribution to academic motivation among Chinese students than competence and relatedness, it had a strong positive association with relatedness. These results suggest that autonomy is not in conflict with relatedness in societies upholding collectivist values, and that autonomy and relatedness are compatible needs as maintained in SDT (Vansteenkiste, Zhou, et al., 2005).

Although autonomy and relatedness have been shown to be compatible, the need for each is expected to vary from culture to culture. Markus and Kitayama (1991) indicate that autonomy and relatedness reflect different views of the self across cultures. The self is known as the centre of a person's psychological universe and is the lens through which other aspects of the world are perceived (Cross & Gore, 2003). On the basis of cultural variation in the relation between the self and others, two cultural models of the self are identified, conceptualised as the independent model, and the interdependent model. In the independent model, the person is viewed as a complete individual who is free to enter or leave social relationships. The self, therefore, is assumed to be an autonomous and independent person in individualistic cultural contexts. In the interdependent

model, the person is embedded in social relationships and becomes the centre of relationships. The interdependent self is motivated to be more connected to others. This view of the self and the interdependent relationship between the self, and others are a feature of collectivist cultural societies. From the point of view of *self*, it is apparent that autonomy reflects an independent view of self and relatedness reflects an interdependent view of self (Markus & Kitayama, 1991). This means that people from individualistic cultures strive to be independent in relation to others, whereas those from collectivist societies insist on connectedness to others (Triandis, 1995). In other words, autonomy has greater relative importance in individualistic societies while relatedness has somewhat greater relative importance in collectivistic societies.

The following section will explore relatedness in collectivist societies dominated by Confucian cultural values.

2.3.1.6.4 Teacher-student relatedness in collectivist societies

In collectivistic societies, relatedness is aligned with Confucian cultural values, which emphasise interpersonal relationships and harmony (Hui et al., 2011). According to Confucian thinking, interpersonal relationships in the context of teaching and learning are unequal relationships (Hofstede & Hofstede, 2005). Traditionally, teachers are treated as authoritarian figures who should be respected by students. Since teachers take a higher position in the relationship with students, they are expected to have responsibility for students both inside and outside the classroom (Ho et al., 2001). In return, students have to obey teachers and they tend to exercise passive behaviours. In the classroom, students only speak when teachers allow them to do so. In such a system, teachers are assumed to be transmitters of knowledge, and the wisdom of the teacher is expected to make a

unique contribution to the quality of students' learning. Students need the personal wisdom of the teacher to improve their learning and they "remain dependent on teachers even after reaching high education levels" (Hofstede & Hofstede, 2005, p. 35). This suggests that under the influence of Confucian values, the relationship between teachers and students in collectivist classrooms is characterized as hierarchical and interdependent. Teachers, in the higher position, tend to show the authority and responsibility of caretakers, while students in the lower position are required to show respect to teachers, and are motivated to be connected to them to enable them to be cared for (Lee, Fraser, & Fisher, 2003).

The Confucian value of harmony reigns supreme in collectivist classrooms. According to Hofstede, Hofstede, and Minkov (2010), "Confrontations and conflicts should be avoided or at least should be formulated so as not to hurt anyone" (p. 118). As such, if teachers expect to have a class with little noise, students try hard to meet their expectation. Students also avoid criticising or claiming any authority in group settings (Nguyen et al., 2006). Because of the emphasis on the avoidance of conflict and the maintenance of harmony in collectivist classrooms, it is reasonable to expect that collectivist students would be willing to sacrifice their individual opinions and be obedient to their teachers (Kim & Markus, 1999).

2.3.1.6.5 Teacher-student relatedness in Vietnamese society

In a collectivist society such as Vietnam, teachers are treated with high respect and honour. Traditionally, a teacher was positioned just below the King but above the father (the King-the Teacher-the Father) (Nguyen et al., 2006; Nguyen, 2011a). Every year, Vietnamese teachers are officially honoured on

Teacher's Day (20th November), a day when students express gratefulness and respect to their teachers (Nguyen et al., 2006). From the perspective of Vietnamese students, teachers are not only the imparters of knowledge but also the models of correct behaviour, to whom they should bow to, whenever they see them inside or outside the classroom (Pham, 2010).

Many proverbs in Vietnamese literature show the long-standing tradition of respect for teachers and the teaching profession. Thus people say, *"Nhat tu vi su, ban tu vi su"* (You should respect the person who teaches you only a word or even half a word, and call him teacher) (Nguyen, 2011a). Vietnamese students, therefore, are taught to respect and obey teachers from a very early age. They are expected to not question or challenge what is presented in the classroom as teachers are never publicly contradicted or criticised (Hofstede & Hofstede, 2005). In return, Vietnamese teachers are expected to be a *guru* (meaning "weighty" and "honorable"), who are able to satisfy learners in their search for the truth (in knowledge) and virtues (in life) (Nguyen et al., 2006). In order to be a good Vietnamese teacher, one needs to perform well in the roles of both mentor and imparter of knowledge (Mai & Iwashita, 2012).

In addition to the hierarchical relationship emphasised in collectivist societies, relationships between teachers and students in the context of Vietnamese society are governed by Confucian values (Nguyen et al., 2006). In Vietnamese society, the culture of face saving has a great impact on students' learning styles. Vietnamese students are not willing to answer questions in front of the class or participate in debates in person because it is shameful if they are unable to give correct answers (Pham, 2010). Also, they rarely question or

contradict teachers' instructions; otherwise, their behaviours would be considered rude or rebellious, which may result in unexpected prejudices (Nguyen, 2008; Nguyen, 2011a). As such, students who are concerned about the issue of saving face tend to avoid questioning or reformulating knowledge, as a mark of respect and politeness to teachers (Le Ha, 2001).

Smith (2010) suggests that these student behaviours of giving, maintaining and promoting "face" contribute to the achievement of relationship harmony with teachers. Since the concern for harmony is the ultimate goal of Confucianism (Cross & Gore, 2003), Vietnamese students are more likely to obey the teacher and maintain appropriate behaviours in the classroom. For example, if teachers want a class to have little noise, students will be quiet and listen to the teachers. If students have ideas or thoughts different from others, they are expected to follow what the majority of students think or value (Nguyen, 2011b; Phuong-Mai et al., 2005). It is believed that when one's feelings are hurt, it will stay in one's memory for a long while and hence it is hard to restore one's lost confidence. Therefore, it is important for Vietnamese students to maintain harmony in academic settings by avoiding hurting the feelings of significant others such as teachers (Nguyen, 2011b).

In summary, given the strong influence of collectivist-Confucian values, the relationship between teachers and students in Vietnamese classrooms can be conceptualised as the unequal relationship of Confucianism. In the Vietnamese classroom, teachers are seen as authority figures students are able to depend on in terms of knowledge and moral guidance inside and outside the classroom. In return, students are expected to be obedient towards their teacher and to follow

their instructions without criticism. Nevertheless, teachers are expected to use their authority with warmth and care because the class is one family in which the teacher is like one's parents (Kramsch & Sullivan, 1996). In other words, the role pair parent-child is replaced by the role pair teacher-student at schools (Hofstede, 2001). This means that Vietnamese students are likely to have a strong sense of connectedness to their teachers, even though there is an order of authority between them.

Given that the need for relatedness with others is essential for facilitating academic motivation (Connell & Wellborn, 1991; Furrer & Skinner, 2003; Ryan & Deci, 2000a), relatedness with teachers is likely to contribute to students' motivational orientation and achievement (Bao & Lam, 2008; Roorda et al., 2011). In the late 1990's, multiple studies have explored the associations between relatedness-type constructs and achievement goal orientations (Anderman, 1999; Anderman & Anderman, 1999; Patrick, Anderman, Ryan, Edelin, & Midgley, 2001; Roeser, Midgley, & Urdan, 1996). For example, Roeser et al. (1996) examined the mediating role of goals and feelings of school belonging in the relationship between eighth graders' school perceptions, psychological processes, and school outcomes. The findings in this study revealed the positive relationship between students' perceptions of teacher-student relationships and school-related affect and with feelings of school belonging as a mediator. More recently, relatedness has become identified as an antecedent of achievement goals in studies of the integration between SDT and achievement goal theory (Ciani et al., 2011; Diseth, Danielsen, & Samdal, 2012; Zhou et al., 2012). To further investigate the relationship between teacher-student relatedness and achievement goals in a collectivist context, a discussion of achievement goal theory follows.

2.3.2 Achievement goal theory

This section commences by providing a definition of achievement goals, followed by a description of the different types of achievement goals and their outcomes, and concludes with a review of studies conducted on students' achievement goals across cultures.

2.3.2.1 Definition of achievement goal

An achievement goal framework was developed in the late 1970s and early 1980s, in an attempt to explain the purpose of one's behaviours in academic settings (Ames, 1992a; Dweck, 1986; Nicholls, 1984). Ames (1992a) defined achievement goal as "an integrated pattern of beliefs, attributions, and affect that produces the intentions of behavior and that is represented by different ways of approaching, engaging in, and responding to achievement type activities" (p. 261). In early stages, achievement goal theorists identified two main types of goal orientations that were labelled as two contrasting constructs: learning versus performance goals (Dweck, 1986; Elliott & Dweck, 1988; Grant & Dweck, 2003) , task-involvement versus ego-involvement goals (Nicholls, 1984; Thorkildsen & Nicholls, 1998), or mastery versus performance goals (Ames & Archer, 1988).

According to Dweck (1986), types of achievement goals are contrasting because they are associated with two alternative patterns of motivational processes (for example, mastery goals and adaptive patterns, performance goals and maladaptive patterns). The adaptive (mastery-oriented) pattern is associated with seeking challenges and high persistence in the face of obstacles, whereas the maladaptive (performance-oriented) pattern is associated with challenge avoidance and low persistence. The following section will outline different types of achievement goal.

2.3.2.2 Types of achievement goal

Achievement goal theory initially focused on two broad orientations toward learning, mastery goal orientation and performance goal orientation. Each goal orientation will be discussed and then other types of achievement goals will be considered.

2.3.2.2.1 Mastery goal orientation and performance goal orientation

A mastery goal orientation reflects an individual's aspiration for developing new skills, improving level of competence, or attaining a sense of mastery (Ames, 1992b). For a mastery goal orientation, success is dependent on effort (Ames & Archer, 1988). When students adopt a mastery goal orientation, they are likely to prefer challenging work and risk taking, have an intrinsic interest in learning activities, and display positive attitudes toward learning (Ames, 1992b).

A performance goal orientation reflects an individual's aspiration for demonstrating competence by outperforming others or by achieving success with little effort (Ames & Archer, 1988). When students adopt a performance goal orientation, they tend to avoid challenging tasks, have negative affect following failure or positive affect following success with little effort, and use superficial or short-term learning strategies (Ames, 1992b).

According to achievement goal theory, mastery goals are considered to be beneficial while performance goals are considered to be detrimental to students' learning (Keys et al., 2012). The outcomes of a mastery goal orientation are consistently positive, including high intrinsic motivation, the use of deep cognitive and regulatory strategies, positive school-related feelings, and academic self-efficacy. Performance goals are often accompanied by negative affect following

failure, a judgement of lacking ability, and use of superficial or short-term learning strategies (see Urdan, 2004a for a review). The following section will present other types of achievement goal that are introduced in various models.

2.3.2.2.2 A trichotomous model

Elliot and Church (1997) proposed a *trichotomous model* in which the performance goal construct was separated into performance-approach and performance-avoidance goals. Performance-approach goals reflect one's striving for competence by outperforming others, and performance-avoidance goals reflect avoiding failure and avoiding looking incompetent. By examining the antecedents (achievement motivation, fear of failure, and competence expectancies) and consequences of achievement goals (intrinsic motivation and graded performance), Elliot and Church (1997)found distinct outcomes for each achievement goal orientation. The results revealed that adoption of a mastery goal and performance-approach goal enhanced intrinsic motivation and graded performance respectively, whereas adoption of a performance-avoidance goal brought about deleterious consequences for both intrinsic motivation and graded performance.

A revision of achievement goal theory by Harackiewicz, Barron, Pintrich, Elliot, and Thrash (2002) indicated that performance-approach goals are more complex orientations than mastery goals and performance-avoidance goals. Specifically, performance-approach goals are associated with both positive outcomes (e.g. task value and academic self-concept), and negative outcomes (e.g. self-handicapping and academic cheating), while performance-avoidance goals are consistently linked with negative consequences (e.g., self-handicapping, threat

appraisals, and anticipatory test anxiety) (Harackiewicz et al., 2002; McGregor & Elliot, 2002; Urdan, 2004b). From a revised goal theory perspective, Harackiewicz, Barron, and Elliot (1998) argued that negative conclusions regarding performance goals are premature and that performance goals may not be maladaptive in some situations where performance goals are associated with achievement whereas mastery goals are linked to positive outcomes such as intrinsic interest in the task.

2.3.2.2.3 A multiple-goals model

Research demonstrating the positive effects of performance-approach goals has led some researchers to develop a multiple goal model (Pintrich, 2000). In a multiple goal model, mastery goals have shown to be adaptive as expected by traditional goal theory, but performance-approach goals are adaptive only when they are coupled with mastery goals. In the multiple goal framework, two effective groups have been identified: high-mastery/high-performance; and high-mastery/low-performance. However, researchers note that if students in the group of high-mastery/high-performance consistently do poorly or fail, they may be vulnerable to some maladaptive outcomes. Midgley, Kaplan, and Middleton (2001) indicate that performance-approach goals are more facilitative for boys than for girls, and older students than for younger students; and performance-approach goals may lead to the use of avoidance strategies, cheating and reluctance to cooperate with peers.

2.3.2.2.4 A 2×2 model

Based on the definition and valence components of competence, Elliot and McGregor (2001) offered a *2x2 achievement goal model* in which the construct of

mastery-avoidance goal is added to the trichotomy. According to Elliot and McGregor (2001), competence is defined in terms of the evaluative standards that may be absolute (the requirement of the task itself), intrapersonal (one's own past attainment or maximum potential attainment), and normative (the performance of others). Moreover, competence can be valenced in two ways: a positive, desirable possibility (i.e., success) or a negative, undesirable possibility (i.e., failure). In this model, the mastery goal construct is divided into mastery-approach goals (in which competence is defined in absolute/intrapersonal terms and is positively valenced) and mastery-avoidance goals (in which competence is defined in absolute/intrapersonal terms and is negatively valenced). Achievement goals, therefore, are classified into four types: performance-approach (i.e., striving to outperform others or appear talented); performance-avoidance (i.e., striving to avoid doing worse than others or appearing less talented); mastery-approach (i.e., striving to learn or improve skills); and mastery-avoidance goals (i.e., striving to avoid learning failures or skill decline) (for reviews, see Hulleman, Schrager, Bodmann, & Harackiewicz, 2010; Senko, Hulleman, & Harackiewicz, 2011).

2.3.2.2.5 A 3×2 model

The number of achievement goals has recently increased with the introduction of a 3 x 2 model (Elliot, Murayama, & Pekrun, 2011). In the 3×2 model, mastery goal construct is categorised into three forms: task-based, self-based, and other-based. Since the 3×2 model is derived from the 2×2 model, achievement goal constructs are also differentiated using competence evaluation. Task-based goals use the absolute demand of task (e.g., how one is doing relative to inherent task demands), whereas self-based goals use an intrapersonal

evaluative standard (e.g., how one is doing relative to how one has done before) and other-based goals use an interpersonal evaluative standard (e.g. how one is doing relative to others). Although these constructs are quite new, they have proven fruitful for explaining a broader set of phenomena. That is, self-based goals can be used to account for students' energy in class (a new outcome) (Vansteenkiste, Lens, Elliot, Soenens, & Mouratidis, 2014).

In this study, the dichotomous framework of mastery and performance-approach goals was chosen for the following four reasons. First, the theoretical issues of the dichotomy model have been examined in achievement goal literature. Second, the dichotomy model can be considered a basic model on which other models have been developed, however this model has not been examined in the Vietnamese context. Thirdly, there are practical and theoretical limitations of including avoidance goals. That is, performance-approach and performance-avoidance goals are found to share some negative effects (Senko et al., 2011). Finally, scales measuring mastery-avoidance goals are rare within published papers (for a review, see Hulleman et al., 2010). Thus, researchers recommend choosing either all four goals, or honing in on mastery-approach and performance-approach goals (Senko et al., 2011). In this study, the focus is on mastery-approach and performance-approach goals, which are simply termed as mastery and performance goals because the mastery-performance distinction is found to be more salient than the approach-avoidance distinction in the classroom (Lee & Bong, 2016) .

In summary, achievement goal theory has developed over the past four decades with the introduction of various models, including (1) dichotomous model

of mastery and performance-approach goals; (2) trichotomous model of mastery-approach, performance-approach, and performance-avoidance; (3) the addition of mastery-avoidance to create the 2×2 model; and (4) the categorisation of a mastery goal construct to create the 3×2 model. As stated previously, this research utilises the first of these models. The following section will discuss the outcomes of achievement goals.

2.3.2.3 Outcomes of achievement goals

As discussed earlier, the mastery and performance orientation can be distinguished along the approach-avoidance dimension. This section will discuss the outcomes of goal orientation on each dimension and the benefits of multiple goals.

2.3.2.3.1 Mastery-approach goals

The literature on achievement goal theory has demonstrated the positive effects of mastery-approach goals. The adoption of mastery-approach goals is associated with persistence in the face of challenge, willingness to cooperate, increased interest, and use of deep learning strategies (Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000; Hulleman et al., 2010; Levy, Kaplan, & Patrick, 2004). Students holding mastery-approach goals are reported to use deep learning strategies, spend effort in learning, and have positive attitudes toward the class (Ames, 1992a; Wolters, 2004). In general, mastery-approach goals have a positive impact on achievement-related outcomes and the findings for mastery-approach goals are regarded as consistent and favourable (Senko et al., 2011).

However, the positive relationship between mastery-approach goals and academic achievement has been found to be inconsistent across studies. For

example, in some studies, mastery-approach goals are significantly related to academic achievement (Church, Elliot, & Gable, 2001; Grant & Dweck, 2003; Linnenbrink, 2005), but in other studies mastery-approach goals and academic achievement are unrelated (Elliot & Church, 1997; Hulleman et al., 2010; Liem, Martin, Porter, & Colmar, 2012; Senko et al., 2011; Wolters, 2004). The inconsistency in the relation between mastery-approach goals and academic achievement may be explained by considering differences in course content, and the social values students hold in pursuing these goals (Dompnier, Darnon, & Butera, 2009; Liem, Lau, & Cai, 2016; Senko & Miles, 2008). Senko and Miles (2008) argue that when mastery-oriented students find course materials interesting, they spend their time focused on the preferred materials, and ignore the less interesting materials that may be tested in exams. Consequently, mastery-oriented students are reported to have high course interest and make use of a variety of study strategies, but their course grades may be low. Similarly, Dompnier et al. (2009) found that the relationship between mastery goals and academic achievement is moderated by students' perceptions of the social values attached to mastery goals: social desirability (i.e., a desire to be appreciated by teachers); and social utility (i.e., a desire to succeed at university). The perceived social utility, but not perceived social desirability, was shown to facilitate the relationship between mastery goals and final grades.

2.3.2.3.2 Performance-approach goals

Compared to mastery-approach goals, the findings for performance-approach goals are less consistently related to both achievement-related outcomes and academic achievement. The majority of research conducted in the 1980's and early 1990's consistently demonstrated the detrimental effects of performance-

approach goals through self-handicapping strategies, help avoidance, challenge avoidance, low persistence, fear of failure, and academic cheating behaviors (see Midgley et al., 2001). However, subsequent research has found inconsistency in the relationship between performance-approach goals and some maladaptive variables such as self-handicapping and help avoidance (Harackiewicz et al., 2002). The relationship between performance-approach goals and academic achievement is also inconsistent with some studies reporting negative relationships (e.g., Grant & Dweck, 2003; Midgley et al., 2001), while others found positive relationships (e.g., Barron & Harackiewicz, 2001; Elliot & Church, 1997; Wolters, 2004). From these findings, researchers have indicated uncertainty about the nature of performance-approach goals (Elliot & Moller, 2003; Midgley et al., 2001). Based on the revision of empirical studies in which performance-approach goals were related to adaptive patterns of learning, Midgley et al. (2001) have suggested that performance-approach goals have some positive effects for students only when they are accompanied by mastery goals.

2.3.2.3.3 Mastery-avoidance and performance-avoidance goals

According to Hulleman et al. (2010), the avoidance version of both mastery and performance goals has demonstrated a consistent pattern of negative findings across studies. Students who pursue performance-avoidance goals often engage in help-avoidance, make use of self-handicapping strategies, are involved in fear of failure, and display low achievement (Elliot & Church, 1997; Midgley & Urdan, 2001; Senko et al., 2011). In addition to the commonalities with performance-approach goals (e.g., help-avoidance and self-handicapping), performance-avoidance goals tend to be associated with fear of possible negative outcomes (Hulleman et al., 2010). Relative to performance-avoidance goals, the results

concerning mastery-avoidance goals are more positive (Baranik, Barron, & Finney, 2007; Elliot & McGregor, 2001). Students who pursue mastery-avoidance goals displayed high anxiety and low self-efficacy, and were reported to disengage in learning and perform poorly (Van Yperen, Elliot, & Anseel, 2009). Taken together, empirical research on the avoidance form of performance and mastery goals indicates that the findings for these two goals are consistently negative, having null or negative relationships with performance and intrinsic motivation (Cury, Elliot, Fonseca, & Moller, 2006; Harackiewicz et al., 2002). Thus, these two goals should be minimised for the maximisation of performance improvement (Van Yperen et al., 2009).

2.3.2.3.4 Multiple goals

The positive effects of performance-approach goals can be viewed as running counter to the perspective of normative goal theory, positing that mastery goals are good and performance goals are bad (Brophy, 2005). Instead, some researchers support a multiple-goal perspective approving the simultaneous adoption of mastery-approach and performance-approach goals (Harackiewicz & Linnenbrink, 2005). Researchers endorsing the multiple-goal perspective believe that students can adopt mastery and performance-approach goals simultaneously and can gain the benefits of each goal when pursuing both (Barron & Harackiewicz, 2001; Pintrich, 2000). From this perspective, Barron and Harackiewicz (2001) proposed four different patterns that can explain the benefits of multiple goal pursuit: additive goal pattern (in which the two goals each have positive effects on the same educational outcome), interactive goal pattern (in which the two goals have a positive interaction effect on an outcome alongside the main effects), specialised goal pattern (in which the two goals have positive main

effects on different outcomes), and selective goal pattern (in which students can selectively adopt the two goals that are considered to be most relevant at a particular time). Similarly, Pintrich (2000) grouped mastery and performance goals into four patterns of multiple goals: *high-mastery/high-performance, high-mastery/low-performance, low-mastery/high-performance,* and *low-mastery/low-performance*. In all four patterns, a combination of high mastery and high performance-approach goals receive the strongest support because this pattern is assumed to be associated with the highest levels of self-efficacy, task-value, risk-taking, cognitive strategy use, self-regulation, and performance (see Harackiewicz & Linnenbrink, 2005).

This multiple goal perspective has been criticised by several theorists positing that pursuing mastery and performance goals simultaneously may be detrimental (Brophy, 2005; Vansteenkiste et al., 2007). In a review of empirical studies, Senko et al. (2011) identified four primary assumptions of the multiple goal perspective that attract several criticisms: (1) students rarely pursue performance goals; (2) the link between performance goals and achievement is spurious; (3) performance goals have achievement-related costs; and (4) performance goals have interpersonal costs. The review reveals a greater degree of disagreement in the criticisms concerning the positive potentials of performance-approach goals. For example, the conclusion that students rarely generate performance goals spontaneously is considered to be “premature” because the support evidence provided by Brophy (2005) is limited to three studies. On the basis of the review, researchers could conclude that coordinating the two goals - mastery- and performance- approach goals - might be challenging, but it is possible for some students with strong perceptions of competence (Cho et al.,

2011). Thus, research needs to examine how students manage the challenges of pursuing multiple goals successfully as well as investigating characteristics of students that influence the effectiveness of regulatory strategies (Senko et al., 2011).

In summary, the achievement goal literature has documented evidence for differential effects of achievement goal adoption. Initially, the literature highlighted the positive role of mastery goals over performance goals (Ames & Archer, 1988; Nicholls, 1984). With the emergence of the trichotomous achievement goal model, many researchers concentrated on the validity of performance-approach benefits (e.g., Elliot & Moller, 2003; Harackiewicz et al., 2002). Although the debate regarding the outcomes of performance-approach goals has not been settled, researchers recommend the facilitation of mastery goals and the minimisation of performance-avoidance goals (Urdan, 2004a). In recent studies, the bifurcation of the mastery goal construct in the 2 x 2 achievement goal model provides more evidence for the deleterious consequences of the avoidance dimension in achievement goal theory. The introduction of mastery-avoidance goals to achievement goal theory helped clarify the early consistency in negative findings for the avoidance version (Van Yperen et al., 2009).

The numerous studies discussed above have investigated Western students' motivational profile within the achievement goal theoretical framework. The following section will provide evidence for the utility of the achievement goal theoretical framework across cultures.

2.3.2.4 Achievement goals across cultures

Motivational research findings suggest that achievement goals are rooted within culture (Dekker & Fischer, 2008). In a meta-analysis of academic

motivation across thirteen societies, Dekker and Fischer (2008) examined the relations between students' achievement goals and societal values. By using a societal value framework developed by Schwartz (1994), they found that mastery goals were higher in egalitarian societies (societies with an emphasis on taking care of others and feeling a strong commitment to the well-being of other human beings), while higher performance-approach goals were associated with embedded societies (societies with an emphasis on the role fulfillment and obligations to the larger groups that take precedence over the individual's desires). By undertaking a cross cultural comparison, Martin and Hau (2010) demonstrated that even though Australian students and Hong Kong Chinese students responded to goal questions in a similar manner, Australian students reported significantly higher levels of mastery goals than Hong Kong students, suggesting that cultural factors affect students' goal adoption. In addition, it appears that mastery and performance goals contrast with one another, but the relationship between them has been found to be predominantly positive in Chinese contexts (Ee & Moore, 2004; Ho, Hau, & Salili, 2007; Yu & Martin, 2014), as well as in other collectivist contexts such as Philippines and Singapore (Bernardo, 2008; Liem, Lau, & Nie, 2008; Luo, Hogan, & Paris, 2011).

In general, research findings support the applicability of the framework of achievement goal theory in collectivist cultures, but indicate likewise that collectivist students may have different motivational profiles due to the influence of cultural values (Salili, Chiu, & Lai, 2001; Yu & Martin, 2014).

According to achievement goal theory, students' endorsement of a particular achievement goal depends on their perceptions of the learning environment (Ames, 1992b; Meece et al., 2006). Goal structures in a classroom

are salient in achievement goal theory given that they have a powerful influence on student motivation, engagement, and learning (Shim et al., 2012). Thus, it is possible that classroom goal structures may contribute to promoting concordant achievement goals within classrooms. In this study, classroom goal structures will be examined as an antecedent of achievement goals.

2.3.3 Classroom goal structure

This section will provide a brief discussion of classroom goal structures. It begins with a definition of classroom goal structure, discusses the effects of classroom goal structures, and concludes with a review of studies focused on the relationship between classroom goal structures and achievement goals.

2.3.3.1.1 Definition of classroom goal structure

The construct of goal structures was developed from achievement goal theory (Ames, 1992b). Goal structure is "the type of achievement goal emphasised by the prevailing instructional practices and policies within a classroom, school, or other learning environment" (Wolters, 2004, p. 236). In other words, goal structures represent goal-related messages students perceive in a classroom (Urdan, 2004a). Researchers have identified two main types of classroom goal structures: mastery goal structure and performance goal structure. Classroom mastery goal structures focus on understanding learning materials, while classroom performance goal structures emphasise doing better than others, or avoiding the appearance of being incompetent (Ames, 1992b).

2.3.3.1.2 Effects of classroom goal structures

Ames and Archer (1988) suggested that students' perceptions of classroom goal orientation may affect their motivation, cognitive engagement, and achievement. Research has found that classroom mastery goal structures tend to

predict adaptive learning outcomes (e.g. higher task value, interest, effort, persistence, and intrinsic motivation), but classroom performance goal structures are associated with maladaptive outcomes (e.g. increased procrastination, lower persistence and lower intrinsic motivation) (for a review, see Lam, Ruzek, Schenke, Conley, & Karabenick, 2015). It is noteworthy that the patterns of relations for classroom mastery goal structures were more consistent across outcomes than for classroom performance goal structures (Wolters, 2004).

Moreover, the powerful influence of classroom goal structures on students' achievement and affective outcomes has been clearly demonstrated in the literature. In a meta-analytic review of studies conducted from 1991 to 2011, (Rolland, 2012) examined the relationships between classroom goal structures and student outcomes in middle and secondary schools. The review documented the positive effects of classroom mastery goal structures as well as the important role of teacher support (socio-emotional and instructional support) in accounting for students' achievement and affective outcomes. Given that the relation of mastery goal structures to a variety of beneficial outcomes has been shown across studies, researchers encourage teachers to create mastery-oriented classroom environments for students from both Western countries (Ciani et al., 2010) and Eastern countries (Liem et al., 2016). For example, Patrick, Kaplan, and Ryan (2011) recommended establishing a mastery goal structure for a positive and motivating learning environment, focusing on four dimensions of the classroom social climate: teacher academic support; teacher emotional support; classroom mutual respect; and task-related interaction.

2.3.3.1.3 Goal structures and achievement goals

Ames (1992b) suggested that classroom goal structures could interact with students' achievement goals through categories of practice such as tasks, evaluation and recognition, and authority. On the basis of the TARGET system (Task, Autonomy, Recognition, Grouping, Evaluation, and Timing), Ames (1992b) examined six dimensions of classroom practices that facilitate students' mastery or performance goals. For example, classroom practices enhance mastery goals when students are given opportunities to participate in decision making whilst engaging in tasks. From the perspective of Ames (1992b), Midgley and her colleagues (2000) have developed the Pattern of Adaptive Learning Survey (PALS) to assess students' perceptions of the classroom goal structures and their own achievement goals. Using this system, researchers have found that the extent to which classroom goal structures affect personal achievement goals varies across studies (Anderman & Midgley, 1997; Kaplan & Maehr, 1999; Kim, Schallert, & Kim, 2010; Luo, Hogan, et al., 2011).

In research examining the relationships between goal structures and personal achievement goals, goal structures are identified as precursors of students' personal goals (Meece et al., 2006; Rolland, 2012; Wolters, 2004). Typically, students in classrooms with a mastery goal structure are more likely to adopt personal mastery goals, while students in classrooms with a performance goal structure are more likely to adopt personal performance goals (Meece et al., 2006; Polychroni, Hatzichristou, & Sideridis, 2012; Urdan & Schoenfelder, 2006). The relationship between classroom goal structures and personal achievement goals will be further discussed in Section 2.3.5.2.

Another relevant motivating factor in academic settings related to achievement goals is self-efficacy. Research indicates that self-efficacy has emerged as a highly effective predictor of students' motivation and learning (Zimmerman, 2000). In a study by Oort, Vrugt, and Zeeberg (2002), relationships among achievement goals, self-efficacy, and achievements were examined with a sample of beginning and advanced students in high school. The findings showed that perceived self-efficacy contributed to the types of goals they pursued, which in turn contributed to academic achievement. Therefore, self-efficacy also plays a role in accounting for differences in achievement motivation and performance. In the following section, self-efficacy will be examined.

2.3.4 Self-efficacy

This section will provide a brief discussion of self-efficacy, commencing with a definition, followed by a consideration of the importance of self-efficacy, and its influence across cultures.

2.3.4.1.1 Definition of self-efficacy

In self-efficacy theory developed by Bandura (1977), the concept of self-efficacy refers to individuals' beliefs about their capabilities in effectively performing certain tasks. Self-efficacy theory assumes that expectations of personal efficacy determine whether coping behaviour will be initiated, how much effort will be expended, and how long it will be sustained on encountering obstacles. With this assumption, in academic settings students' self-efficacy beliefs are strongly related to their outcomes including choice of tasks, effort expenditure on task, and task persistence. Students with high self-efficacy are more likely to engage in tasks that help develop new skills and capabilities, whereas those with low self-efficacy tend to avoid these tasks (Bandura, 1993).

2.3.4.1.2 Importance of self-efficacy

Research has shown the important role of self-efficacy in academic settings (Bandura, 1993; Linnenbrink & Pintrich, 2003; Zimmerman, 2000). Bandura's (1977) theory posits that self-efficacy beliefs exert their effects through four major processes (cognitive, motivational, affective, and selection) to regulate people's thoughts, feelings, motivation, and behaviour. Self-efficacy beliefs affect students' engagement and learning through the three major processes of behavioural, cognitive, and motivational engagement (Linnenbrink & Pintrich, 2003). For example, in terms of behavioural engagement, self-efficacy is related to how much effort students will spend on tasks, and how willing students are to persist at tasks. More specifically, students who have strong efficacy beliefs are more likely to exert effort and persist at a task when they face difficulties, whereas those with weaker efficacy beliefs tend to give up easily in when confronting difficulties. Self-efficacy also exerts its influence on student motivation through the relation to key indices of academic motivation such as choice of activities, level of effort, persistence, and emotional reactions (Zimmerman, 2000). In terms of choice of activities, students with high efficacy beliefs are more likely to undertake difficult and challenging tasks than those who are low in self-efficacy. Given that self-efficacy plays in important role in mediating all types of achievement behaviour and many other types of behaviour (Bandura, 1977; Pintrich & Schunk, 2002), self-efficacy should be a critical component in understanding goal orientation and academic achievement of students in this study.

Levels of students' self-efficacy can vary across academic subjects and learning tasks (Bernacki, Nokes-Malach, & Aleven, 2015; Bong, 2001, 2004; Fast

et al., 2010). Bong (2004) reported that Korean high school students' self-efficacy beliefs in general school learning, Korean, English, and mathematics were moderately correlated. In another study focused on mathematics, Bernacki et al. (2015) found that students' feelings of efficacy varied during learning tasks, depending on the aspects of prior performance that may serve as sources to inform efficacy judgements. In addition, students were found to have higher levels of mathematics self-efficacy when they were embedded in classrooms with more caring teachers, challenging activities, and a mastery-oriented emphasis (Fast et al., 2010).

2.3.4.1.3 Self-efficacy across cultures

Self-efficacy has been shown to vary across cultures (Chen, Chan, Bond, & Stewart, 2006; Earley, 1994; Klassen, 2004). In a review of 22 studies, Klassen (2004)found that students from non-Western cultural groups (e.g., Asian and Asian-immigrant groups) tend to have lower self-efficacy than those from Western groups (e.g., Western Europe, Canada). According to Klassen (2004), differences in self-efficacy levels reflect differing conceptualisations of self in collectivist and individualist groups. In addition, although lower levels of self-efficacy found in some collectivist culture groups tend to predict lower subsequent performance, this outcome is not always the case. In some cases, non-Western students with modest self-efficacy beliefs have been found to have higher achievement outcomes than Western students with higher self-efficacy (Schunk & Pajares, 2009).

2.3.4.1.4 Summary

In summary, from the review of the research literature, there are three reasons to investigate the interrelations between satisfaction of the need for

teacher-student relatedness, classroom goal structures, achievement goals, and self-efficacy within the framework of an integrated model. First, these variables describe multiple aspects of motivation for learning, which is relevant for investigating their contribution to student motivation within one conceptual framework. Second, each of these motivational variables has been reported as a potent determinant of academic achievement outcome (Anderman & Midgley, 1997; Bandura, 1997; Goodenow, 1993). Finally, some researchers have recently attempted to investigate the integration of self-determination theory and achievement goal theory (Ciani et al., 2011; Diseth et al., 2012). Nevertheless, the pattern of basic psychological needs associated with achievement goals, which is adaptive in Western contexts, may be different in non-Western contexts because of cultural differences in the basic psychological needs of students (Zhou et al., 2012). In this study, teacher-student relatedness, classroom goal structures, achievement goals, and self-efficacy are situated within one conceptual framework. The research literature outlining the relationships between these variables in Western and non-Western contexts are presented in the following section.

2.3.5 Relationships between the variables

The conceptual framework seeks to integrate three lines of inquiry: (1) teacher-student relatedness, achievement goals, and academic achievement, (2) classroom goal structures, achievement goals, and academic achievement, and (3) self-efficacy, achievement goals, and academic achievement. Each line of inquiry is based on previous research findings discussed in the following sub-sections.

2.3.5.1 Teacher-student relatedness, achievement goals, and academic achievement

The relationship between basic needs support and achievement goals has been well established in recent studies (Ciani et al., 2011; Diseth et al., 2012). From a self-determination perspective, Ciani et al. (2011) found students' satisfaction of the need for autonomy and relatedness were predictors of their initial self-determined class motivation, which in turn influenced mastery goals. However, self-determined motivation did not bear any relation to students' initial performance goals, including both approach and avoidance goals. Similarly, Diseth et al. (2012) found competence and relatedness were positively related to mastery goals, and unrelated to performance goals. Of the three basic needs support variables, relatedness demonstrated the most consistent relationship with mastery goals and life satisfaction. Hui et al. (2011) also posits that there is a positive relationship between three components of self-determination and academic motivation among Chinese Hong Kong students. Results indicated that competence, followed by relatedness and filial piety contributed to the predictive model of academic motivation. These results support the position that the need for competence, autonomy, and relatedness is universal (Ryan & Deci, 2000a), but the relative importance of each need may be different in different cultures (Markus & Kitayama, 1991).

Research pertaining to relationships between achievement goals and academic achievement has produced mixed findings. Barron and Harackiewicz (2001) reported mastery and performance-approach goals as predictors of U.S. college students' levels of achievement. Ng (2006) found similar relationships for Chinese distance education learners in Hong Kong. However, Tanaka and

Yamauchi (2001), in a study of Japanese high school students, found positive effects of mastery goal orientation on intrinsic interest and academic achievement, but no similar patterns for performance goal orientation in female students. A review of previous studies indicated that a positive relationship between achievement for both mastery and performance goal orientation accounted for approximately 40% of the effects reported, with the remaining effects found to be non-significant or negative (Linnenbrink-Garcia, Tyson, & Patall, 2008).

Regarding the relationships between teacher-student relatedness and academic achievement, the literature has consistently demonstrated that these two variables are correlated with each other across all ages, from kindergarten through middle school, to high school. For example, relatedness to teachers was found to assist third to sixth grade elementary schoolers to be more engaged in academic activities, resulting in higher levels of achievement (Furrer & Skinner, 2003). Moreover, relatedness to teachers of American middle school students was indirectly associated with their classroom grades, via student behaviour and satisfaction with school (Woolley, Kol, & Bowen, 2009). In other studies of Australian high school students (e.g., Zimmer-Gembeck, Chipuer, Hanisch, Creed, & McGregor, 2006), the association between teacher-student relatedness and achievement was fully mediated by students' engagement. Recently, after examining 99 studies including students from preschool to high school, Roorda et al. (2011) suggested that positive and negative teacher-student relationships were significantly correlated with achievement and engagement. While the associations with engagement ranged from medium to large, the associations with achievement were weaker, ranging from small to medium.

In summary, relationships between teacher-student relatedness and achievement goals and academic achievement are supported by existing findings. A suggested path analysis of these variables is as follows:

Teacher-student relatedness → Achievement goals → Academic achievement

2.3.5.2 Classroom goal structures, achievement goals, and academic achievement

The correlation between classroom goal structures and achievement goals becomes more complex when the number of achievement goals increases and cultural characteristics are taken into consideration. Within the trichotomous model, Church et al. (2001) found that a mastery goal structure was a positive predictor of mastery goals, whereas performance goal structure predicted both performance-approach and performance-avoidance goals. With a similar model, Bong (2008) in a study of Korean high school students found that in addition to the traditional relationships, students' perceptions of both classroom mastery and classroom performance goal structures were positively associated with their mastery achievement goals and self-efficacy. However, Lau and Nie (2008) reported classroom goal structures showed no interaction with either mastery goals or performance-approach goals in Grade 5 classrooms in Singapore. The findings also showed that classroom mastery goal structures and mastery goals had adaptive relations to students' outcomes (e.g. math achievement, engagement, and interest), whereas classroom performance goal structures and performance-avoidance goals showed maladaptive relations.

In a recent study of using the 2 x2 model, Luo, Hogan, et al. (2011) examined the roles of personal characteristics (independent self-construal vs interdependent self-construal) and classroom goal structures in predicting

Singapore students' achievement goals. They found that classroom mastery goal structure was a positive predictor of mastery-approach and mastery-avoidance goals, while classroom performance goal structure was a positive predictor of performance-approach and performance-avoidance goals as well as mastery-avoidance goals. In addition, students with interdependent self-construal were more likely to adopt mastery-approach, mastery-avoidance, and performance-avoidance goals in classrooms with performance goal structures. These results are unsurprising, given that students' adoption of achievement goals are affected by cultural beliefs about harmony, hierarchy, and egalitarianism (Dekker & Fischer, 2008; Tanaka & Yamauchi, 2001), resulting in a variety of interactions between classroom goal structures and achievement goals. Since Singapore is regarded as a modern Confucian society, more research is needed to examine the generalisability of these findings to other collectivistic cultures (Luo, Hogan, et al., 2011).

Although the effects of classroom goal structures or achievement goals on achievement outcomes have been evidenced in the literature (for a review, see Meece et al., 2006), the model for the joint influence is limited to a few studies (Church et al., 2001; Murayama & Elliot, 2009; Wolters, 2004). For example, Church et al. (2001) found that the influence of classroom goal structures on achievement outcomes (graded performance and intrinsic motivation) was indirect and achievement goals played a mediating role in this relationship. Murayama and Elliot (2009) examined the roles of classroom goal structures in different effect models (direct, indirect, and interactive) with a sample of Japanese high school students. Results indicated that classroom goal structures had both direct and indirect effects on intrinsic motivation and self-concept. Regarding the interaction

between the two goals levels, mastery goal structures were found to be a predictor of mastery goals, but performance goal structures were not related to any sort of performance goals in the indirect model.

In summary, examination of the evidence indicates that students' perceptions of classroom goal structures have been found to be related to achievement outcomes either directly or indirectly through the mediation of achievement goals. A predicted path analysis of these variables is portrayed below:

2.3.5.3 Self-efficacy, achievement goals, and academic achievement

Research provides mixed findings for relationships among self-efficacy, achievement goals, and academic achievement. Some researchers treat achievement goals as predictors of self-efficacy (Phan, 2009; Sakiz, 2011), whereas others propose that self-efficacy is predictive of achievement goals (Diseth et al., 2012; Fenollar et al., 2007; Greene, Miller, Crowson, Duke, & Akey, 2004). As an antecedent of achievement goals, self-efficacy (Bandura, 1977; Elliot & Church, 1997) has been shown to exert a positive effect on both mastery- and performance-approach goals, but a negative or null effect on performance-avoidance goals (Diseth, 2011; Jiang et al., 2014; Liem et al., 2008). Self-efficacy also acts as a mediator in the relationship between achievement goals and academic performance (Phan, 2009). However, self-efficacy was not related to either performance-approach goals or academic performance in the study by Fenollar and colleagues (2007). These mixed findings have been supported in a meta-analysis by Richardson, Abraham, and Bond (2012), showing medium-sized

correlations between these two constructs and students' grade point average (GPA).

In summary, research studies concerning the relationship between self-efficacy, achievement goals, and academic achievement have produced inconsistent findings. Thus, more research is needed to examine a path analysis of these variables. A possible path of these variables is as follows:

Self-efficacy → Achievement goals → Academic achievement

2.3.6 Conclusions from the review of literature

The literature review focused on the theoretical relationships between each of the study variables: teacher-student relatedness, classroom goal structures, achievement goals, and self-efficacy. Empirical work conducted with Western students has demonstrated the conceptual importance and predictive utility of each theoretical framework for characterising student motivation and achievement outcomes. Research with students from collectivist cultures provides evidence for the relevance of the concepts to academic motivation across cultures, suggesting the potential applicability of these three theoretical frameworks to Vietnamese students. The evidence presented in previous research demonstrates a number of important aspects from which this study is conceptualised.

First, although research has shown that self-determination theory (SDT), achievement goal theory, and self-efficacy theory are effective in explaining student motivation and success in their academic achievement, very few empirical studies have examined the integration of all these theoretical frameworks within one conceptual model. One study by Ciani et al. (2011) examined the association between SDT and achievement goal theory on a sample of undergraduate preservice teachers. They reported evidence for a promising integration of SDT

and achievement goal theory, but the study demonstrated some methodological limitations in testing the path model. In their study, the small sample size and the relatively low internal consistency of selected measures limited the fit level of the path model, which required a replication of the proposed model in other research. Another recent study by Diseth et al. (2012) involved basic psychological needs, self-efficacy, and achievement goals within a conceptual model. However, in this quantitative study, self-efficacy was treated as a mediator in the relation between basic psychological needs and achievement goals. Furthermore, this study did not establish a direct relation between basic needs and academic achievement.

Second, the research described in this review indicates the presence of several relationships among teacher-student relatedness, classroom goal structures, achievement goals, self-efficacy, and academic achievement. Findings pertaining to relations between teacher-student relatedness and academic achievement are clear and in accordance with existing theoretical contentions and empirical evidence (Furrer & Skinner, 2003; Roorda et al., 2011; Zimmer-Gembeck et al., 2006). Furthermore, consistent evidence in the literature suggests that the relations between the three theoretical frameworks and students' achievement outcomes are consistent. However, the findings have been inconsistent regarding the relation between classroom goal structures and achievement goals, and likewise between self-efficacy and achievement goals. In addition, there is a need to examine the interrelationships involving self-efficacy, achievement goals, and academic achievement within one conceptual model.

Finally, there is very limited evidence to date to support the importance of these theoretical frameworks in explaining students' achievement goal profiles in Vietnamese settings. No research has been conducted to understand why

Vietnamese students endorse a particular achievement goal and what factors contribute to the success of academic achievement. Even though past research has examined issues of motivation for learning, almost all studies focused on investigating student motivation to learn English in higher education in Vietnam (Luu, 2012; Ngo, Spooner-Lane, & Mergler, 2015; Ngo, 2015; Phan, 2011; Tran, 2007; Tran & Baldauf Jr., 2007). These studies offered some insights into the motivation of Vietnamese higher education students to learn English and effective ways to enhance their learning English performance. It is noted that only a few of these studies (Ngo, 2015; Phan, 2011) drew on SDT to investigate students' motivation.

Based on the previous discussion, the present study aimed to examine how the integration of these theoretical frameworks helps explain students' achievement goal profiles in a collectivist culture such as Vietnam. The goal of the study was to elucidate the relationships between teacher-student relatedness, classroom goal structures, achievement goals, self-efficacy, and academic achievement of students. The study investigated three relationship combinations: (1) teacher-student relatedness, achievement goals, and academic achievement, (2) classroom goal structures, achievement goals, and academic achievement, and (3) self-efficacy, achievement goals, and academic achievement. The relative contribution of each variable in predicting students' achievement goals and academic achievement was also examined, along with differences in these variables across students' personal and contextual characteristics (e.g. gender, class type).

In conclusion, the theoretical assumptions and empirical evidence outlined in the literature review form the premise on which the conceptual framework for

this study was developed. Predicted path analyses of the combined variables, as justified by the previous research findings, would indicate the following hypothesised model:

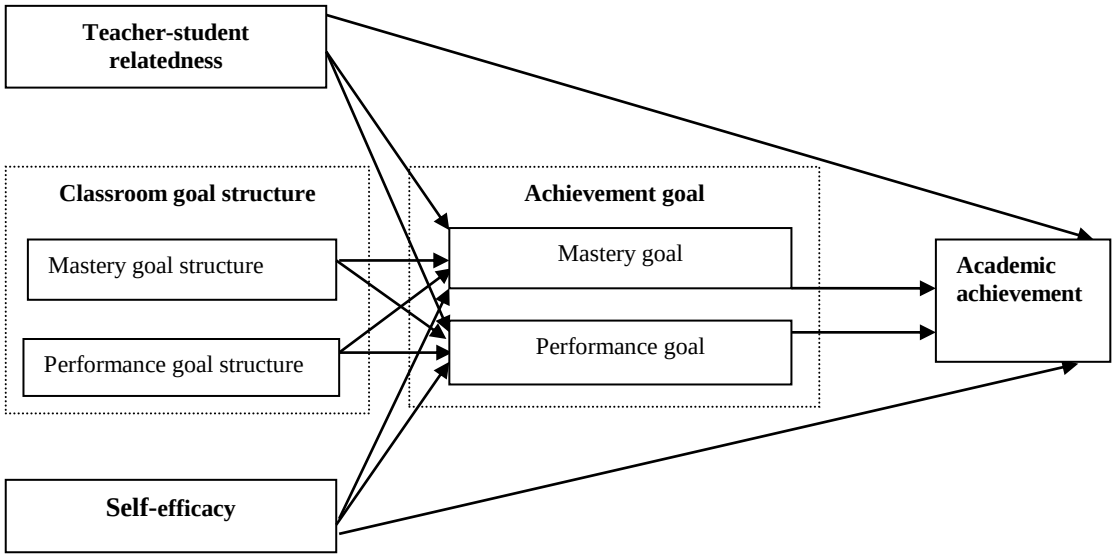

Figure 2.1. A hypothesised model depicting the relations between teacher-student relatedness, classroom goal structure, self-efficacy, achievement goal, and academic achievement.

2.3.7 Research questions

The study was guided by the following questions:

1. Does teacher-student relatedness, classroom goal structures, and self-efficacy predict achievement goals in Vietnamese senior high school students?

2. Does teacher-student relatedness, achievement goals, and self-efficacy predict academic achievement in Vietnamese senior high school students?

3. Are there significant differences in teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement across demographic factors?

4. What is the relationship between teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement of Vietnamese senior high school students?

On the basis of existing research evidence, the hypotheses relating to the research questions were as follows:

Hypothesis 1. Given the strong theoretical support in the literature, it is expected that teacher-student relatedness will be a significant positive predictor of mastery goals and academic achievement.

Hypothesis 2. Owing to conflicting findings in the literature, an exploratory position is taken to examine the cross-level interaction between classroom goal structures and achievement goals as well as the joint influence of these two goals levels on academic achievement.

Hypothesis 3. Given the strong theoretical support in the literature, it is expected that self-efficacy will be a significant positive predictor of achievement goals and academic achievement.

2.3.8 Summary

In summary, this chapter has reviewed the literature of learning motivation to make a case for investigating the relationships between teacher-student relatedness, classroom goal structures, achievement goals, self-efficacy, and academic achievement of Vietnamese high school students. The perspectives of

self-determination, achievement goals, and self-efficacy have been shown to be useful frameworks to understand students' motivation for learning in a variety of contexts. In the context of Vietnam, research on student motivation is limited, and there has been no research investigating students' achievement goals across school levels. This study, therefore, provides further insights about learning motivation by attempting to amalgamate these theoretical frameworks within one conceptual model. These theoretical frameworks help to understand the utility of the theoretical frameworks outlined previously helps understand the achievement goal profiles of Vietnamese students and the success of their academic achievement. The next chapter will provide a detailed outline of the methodology and study design that was used to examine the relationships within the model.

Chapter 3 Research Design

3.1 Overview

This chapter provides a description of the methodology guiding the study. First, a brief overview of the research approach is provided along with the rationale for the selection of a mixed methods design. The following section will outline participant selection, instruments, procedures for data collection, and data analyses, for each phase of the mixed-method research. Finally, ethical issues of the research are addressed.

3.2 Methodology

The study employed a mixed methods approach, which allowed a blending of both quantitative and qualitative data to enable a more complete understanding of the research problem (Creswell, 2014). With a mixed methods approach, a researcher can combine elements of qualitative and quantitative research approaches such as data collection, analysis, and inference techniques (Johnson, Onwuegbuzie, & Turner, 2007).

Mixed methods research is oriented by the philosophical principle of pragmatism which posits that the most important consideration for the choice of methods is those that can be used to understand the problem most effectively (Tashakkori & Teddlie, 2003). According to pragmatists, the research question should drive the methods used since the research question is considered to be more important than either the method or the philosophical worldview underlying the method. Thus, a pragmatic orientation encourages individual researchers to

have freedom of choice. They can choose the methods, techniques, and procedures that are the most appropriate for finding answers to their research question (Creswell, 2003). In this way, pragmatism helps researchers access multiple methods and different forms of data collection and analysis in mixed methods studies (Creswell & Plano Clark, 2007; Tashakkori, Teddlie, & Publications, 2010).

On the basis of the pragmatic approach, Tashakkori and Teddlie (2003) propose the integration of both quantitative and qualitative techniques within a single study. When quantitative and qualitative techniques are used in the same framework, pragmatic researchers can incorporate the strengths of both methodologies to best understand a research problem (Onwuegbuzie & Leech, 2005). For example, the inclusion of quantitative data can help generalise research findings, whereas the inclusion of qualitative data can help explain relationships uncovered by quantitative data. Importantly, from this combination of techniques mixed methods researchers gain benefits including a reduction in confirmation bias and other sources of invalidity, an increase in internal and external validity, and can take advantage of data reduction methods during the data analysis process. Morse (2003) describes the advantages of using mixed methods as obtaining a more complete picture of human behaviour and experience, on which researchers are better able to increase their understanding and achieve their research goals in a timely manner.

A mixed methods researcher needs to provide a rationale for selecting this type of design early in a study (Creswell, 2012). In line with this expectation, there are two major reasons for employing a mixed methods design in this study. The

first reason is the current literature on the relationship between teacher-student relatedness and achievement goal orientations is limited in scope and quantity, and is especially lacking in mixed methods studies. This study sought to address the gap in the literature by providing a broader perspective and understanding of the relationship within a collectivistic culture. The second reason is the research questions in this project cannot be answered fully without a blending of both quantitative and qualitative data. By integrating both methods within this study, it was expected that the results of the qualitative research component would provide a more comprehensive description of the relationships identified in the quantitative research component, and thus provide stronger evidence to support the findings.

3.3 Research Design

Given the study focuses on examining the relationships between teacher-student relatedness, mastery goal structure, achievement goals, self-efficacy, and academic achievement, a quantitative approach was selected which could be used to measure the degree of the relationship between these variables (Creswell, 2012). However, this study needed to not only quantitatively examine the existence of the relationships among variables through statistical techniques, but also incorporate qualitative techniques, such as open-ended interviews, to supplement the quantitative data for a deeper understanding of the nature of the relationships uncovered. Thus, integrating both qualitative and quantitative methods into a methodological framework was considered to be the most appropriate approach for this study.

After a pilot study, the research project consisted of two phases: Phase 1, a quantitative study and Phase 2, a qualitative study. These two phases were conducted in sequence, and Phase 1 was preceded by a pilot study. The general administration of the study is illustrated in Figure 3.1.

An overview of the research context, participants, and instruments for each phase will now be provided.

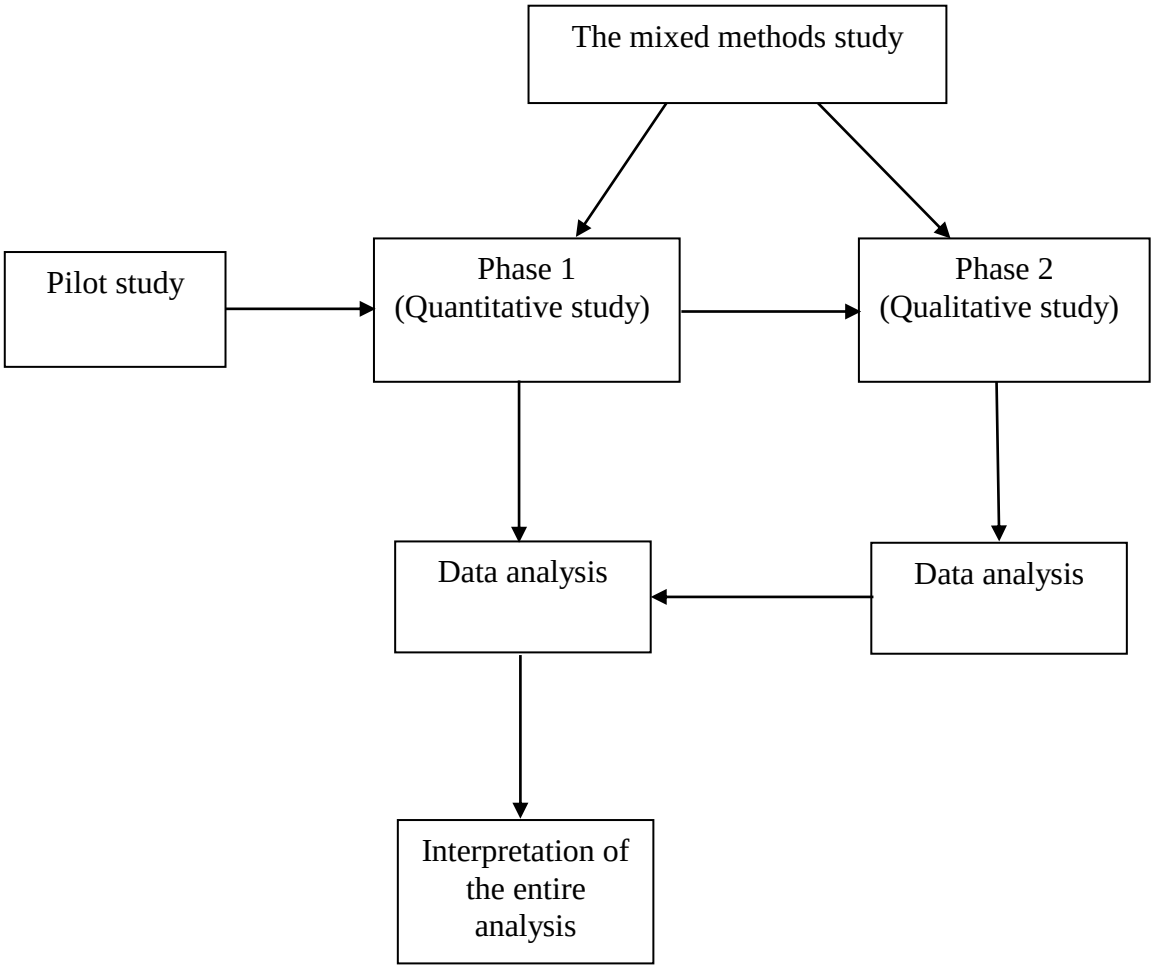

Figure 3.1 Schematic design of the study

3.3.1 Research site

This study was conducted in Ba Ria-Vung Tau province, in the southern region of Vietnam. The province comprises two cities and six districts, covering nearly 2,000 square kilometres. The province has a total population of above 1 million (Ba Ria - Vung Tau, 2011). Ba Ria – Vung Tau is located in the Southern Key Economic Zone. It is known as a centre of energy, heavy industry, tourism, and sea ports of the country. The local government has put a considerable investment in education and training. There are a total of 30 senior high schools in the province (Ba Ria - Vung Tau Department of Education and Training, 2014)

In the study, two well-established, public senior high schools (years 10 to 12) in the region were selected. One is located in Ba Ria City, an urban area, and the other is located in Dat Do district, a typical rural suburban district. In order to enter the senior high schools, students are required to take an examination organised by the Department of Education and Training. On the basis of the achievement in the entrance examination and academic performance in junior high schools, students are streamed into general or advanced classes. The higher-ability students are normally streamed into advanced classes, whereas the lower-ability students are placed into general classes. An academic year comprises a total of 37 weeks (19 weeks for semester 1 and 18 weeks for semester 2). In the Vietnamese senior high school system, graduation examination is compulsory for grade 12 students. In order to pass the graduation examination, high school students have to obtain average scores of three compulsory subjects (mathematics, Vietnamese literature, and English) and one alternating subject (e.g. physics, history).

3.3.2 Participants

Students in the 10th grade were selected as the target population. There were two reasons why grade 10 was selected as the appropriate grade level for the current study. First, as 10th graders, the participants are experiencing the first year of senior high schooling. As such, they experience a new learning environment and new psychological challenges and social relationships. Secondly, the role of teachers in the period of transition to senior high school is very important, especially since in Vietnamese society teachers have responsibility for students in both social and academic contexts. Therefore, this schooling year provides a challenging context for investigating teacher-student relationships and students' achievement goal orientation.

3.3.3 Instruments

The purpose of the study was to investigate the relationships among teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement. The items measuring teacher-student relatedness were adapted from the subscales of the *Teacher As Social Context (TASC)* (Belmont et al., 1992). The items related to achievement goals, classroom goal structures, and self-efficacy were adapted from the *Patterns of Adaptive Learning Survey Scales (PALS)* (Midgley et al., 2000). These survey measures have been used with students from collectivist cultures (e.g., Bao & Lam, 2008; Lau & Nie, 2008; Liem et al., 2008; Luo, Paris, Hogan, & Luo, 2011). More information on the instruments used in this study is provided in the following subsections.

3.3.3.1 Teacher As Social Context (TASC)

Teacher As Social Context (TASC) was developed to measure teacher behaviours in the classroom (Belmont et al., 1992). Teacher behaviours are assumed to have an impact on children's intrinsic motivation when teachers meet or ignore their basic psychological needs. According to this perspective, teachers can create a school context in which specific teacher behaviours should foster students' fulfilment of basic psychological needs. These needs include the need for competence, autonomy, and relatedness to other people. The TASC consists of two measures designed to examine: (1) teacher behaviour using teachers' reports of their interactions with each child in their classrooms, and (2) student experience of teacher behaviour using children's reports of their interactions with their teachers. Each measure consists of three major constructs: involvement, structure, and autonomy support. This study focused on students' reports of their teacher involvement.

Although the measure was developed for students in Western countries, cross-cultural researchers have recently modified the *Teacher As Social Context* questionnaire (TASC student report) for investigating relationships between teachers and students in Asian cultures. Zhou et al. (2012) investigated the influence of teacher-student relationships on Chinese and American students' perceptions of their teachers' controlling behaviour. The Cronbach's alphas of the questionnaire in this study were .80 and .85 for the Chinese and the U.S samples, respectively. Maulana et al. (2013)studied changes in two components of teacher-student relationships (teachers' involvement vs. rejection) and examined links with academic motivation in Dutch and Indonesian secondary schools. Results supported the cross-cultural validity of the TASC, and indicated the unique

contribution of teacher's involvement in early adolescents' motivation in both countries. In other Asian studies, the short form of *Teacher As Social Context* Questionnaire was adapted to measure students' perceptions of their relationship with their home-room teachers (α = .85) (Bao & Lam, 2008), and students' perceptions of the care and warmth students received from their teachers in project-based learning (α = .88) (Lam, Cheng, & William, 2009).

3.3.3.2 Patterns of Adaptive Learning Survey Scales (PALS)

Patterns of Adaptive Learning Survey Scales (PALS) was developed by Midgley et al. (1998) to examine relations between the learning environment and students' motivation, affect, and behaviour. The scales in PALS were constructed on the basis of goal orientation theory. Student scales assessed 1) personal achievement goal orientations; 2) perceptions of teacher's goals; 3) perceptions of the goal structures in the classroom; 4) achievement-related beliefs, attitudes**,** and strategies; and 5) perceptions of parents and home life. These scales have been shown to be useful and valid measures of goals as the reliability coefficient variability was assessed across studies at different levels (Ross, Blackburn, & Forbes, 2005). In this study, the scales of personal achievement goal orientations, classroom goal structures, and self-efficacy beliefs were adopted to measure the constructs.

An outline of the phases in the mixed methods design is presented in Table 3.1. A detailed description of each phase is provided in the following sections.

Table 3.1

An outline of the phases in the mixed methods design

	Pilot study	**Phase 1 (Quantitative study)**	**Phase2 (Qualitative study)**
Objectives	To pilot the translated questionnaire to ensure that the translated and original versions are equivalent.	To answer the research questions, the following objectives are formulated: - to examine whether teacher-student relatedness, classroom goal structures, and self-efficacy predict achievement goals in Vietnamese senior high school students - to examine whether teacher-student relatedness, achievement goals, and self-efficacy predict academic achievement in Vietnamese senior high school students - to determine whether teacher-student relatedness, classroom goal structures, achievement goals, and self-efficacy differ across demographic factors - to determine whether there is a relationship between teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement in Vietnamese senior high school students?	To provide more insight into the quantitative results
Research instrument		Paper-based surveys -Teacher As Social Context (TASC) (Belmont et al., 1992) - Pattern of Adaptive Learning Survey Scales (PALS) (Midgley et al., 2000)	Follow-up interviews
Target population		10th grade students in 2 public senior high schools	
Sampling		Sequential mixed sampling	
Participants	n = 15 + 20	n = 353	n = 12
Data analysis technique	Tests of Internal consistency reliability	- Descriptive analysis to describe characteristics of the sample (e.g. means of age) - Correlation analysis to show relationships - Factor analysis and tests of internal consistency reliability to show evidence of validity and reliability of the translated measures - MANOVAs and ANOVAs to compare means - Multiple regression to examine the predictive relationships - Path analysis to confirm the relationships	Content analysis

3.3.4 Pilot study

The goal of the pilot study was to determine the final version of survey items in the questionnaire. Piloting is vital as it helps reduce the incidence of non-response to the questionnaire (Gray, 2014). Since the purpose of a survey is to gather data in a 'one-shot' attempt, questions need to be accurate, unambiguous, and simple to complete. Thus, the pilot study was designed to test the clarity, accuracy, and the appropriateness of the questions that would be used in the Vietnamese classrooms. In this study, the questionnaire was first translated into Vietnamese, and then the translated version was piloted with a small number of participants. The discussion of instrument translation methods, participant selection, and the procedure of the pilot study is provided below.

3.3.4.1 Instrument translation methods

In order to prepare research instruments for use with different cultures, translating the instruments into other languages is important (Hilton & Skrutkowski, 2002). Since the research site was two senior high schools in Vietnam, it was necessary to translate the instruments (in English) into Vietnamese, the native language of the participants. Translating research instruments aims to provide evidence that the meaning of items in the translated version is equivalent to items in the original language (Endacott, Benbenishty, & Seha, 2010). In a review of guidelines for enhancing equivalence of a translated version, Hilton and Skrutkowski (2002) described three existing methods: one-way translation, translation by committee, and back translation. Among these methods, back translation is the most common and best-known method for achieving linguistic equivalence (Duffy, 2006). In a back translation approach, at least two translators are required: the first translator who translates the instrument

from the source language into the target language (forward translation) and the second translator who translates that translated instrument back into the source language (back translation). These two translators are required to work independently and their products are then compared for linguistics sameness. If the original and back translated versions are identical, the translation is considered to have achieved equivalence (Duffy, 2006; Hilton & Skrutkowski, 2002). Back translation was used for translating instruments in this study and the procedures applied are described later.

3.3.4.2 Participants

Grade 10 students from two Vietnamese senior high schools were invited to participate in the pilot study. Consent forms were distributed to students in one class period where the researcher explained the study. When the consent forms were returned, students (n = 35) were randomly selected (see Appendix C). This group of participants have similar characteristics to the target group in that they were grade 10 students from the two senior high schools selected and their ages ranged from 15 to 19. However, the participants of the pilot study were not part of the target group as suggested by (Gray, 2014).

3.3.4.3 Procedures

In the current research, the techniques of back translation were employed and the translation process followed a three-stage approach.

Stage 1 involved both forward translation and back translation. The English version of the instruments was translated into Vietnamese and then the translated version in Vietnamese was translated back to English. These two steps were independently carried out by two senior lecturers of the faculty of English linguistics and literature in University of Social Science and Humanities in

Vietnam (see Appendix D). One achieved a PhD degree in an English speaking country and both of them have experience in teaching translation skills to Vietnamese learners of English. Endacott et al. (2010) suggests that translation quality can be influenced by the position the translator holds in relation to the researcher and the competence/background of the translator. The background of these two translators ensures that the intended translated instruments are reliable and valid for use with Vietnamese students.

Stage 2 of the instrument translation process focused on examining the equivalence of the translated version. Two versions of the instruments (the back translated version and the original version) were sent to an English native scholar, who helped compare and identify discrepancies between the two versions. There were some discrepancies between the two versions of the instrument (due to slight modifications), but they were minor and did not influence the meaning of the items. Thus, it was determined that the translated version was equivalent in meaning.

In stage 3, when the translation had been completed, the validity of the translation was tested (Duffy, 2006). In this study, the translated measures were tested for face validity, focusing on the participants' need for a clear interpretation of the items (Velayutham, Aldridge, & Fraser, 2011). The pilot study was administered to students (n=15) in one class period after the consent forms were returned to the researcher. Students were asked to respond to the questionnaire items in each measure. Upon the completion of each measure, students were asked to assess the clarity of the items. These students were also asked to indicate which items they felt were not suitable and, if inappropriate, to propose improvements,

deletions, and additions. Each measure took approximately 5-10 minutes to administer.

In considering the translation validity, the researcher also noted the accuracy of a measurement outcome in the Vietnamese version. A measure of internal consistency was selected as it is an effective method of evaluation, referring to the degree to which a test taker responds to items in the same way (Field, 2013). According to Field (2013), the internal consistency can be measured by using Cronbach's α, which is considered the most common measure of scale reliability. Cronbach's α is widely used because it can calculate "the variance within the item and the covariance between a particular item and any other item on the scale" (p. 709). In this study, Cronbach's α was calculated for each measure to provide an indication of the internal consistency reliability. By convention, the alpha should be at least 0.70 or higher for a satisfactory scale and a cut-off of 0.80 is required for a good scale (Cohen, Manion, & Morrison, 2011). On the basis of the statistical reliability tests, Cronbach's α for the six measures were acceptable values (teacher-student relatedness = .80; mastery goal = .70; performance goal = .78; mastery goal structure = .76; performance goal structure = .71; self-efficacy = .73). As a result of this statistical analysis and the feedback from the participants, two items were deleted from the performance goal orientation measure and one item was deleted from the mastery goal structure measure. Minor editing changes were made to three items in the teacher involvement measure.

Gray (2014) advises that once the questionnaire has been amended, the researcher can retrial with another group who are similar to, but not part of the target group. Thus, the pilot study was conducted with another group of students (n=20). The researcher followed the same procedures as in the previous pilot

study, and students gave feedback on the edited questionnaire. The Cronbach α reliability levels were relatively stable (teacher-student relatedness = .80; mastery goal = .71; performance goal = .80; mastery goal structure = .78; performance goal structure = .72; self-efficacy = .76). Additional editing changes were done to each measure preparatory to the main study.

3.3.5 Quantitative study – Phase 1

The aim of the quantitative study was to investigate the relationships between teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement in Vietnamese senior high school students. A consideration of issues of participant selection, instruments, and procedure is presented in the following sections.

3.3.5.1 Participants

In the quantitative portion of this study, the recruitment of participants was done using stratified random sampling. Teddlie and Tashakkori (2009) define stratified random sampling as a sampling technique that combines stratified sampling with random sampling. This type of sampling is used when there is a need to investigate subgroups of the population, with each group containing subjects with similar characteristics. On the basis of the senior high school curriculum, the population of the study was divided into two groups: advanced and general. Each group was sampled randomly and equally so that the sample size for each group was approximately the same.

There were 502 students that voluntarily agreed to participate in this study. Of these, 64 (12.7%) students did not bring the parental consent forms back on the date of survey conducted or the consent forms were not signed properly, 48 (9.6%) students did not respond to all the initial demographic questions, and 37 (7.4%)

did not complete the final section of the survey. Thus, a total of 353 (70.3% of the potential participants) survey responses were used for the data analyses. Demographic information of the participants is described in the following paragraphs.

3.3.5.1.1 Age

The age of participants ranged from 15 to 19 years old (mean = 16.06 years; Standard deviation = .38). With 353 responses to the question on age, 330 were 16 years or younger, and 23 were 17 years of age or older. All the respondents at 17 years of age or older were students from the rural school, and the respondents at 15 years of age were from the urban school. Table 3.2 presents the distribution of age of students in the two school districts.

Table 3.2

Distribution of participants by age and school district

School district	Age						
	15	16	17	18	19	Total	Percentage (%)
Urban	6	151	0	0	0	157	44.5
Rural	1	172	17	5	1	196	55.5
Total	7	323	17	5	1	353	100

3.3.5.1.2 Social-economic status

Of the 353 participants who indicated their socio-economic status in the survey, 302 (85.5% of the respondents) reported their socio-economic status as average or above average. Table 3.3 illustrates the socio-economic status of the students in the two school districts.

Table 3.3

Distribution of participants by socio-economic status and school district

School district	Socio-economic status					
	Far below average	Below average	Average	Above average	Far above average	Total
Urban	2	14	97	44	0	157
Rural	3	32	141	20	0	196
Total	5	46	238	64	0	353

3.3.5.1.3 Gender and class type

As shown in Table 3.4, 207 (58.6%) of the students were female and 146 (41.4%) were male. There were 200 students (56.7%) from the advanced classes, and 153 (43.3 %). students from the general classes.

Table 3.4

Distribution of participants by gender and class type

		Class type		Total	Percentage (%)
		Advanced	General		
Gender	Male	72	74	146	41.4
	Female	128	79	207	58.6
Total		200	153	353	100

3.3.5.1.4 Teacher gender and parental occupation

As shown in Table 3.5, female mathematics teachers comprised 66.3 % in the sample, while male mathematics teachers comprised 33.7 %. 66.4 % of homeroom teachers were female, while 33.1 % were male.

Students reporting their parent occupation indicated that fathers were the main supporters in the family. 97.5 % of the participants reported that their fathers

were working and only 2.5 % of the fathers were unemployed, while 35.1 % indicated that their mother was a housewife.

Table 3.5

Demographic diversity of teacher gender and parent occupation

	N	Percentage %
Homeroom teacher's gender		
Male	117	33.1
Female	236	66.9
Math teacher's gender		
Male	119	33.7
Female	234	66.3
Father's job		
Labourer	141	40.0
Professional	23	6.5
Government job	39	11.0
Non-professional/service	141	40.0
Unemployed	9	2.5
Mother's job		
Labourer	83	23.5
Professional	25	7.1
Government job	17	4.8
Non-professional/service	104	29.5
Housewife	124	35.1

3.3.5.2 Instruments

The survey was divided into five sections including demographic information, teacher-student relatedness, achievement goals, classroom goal structures, and self-efficacy. In this survey, there were six measured variables consisting of teacher-student relatedness, mastery goals, performance goals, mastery goal structure, performance goal structure, and academic self-efficacy. All of the six measures used a Likert format with the following possible responses: 1 = Strongly Disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree or 5 = Strongly Agree. The description of each measure is presented in the following subsections.

3.3.5.2.1 Teacher-student relatedness

Teacher-student relatedness was measured using the Teacher Involvement scale (a student report-short form) from *Teacher As Social Context* (α = .80, Belmont et al., 1992). For this study, the 8-item scale of *Teacher Involvement* was used to assess the degree to which participants felt related to their teachers when teachers took time for, and expressed enjoyment, caring, and appreciation in their interactions with students. Involvement included items tapping teachers' *affection* (liking, appreciation, and enjoyment of the student, e.g., "the math teacher likes me"), *attunement* (understanding, sympathy, and knowledge about the student, e.g., "the math teacher knows me well"), *dedication of resources* (aid, time, and energy, e.g., "the math teacher spends time with me"), and *dependability* (availability in case of need, e.g., "I can't depend on my math teacher when I need his/her help"). Students were required to rate their levels of agreement with items that described their math teacher on a 5-point Likert-scale (1 = *strongly disagree* to 5 = *strongly agree*). Scores on the scale were calculated after three negatively worded items were reversed. A high score indicated a high degree of relatedness and a low score indicated a low degree of relatedness. The internal consistency of the scale in the current study was .80.

3.3.5.2.2 Achievement goals

Achievement goals were measured by items taken from the *Pattern of Adaptive Learning Survey Scales* (PALS). The Achievement Goal items for this study were adapted from the revised scales of mastery goal and performance-approach goal. There were originally ten items measuring achievement goals: five for mastery goal and five for performance goal. The Mastery Goal scale referred to which students were willing to develop competence and extend mastery and

understanding in an academic setting. Examples of mastery goal items were “It’s important to me that I thoroughly understand my math work” and “It’s important to me that I learn a lot of new concepts in math this year”. The Performance-Approach Goal scale reflected students’ goals that focus on demonstrating their competence in an academic setting. Examples of performance goal items were “One of my goals is to show other students that I’m good at math” and “It is important for me to look smart in math compared to other students in my class”. For both subscales, students were required to rate their levels of agreement with each item on a 5-point Likert-scale (1 = *strongly disagree* to 5 = *strongly agree*). The internal reliability for the present study was .72 for mastery goals and .82 for performance goals, respectively.

3.3.5.2.3 Classroom goal structures

Classroom goal structures were measured by items adapted from the *Patterns of Adaptive Learning Survey Scales* (PALS). On the PALS, Classroom Mastery Goal Structure referred to students’ perceptions of a supportive motivational context in which the teacher emphasizes understanding new ideas, developing new skills, and learning from errors. The scale originally consisted of six items (e.g. “In my math class, trying hard is very important”). Classroom Performance Goal Structure refers to students’ perceptions of academic work in the classroom which encourage competition and comparison (e.g. “Getting high scores on tests is important in my math class”). For both scales, students were required to rate their levels of agreement with each item on a 5-point Likert-scale (1 = *strongly disagree* to 5 = *strongly agree*). The Cronbach’s α of the two

subscales in this study were .80 for mastery goal structure and .73 for performance goal structure.

3.3.5.2.4 Self-efficacy

Self-efficacy was also measured by items taken from the PALS. On the PALS, self-efficacy includes students' expectation of success when they completed a certain task. Hence, the scale reflected students' perceptions of their competence to do their math work. Examples of items were "I am confident that I can master my math skills this year" and "I can do even the hardest math work in this class if I try". The self-efficacy scale was composed of five items. For this scale, individuals responded on 5-point Likert type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree.* The Cronbach's α of the scale in this study was .76.

3.3.5.2.5 Achievement

In a recent literature review of 90 peer-reviewed journal articles, the vast majority of outcome variables examined in the non-experimental studies of achievement goals were students' course grades (Linnenbrink-Garcia et al., 2008). While the current study adopted grades as the measure of student achievement, the study focused on the grade level in mathematics at the first semester of the school year in which the study was conducted. This information was sourced from school records.

Students' academic achievement in mathematics was considered an accurate measure of achievement for Vietnamese high school students in this study for a number of reasons. First, mathematics is a core subject that is compulsory in national examinations of both Graduation Examination and University Entrance

Examination. Second, mathematics holds a prominent place in the high school curriculum (MOET, 2006), commanding four periods of focused lessons per week, while other subjects have three periods per week or less. More importantly, standardised tests of mathematics, and the marking system for these tests are constructed by experts in the Department of Education and Training, and are used with all students across different schools. As such, the semester examinations of mathematics are standardised across schools in the region. Additionally, in the study sample, students' mathematics grades were strongly correlated with general students' academic achievement at the end of the semester ($r = 0.87$, $p < .001$). Therefore, course grade in mathematics was considered to be appropriate as a measure of student achievement in this study.

The survey combined these measures in the order presented, with a total of twenty-nine items. A number of demographic variables were also included.

3.3.5.3 Procedure

The data collection was conducted over a month-long period at the two schools. In the first week, the researcher met students in their classes and briefly presented the purpose of the study. Consent forms were delivered to students who voluntarily participated in the survey. Students were told to take home the consent form for their parents to consent to their participation in the study. Teachers at the two schools agreed to collect the consent forms and helped to check parents' signatures. One week later, the survey was administered at the first high school. At the beginning of the survey, instructions were provided with the emphasis on the confidentiality of students' responses. After a 5-minute instruction, it took students approximately 10 minutes to complete the questionnaires in the

Vietnamese version. The survey was conducted at any convenient time for participants, either at the end of the class period or at the period of class meeting. The same process was followed in the second high school.

3.3.5.4 Analysis

The analysis of the data in the study included descriptive statistics, confirmatory factor analysis, correlation analysis, MANOVAs, ANOVAs, regression analysis, and path analysis. Statistical analysis procedures began with descriptive statistics to describe the sample. Factor analysis provides evidence of the validity of the research instrument. Correlation analysis was run to determine the relationships among the variables. Regression analysis was conducted to develop the structured path model for the path analysis. On the basis of these results, path analysis confirmed the correlation between the variables in our hypothesized model. The descriptive statistics, correlation analysis, factor analysis, and regression analysis were computed using SPSS 21 and path analysis was determined with AMOS software. These methods will each be further discussed in the following section.

3.3.5.4.1 Descriptive statistics

Descriptive statistics can be used for a number of purposes. Pallant (2010) suggests that descriptive statistics are used to describe the characteristics of samples, to check whether the variables violate any of the assumptions underlying the statistical techniques used in the study, and to address specific research questions. However, according to Tabachnick and Fidell (2013), descriptive statistics usually describe samples of the subjects “in terms of variables or combinations of variables” (p. 7). In this study, descriptive statistics provided the

information including the number of participants, the number and percentage of males and females, the means of ages, and the means, medians, and standard deviations for all the variables.

3.3.5.4.2 Factor analysis

Factor analysis is "a family of analytical techniques designed to identify factors, or dimensions, that underline the relations among a set of observed variables" (Pedhazur & Schmelkin, 1991, p. 66). Factor analysis is classified in two major types: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Exploratory factor analysis (EFA) is used to identify new underlying constructs, while confirmatory factor analysis (CFA) is employed when the constructs have been well tested and are based upon strong theory and a strong empirical base. The study was based upon a mature field of study of basic psychological needs and achievement goals, and therefore the constructs had been previously defined and well-established. According to Thompson (2004), factor analysis can be used for three purposes: (a) to inform evaluations of score validity, (b) to develop theory regarding the nature of constructs, and (c) to summarise relationships in the form of a more parsimonious set of factor scores that can be used in subsequent analyses.

In factor analyses, a factor loading is an important estimate of the validity of items used to assess a given construct because it is the correlation of the variable and the factor (Hair, Black, Babin, & Anderson, 2010). The higher the factor loading, the greater is the relationship of the variable to the factor, and the more valid the variable or the item is with regard to the factor. Hair et al. (2010) suggest that an item is significant if its factor loading is greater than 0.50. The *Principal*

component analysis (PCA) was used for extraction of factors and the *Varimax* was used for rotation of factors. PCA is a data analytic technique that yields "one or more composite variable that capture much of the information originally contained in a larger set of items" (DeVellis, 2012, p. 148). As such, PCA is expected to consider the total variance including variance that is unique to a variable as well as error variance. Varimax is a type of orthogonal rotation method. This method is widely used for factor rotation because it maximises the sum of the variances of required loadings of the factor matrix and gives a clear separation of the factors (Hair et al., 2010). In addition, PCA is typically considered an exploratory factor analysis (Fabrigar & Wegener, 2012). For these reasons, PCA and Varimax were used in this study.

Another estimate in factor analysis that needs to be considered is *eigenvalue*. An eigenvalue represents "the amount of information captured by a factor" (DeVellis, 2012, p. 128). While factor loadings indicate how strongly each item is related to a particular factor, eigenvalues show the relative importance of each factor. Kaiser (1960) recommended that factors with eigenvalues less than 1.0 should not be retained as such factors contain less information than the average item (see DeVellis, 2012). For the purposes of this study, it was decided to consider only factor loadings over 0.50 and eigenvalues over 1.0.

Two main issues in determining the suitability of the data for a factor analysis are sample size and the strength of relationships among the items.

Since the sample size is an important issue in factor analysis, there have been a number of recommendations concerning sample size requirements. Tabachnick and Fidell (2013) suggest that there should be at least 300 cases for

factor analysis, or there should be 150 cases with several high loading marker variables of above .80. Pallant (2010) recommends a ratio of at least five cases for each item to be factor analysed. Researchers explain that the reliability of the correlation coefficients among variables and the generalisability of factors tend to be affected by the sample size (Tabachnick & Fidell, 2013). Thus, researchers have reached an agreement that the larger sample provides better data (Pallant, 2010; Tabachnick & Fidell, 2013). In this study, there were 353 respondents and 29 observed variables. The ratio of cases to observed variables is 12:1. This ratio is adequate given that the reliability of the tests is high. Regarding the strength of the inter-correlations among the items, Tabachnick and Fidell (2013) recommend that there should be at least some correlations of r = .3 or greater in the correlation matrix.

Two statistical measures used to assess the factorability of the data are the Kaiser-Meyer-Olkin (KMO) (Kaiser, 1974) and Bartlett's test of Sphericity (Bartlett, 1954). According to Kaiser (1974), "an index of factorial simplicity can vary from a minimum of zero to a maximum of one" (p. 34). However, Kaiser (1974) believed that values between the extremes in the range from 0 to 1 were meaningful and needed to be considered. On the basis of this consideration, an index of factorial simplicity was developed: in the .90s, marvellous; in the .80s, meritorious; in the 70s, middling; in the 60s, mediocre; in the 50s, miserable; below .50, unacceptable. Thus, a minimum value for the KMO should be .6 or above for the factor analysis to be considered acceptable (Tabachnick & Fidell, 2013). Bartlett's test of sphericity should be significant at $p<.05$. The KMO value for the research data was .857, indicating an excellent sample size (n=353) for the factor analysis of these sample data. In the study, the number of factors extracted

is based on the Kaiser-Guttmann rule (Field, 2009). According to the guidelines in the Kaiser-Guttmann rule, the number of factors extracted should be equal to the number of factors that have an eigenvalue greater than 1.0. The Kaiser criterion is accurate when the number of variables is under 40, and communalities (the proportion of variance of an item) should be above 0.5 (Kaiser, 1974). In this study, there are 29 variables, and 28 of the items have communalities greater than 0.5.

3.3.5.4.3 Correlation analysis

Correlation analysis is used to measure and interpret the strength and direction of the linear relationships between two variables (Pallant, 2010). The two most commonly used correlation coefficients are the Pearson r and the Spearman r_s. The Pearson correlation coefficient is used to measure the linear relationships between two interval level (continuous) variables and the Spearman is used with ordinal level or ranked data. The values of correlation coefficients can be between -1 and +1. A correlation coefficient of -1 indicates a perfect negative association; a correlation coefficient of +1 indicates a perfect positive association; a correlation coefficient of 0 indicates that the two variables are uncorrelated. Because the data met the criteria for linear correlation, the Pearson correlation coefficient was used to determine the associations between the variables under the study.

3.3.5.4.4 MANOVA and ANOVA

Analysis of variance (ANOVA) is known as a univariate procedure while multivariate analysis of variance (MANOVA) is a multivariate procedure (Hair et al., 2010). ANOVA is used to assess group differences on a single metric

dependent variable. MANOVA is an extension of ANOVA, which is used to "measure differences for two or more metric dependent variables based on a set of categorical variables acting as independent variables" (p. 439). In this study, one-way multivariate analysis of variance (MANOVA) was conducted to determine the effects of group differences (e.g. gender, and class type) on the set of the measured variables (teacher-student relatedness, mastery goal structure, performance goal structure, self-efficacy, mastery goal, and performance goal), and then achievement (Grade Point Average-GPA) as dependent variables.

Wilk's Lambda, which is one of the most common tests used for examining overall significance between groups in a multivariate situation, needs to be reported (Hair et al., 2010). Tabachnick and Fidell (2013) suggest that the value of Wilk's Lambda is associated with the significance level, and thus there is a difference among groups if the significance level is less than 0.05. Furthermore, it is necessary to calculate the effect size of treatment on which the level of power for Wilk's Lambda is considered. Effect size is a standardized measure of group differences which can be calculated by eta squared (η^2) (Hair et al., 2010). Cohen (1988) classifies the eta squared values as followed: .01 as a small effect, .06 as a medium effect, and .14 as a large effect (see Pallant, 2010). In this study, Wilk's Lambda criterion ($p < 0.05$) was applied for the analysis, and the resulting eta squared values are provided later in Chapter 4.

3.3.5.4.5 Regression analysis

Regression analysis can be used to analyse the relationships between a single dependent variable and one or more independent variables (Hair et al., 2010). In other words, regression analysis is a useful technique for prediction. In comparison with correlation analysis, regression analysis "allows a more

sophisticated exploration of the interrelationships among a set of variables." (Pallant, 2010, p. 148). This statistical technique can be simple regression or multiple regression, depending on the number of independent variables. For multiple regression, there are three major types: simultaneous multiple regression, sequential multiple regression, and stepwise multiple regression (Keith, 2006). Simultaneous multiple regression is useful for exploring how much unique variance in the dependent variable is accounted for by each of the independent variables. In sequential multiple regression, since the independent variables are entered in the equation in order, this technique can be used to assess the contribution of each block of independent variables in predicting the dependent variable. Stepwise multiple regression is another version of sequential multiple regression, but it allows the program, not the researcher, to decide the selection of the independent variables and the order of these variables in the equation.

In this study, multiple regression analysis was employed to examine whether the independent variables predicted the dependent variables. It was hypothesised that teacher-student relatedness, classroom goal structures, and self-efficacy would predict achievement goals. Similarly, it was hypothesised that teacher-student relatedness, achievement goals, and self-efficacy would predict academic achievement. In these analyses, all the variables identified as independent were entered simultaneously. The researcher decided which variable was independent or dependent with the support of the literature.

Multiple regression requires several assumptions about the relationships between dependent and independent variables. The assumptions include absence of multicollinearity, normality, linearity, homoscedasticity, and independence of

residuals (Tabachnick & Fidell, 2013). Multicollinearity can be identified through the correlations between the variables in the model (r), and the values of tolerance and variance inflation factor (VIF). Multicollinearity is present when there are very high correlations between independent variables ($r \geq .9$), a tolerance value of less than .10, and a VIF value of above 10. An inspection of the Normal Probability Plot (P-P) of the regression standardised residual and the scatterplot provides tests of normality, linearity, homoscedasticity between predicted dependent variable scores and errors of prediction. The potential problem of residuals is identified through the maximum value for Cook's Distance, which is larger than 1 (Pallant, 2010).

3.3.5.4.6 Path analysis

Path analysis is an extension of the regression model. Path analysis is referred to as modelling systems of structural equations among observed variables (Kaplan, 2009). Path analysis focuses on "structural parameters that represent hypothesized relationships between a set of continuous observed variables modelled in terms of systems of equations" (Kaplan, 2009, p. 13). Path analysis, therefore, is appropriate for investigating the hypothesised relationships that are supported with theoretical and empirical evidence. In path analysis, *Maximum Likelihood* (ML) estimation method is used to determine the most significant relationships through the best-fitting parameter estimates. All the model parameters in ML are calculated simultaneously and repetitively and this allows researchers to improve the fit of the model to the data (Kline, 2005). Fit measures are discussed later in this section.

Path analysis is one form of *structural equation modelling* (SEM). In path analysis, a set of relationships is usually depicted in a path diagram in which all of the variables are represented by rectangles, and each path is represented by a straight line with a single-headed arrow. Independent variables are often referred to as exogenous variables and dependent variables are termed endogenous variables. It is noted that path analysis is referred as causal modelling, but it does not establish directionality of causality (Hair et al., 2010).

The path model for this study was created based on the results of relationships hypothesised among teacher-student relatedness, classroom goal structures, self-efficacy, achievement goals, and academic achievement. In this model, teacher-student relatedness, classroom goal structure, and self-efficacy were categorised as exogenous variables. Achievement goals and academic achievement were classed as endogenous variables. The intermediate variable, achievement goals, was examined as both an endogenous and exogenous variable.

Path analysis is based on a set of guidelines. A brief consideration of sample size and assumptions is discussed below and followed by the guidelines of fit indices.

3.3.5.4.6.1 Sample size

A consideration of sample size is needed for significance testing of model effects. According to Kline (2005), sample size for path analysis may be classed as small (N< 100), medium (N between 100 and 200), or large (N> 200). For a complicated path model, a sample size of 200 or much larger is recommended. Kline (2005) states that there should be 10 times as many cases as parameters (or ideally 20 times). If the cases/parameter ratio is less than 5:1, the statistical

precision of the results may be doubtful. This path analysis utilized the sample size of 353, a large sample for accessing significance.

3.3.5.4.6.2 Assumptions

The assumption of multivariate normality is required in most of the estimation techniques in SEM. To examine the normal distribution of data in SEM, researchers can screen the measured variables for outliers and examine the skewness and kurtosis of the measured variables (Tabachnick & Fidell, 2013). Field (2013) recommends using z-score to find outliers. In normal distribution, if a z score is greater than 1.96 (or 2 for convenience) then it is significant at $p < .05$, above 2.58 is significant at $p < .01$, and absolute values above 3.29 are significant at $p < .001$. Values of skewness and kurtosis should be close to zero for a normal distribution. However, Tabachnick and Fidell (2013) caution that with large samples, variables with statistically significant skewness often "do not deviate enough from normality to make a substantive difference in the analysis" (p. 80). Kurtosis may result in an underestimate of the variance, but this risk may be reduced with samples of 200 or more.

While tests of skewness and kurtosis are sensitive to large samples, Tabachnick and Fidell (2013) recommend choosing an estimate method, maximum likelihood (ML), to address the normality. With medium and large samples, the scaled ML test statistic is "a good choice with non-normality or suspected dependence among factors and error" (p. 720). Moreover, in AMOS, multivariate normality can be examined utilising Mardia's coefficient of multivariate kurtosis. If Mardia's coefficient for the data is lower than the value obtained from the formula $p(p+2)$ where p is the number of observed variables,

the data is assumed to be multivariate normal (Raykov & Marcoulides, 2012). In this study, the evaluation of assumptions is discussed in Chapter 4.

3.3.5.4.6.3 Fit indices

There are a number of fit indices that can help researchers evaluate levels of fit of hypothesised path models. The fit measures are classified and shown in order in AMOS from absolute fit measures, relative fit measures, Parsimony measures, fit measures based on the non-central Chi-square distribution, information theoretic fit measures, to fit measures based on sample size.

For this study, the use of fit measures were based on the recommendations of Bentler (2007) and Byrne (2010). Researchers agree that chi-square (χ^2) is the most fundamental absolute fit index that should be reported. In SEM, researchers expect to obtain a non-significant χ^2 value, indicating that the difference between the observed and predicted variance-covariance matrices is not significant. It has been suggested that the χ^2 statistics adjusted by its degree of freedom (χ^2/df) should be between 1 and 2. However, the χ^2 model-fit criterion has been found to be very sensitive to sample size. For this limitation, an additional absolute fit index is recommended to accompany the chi-square measure, the Goodness-of-fit index (GFI). The GFI values range from 0 (poor fit) to 1 (perfect fit). A value close to .95 indicates a good model fit.

Bentler (2007) has recommended that researchers use comparative fit index (CFI) and root mean square error of approximation (RMSEA) in the report for SEM. CFI provides values derived from the comparison of a hypothesized model with the null model, a model in which all variables are supposed not to be

correlated. RMSEA is used to measure “the degree of misfit per degree of freedom” (Keith, 2006, p. 270).

Controversy concerning the use of approximate fit indices (AFIs) arose when Barrett (2007) recommended banning such indices. He argued that indices of approximate fit do not possess the sensitivity of the chi-square exact fit test. The AFIs tests, therefore, cannot really evaluate the validity of a model in the event that the χ^2 test has failed. In response to Barret’s rationales and recommendations for using alternative model assessment strategies, there has been some agreement that researchers should report CFI and RSMEA (Bentler, 2007; Byrne, 2010; Hair et al., 2010). Bentler (2007) confirmed that CFI and RMSEA are two other indices of fit that should accompany a major SEM model. Byrne (2010) agreed that the RMSEA should be the index of choice as it is one of the most informative criteria in covariance structure modelling.

For testing a null hypothesis of poor fit, high values of the RMSEA are identified as indicators of poor fit. Browne and Cudeck (1992) suggested a rule of thumb in which values of the RMSEA between .05 and .08 indicate fair fit and values between .08 and .10 indicate mediocre fit. In addition, an inspection of confidence interval is necessary because the confidence intervals around the RMSEA also reflect fit models of the data (Kaplan, 2009). Unlike the RMSEA, high values for CFI are indicative of good fit. Value close to .95 has been recommended for the CFI (Hu & Bentler, 1999).

Based on the guidelines for fit measures, the fit statistics used for assessing the hypothesised model in this study were the χ^2 (and its degrees of freedom and *p*-value), Goodness-of-fit index (GFI), the comparative fit index (CFI), and the

root mean square error of approximation (RMSEA). A reasonable fit or good fit for the present model would require a chi-square test obtaining a non-significant χ^2 value (χ^2/df between 1 and 2), a RMSEA value less than or equal to .05, and GFI and CFI values approaching .95 or greater.

In addition to the assessment of the fit levels, the researcher employed bootstrapping techniques to detect direct and indirect effects in the model. Bootstrapping is a resampling method that involves taking repeated, random selection of cases from a study sample with a replacement after each sampling (Good, 1999). In bootstrap tests, the process of random sampling, estimation, and resampling is repeated hundreds or thousands of times, which has been found to increase the power and accuracy of the calculation of test statistics (Good, 2006). According to Shrout and Bolger (2002), bootstrapping is an efficient and powerful approach to examine indirect pathways. Bootstrapping techniques help increase power and accuracy in detecting mediational effects because they do not depend on normal theory assumption, but draw estimates from the data. Bootstrapping is especially helpful with small to moderate samples (N< 400) (Shrout & Bolger, 2002), and it is a relatively new approach which can be implemented using software packages such as AMOS (Byrne, 2010). Hence, for this study bootstrapping was used to test the significance of the indirect effects of independent variables (e.g. teacher-student relatedness) on dependent variables (e.g. academic achievement) through mediating variables (e.g. achievement goals).

Hair et al. (2010) indicate that in order to assess the validity of the measurement model, the researcher needs not only to establish acceptable levels of

goodness-of-fit for the model, but also to find evidence of construct validity. The following discussion will focus on construct validity of the model.

3.3.5.4.7 Construct validity

In SEM, construct validity refers to "the extent to which a set of measured items actually reflects the theoretical latent construct those items are designed to measure" (Hair et al., 2010, p. 708). Thus, the investigation of construct validity will provide evidence for the accuracy of the measurement. In this study, construct validity is made up of two components: convergent validity and discriminant validity. Convergent validity assesses the degree to which the items of a particular construct are correlated to each other, while discriminant validity assesses the degree to which the constructs differ from each other (Trochim & Donnelly, 2006).

As suggested by Hair et al. (2010), convergent validity can be assessed by the size of the factor loading and the reliability of each construct. In order to satisfy convergent validity, the factor loadings of all items should be greater than .50. Furthermore, the reliability of each construct can be estimated by the Cronbach's α or composite reliability (CR). Hair et al. (2010) recommend that a value of .70 or higher is good for either reliability estimate. With discriminant validity, CFA provides a test that compares the values of average variance extracted (AVE) for each construct with the correlation estimate between the two constructs. The AVE can be obtained as the mean variance extracted for the items loading on a construct. For discriminant validity to be confirmed, the square root of AVE for each construct should be larger than the inter-construct correlation (Barclay, Higgins, & Thompson, 1995).

In summary, the quantitative study employed a cross-sectional survey design to examine the relationships between teacher-student relatedness, classroom goal structures, achievement goals, self-efficacy, and academic achievement. The study was mainly based on students' reports to provide information of teacher involvement, goal instructions in classrooms, achievement goal endorsement, and perceptions of self-efficacy beliefs. Measures of the variables were adopted from the scales of TASC and PALS, which have been used across other collectivist cultures. An examination of reliability and validity of the measures showed a satisfactory result for further analysis. The procedure of data analysis was conducted using confirmatory factor analysis, correlation analysis, MANOVAs, ANOVAs, regression analysis, and path analysis.

3.3.6 Qualitative study– Phase 2

The purpose of the qualitative phase is to provide further insights into the quantitative results from the experiences of Vietnamese senior high school students. Following the quantitative data collection, a small group of students were selected for the qualitative study to participate in individual in-depth interviews. The individual interview is a valuable method to allow the interviewer to delve deeply into people's perceptions, understandings, and experiences of given issues (Ryan, Coughlan, & Cronin, 2009). Individual interviews are usually conducted face to face. In this way, the researcher may probe and explore hidden meanings and understandings via non-verbal cues including body language, facial expression, and eye contact. In addition, using in-depth interviews can help the interviewer co-construct reality with the interviewee because interviews are identified as a special kind of knowledge-producing conversation (Hesse-Biber & Leavy, 2006).

Holstein and Gubrium (2003) suggest that when interviewing older children or adolescents, the interviewers need to be sensitive to power imbalances between adults and youth. Within such a Vietnamese community, which requires high respect of the social hierarchy, children are taught to respect and obey adults during their lives. Thus, the high power distance between the researcher (interviewer) and students (interviewee) may influence the nature of students' responses to questions. In order to address these issues, the interviewer made an attempt to create a natural and friendly context for the interviewees. Prior to the interviews, the interviewer gave the participants a warm welcome and thanked them for being involved in the study. Some refreshments were provided to make them feel comfortable. The interview began with non-directed, open questions, designed to gradually guide participants towards the key points of the interview. The interview procedure was flexible to encourage students to share their experiences as well as their feelings. The detailed information gained from the in-depth interviews was used to supplement findings from the quantitative study. The qualitative questions were guided by the findings from the quantitative study in Phase 2. Further information regarding participant selection, procedure of interview, and data analysis in the qualitative study is provided in the following sections.

3.3.6.1 Participants

Sampling for the qualitative phase was based on the results from the quantitative component of the study, using intensity sampling. Intensity sampling is a purposive sampling technique that allows the researcher to select informative cases that strongly represent the phenomena of interest (Ritchie & Lewis, 2003). In this way, intensity sampling is somewhat similar to extreme or deviant case

sampling, but focuses less on extreme cases. Mertens (2005)advises that when using intensity sampling, the researcher should choose rich cases that are not necessarily extreme or unusual because the extreme case strategy "distorts the situation beyond applicability to typical cases" (p. 318). For the qualitative follow-up, the researcher may group respondents for the quantitative phase into different categories and select individuals representing each of the categories (Creswell, 2012).

For the qualitative portion of this study, individuals who participated in the quantitative study were selected by the researcher. The selection of the participants was based on the scores that were estimated by the items measuring teacher-student relatedness in the survey questionnaire. The scores were used to create groups representing the degree of relatedness between teachers and students. With scores ranging from 15 to 38, the respondents were divided into three groups: high (30-38), mid (23-29), and low range (15-22) scores. Four students were selected from each group to ensure that the sample was representative of the population. The researcher used the scores to determine individuals who were expected to participate in the interviews. Gender of the participants was another criterion for selection. Two males and two females in each group were selected for the interview. As a result, there were twelve participants in the interviews.

3.3.6.2 Procedure

Following the quantitative data collection phase, twelve 10th grade students, six males and six females were selected for individual interviews. The 'Teacher Involvement' measure in Phase 1 functioned as a report to select participants for the qualitative follow-up. This measure provided criteria for sampling of

interviewees who were expected to provide more information about teacher-student relatedness in Vietnamese classroom settings.

After the frequency data from Phase 1 was analysed, consent forms were delivered to all twelve students. Prior to the interviews, participants were required to return the singed consent forms. Interviews were conducted during the first three weeks of the second semester. This phase began with a formal interview of each student in a school office after school hours. Each interview lasted from 25 to 35 minutes, depending on the elaboration of participant responses. The researcher was given permission to audiotape the interviews and transcribe them for analysis. Participants were assured that all responses would be kept confidential.

3.3.6.3 Analysis

Cohen, Manion, and Morrison (2007) suggests that content analysis can be used with any form of communicative and written material, from documents to interview transcriptions, and media products to personal interviews. The systematic and rule-governed nature of content analysis can facilitate both quantitative and qualitative analysis of texts. Stages of content analysis consist of coding, categorising, comparing, and concluding, to identify themes and meanings in the data. The computer program *NVIVO* was used to assist the data analysis process.

The process of converting the interview recording into text data involves a number of steps. First, margins were created on each side of the text document so that the researcher had space for assigning a code word/ phrase or jotting down notes during data analysis. Then the information that was audio- recorded was transcribed. *Notation system* and *alternative abbreviated instructions* were used to ensure that all words were transcribed in order to maximize the transcription

quality(Holstein & Gubrium, 2003). The transcriptions were translated into English. A back translation procedure was used to ensure the quality of the texts as they were translated from Vietnamese (the language of the interview) to English. After the transcription of the interviews was completed, the researcher began the process of memoing by reading each transcription and subjecting the data to comparative analysis. As themes emerged, they were organized into categories and coded.

In summary, the qualitative study used in-depth interviews to explore students' experiences regarding the relationships examined in the quantitative study. The sampling criteria for the study was predominantly based on the scores of the teacher-student relatedness measure. The interviews were audio-taped, and transcribed with the permission of the interviewees. The procedure of data analysis followed stages of content analysis, and back translation was employed to ensure the quality of the interview transcriptions.

3.4 Ethical considerations

The ethics of research refers to the moral principles guiding the study (Gray, 2009). Ethical considerations are required in any research that involves data gathering or contact with human (or animal) populations. Ethical principles focus on four main areas: (1) avoiding harm to participants, (2) ensuring inform consent of participants, (3) respecting the privacy of participants, (4) and avoiding the use of deception (Gray, 2009). As the current study involved a human population, a number of ethical issues were taken into consideration. First, the researcher submitted an ethics application to Griffith University Human Research Committee, and obtained ethical clearance to conduct the research (GU Ref No: EDN/A2/13/HREC) (see Appendix E). Ethical approval was also sought from the

Department of Education and Training in Ba Ria – Vung Tau province in Vietnam prior to the start of the data collection phase of the study (see Appendix F).

Second, students were provided with an information package outlining the general aims of the study and the rights of the participants regarding privacy, anonymity, and confidentiality. Since participants were under 18 years of age, parental consent was sought prior to conducting the study at every phrase. Consenting students were advised that their participation in the research was voluntary and they were free to withdraw at any time, without penalty. The participants were also advised that their identity would be masked, and a coding system was utilised to ensure data did not contain any identifiable names.

3.5 Summary

This study used a mixed method design to investigate the relationship between teacher-student relatedness, classroom goal structures, achievement goals, self-efficacy, and academic achievement in Vietnamese high school students. The study was conducted in two sequential phases, incorporating a quantitative study, and a qualitative study. The quantitative data were collected to provide evidence to address the research questions, with the qualitative data providing further clarification and elaboration to address the quantitative findings.

The quantitative study employed a self-report survey methodology. The survey was administered with grade 10 students from two public senior high schools. There were 353 completed surveys that could be used for data analysis. Statistical techniques such as descriptive statistics, multiple regression, group comparison, and SEM were utilised in the process of data analysis. The reliability and validity of constructs were also considered with a sample of Vietnamese senior high school students.

The qualitative study was conducted with 12 students, using in-depth interviews. The intensity sampling technique was used to select the participants. Each interview took from 25 to 35 minutes, depending on the elaboration of participant responses. The interviews were audio-taped for transcription and analysis. The stages of content analysis were employed for identifying themes and meanings in the data.

Chapter 4 Results

4.1 Overview

This chapter provides results to answer the four research questions guiding the study. The first section outlines the results of the quantitative study, where process of data analysis started with preliminary analyses including descriptive statistics, correlations, and factor analyses. This was followed by further analysis of the data to identify group differences, using MANOVAs and ANOVAs. Path analysis was then performed, following the presentation of multiple regression analysis. The chapter ends with the results from the qualitative analysis, which were used to support the quantitative results.

4.2 Quantitative results

4.2.1 Preliminary analyses

In the preliminary analysis phase, a descriptive analysis was performed first to assess normality, and the reliability of the scales. This was followed by a correlation analysis that provided a correlation matrix for each variable in the model. Finally, factor analyses were run to identify factors appropriate for the path analysis. For the description of participants, the reader is referred to Chapter 3 for demographic summaries of data on age, socio-economic status, school district, gender, class type, and parents' occupation.

4.2.1.1 Descriptive statistics

The analysis began with frequency distributions of responses to each of the 29 items. Responses to questions related to teacher-student relatedness, mastery

goals, performance goals, mastery goal structure, performance goal structure, and self-efficacy were analysed. A check on accuracy of data entry, missing data, skewness, and kurtosis was done through IBM SPSS version 21. The results indicate there were no missing cases, and skewness and kurtosis were well within expected values. The means and standard deviations for the variables are presented in Table 4.1.

Table 4.1

Descriptive statistics for the variables

Variable	N	Minimum	Maximum	Mean	SD	Skewness statistic	Kurtosis statistic
Teacher-student relatedness (8	353	1.25	4.75	3.41	.61	-.59	.29
Mastery goal (5 items)	353	1.20	5.00	3.65	.70	-1.01	.82
Performance goal (3 items)	353	1.00	5.00	2.22	.86	.71	.35
Mastery goal structure (5	353	2.00	5.00	3.89	.72	-.85	.11
Performance goal structure (3	353	1.00	5.00	2.98	.89	.02	-.51
Self-efficacy (5 items)	353	1.20	5.00	3.24	.63	-.06	.32

4.2.1.2 Correlation analysis

Preliminary analysis in this phase involved investigating the relationships amongst major variables including teacher-student relatedness, mastery goals, performance goals, mastery goal structure, performance goal structure, self-efficacy, and academic achievement for the 29 items. Pearson correlations were conducted for the preliminary analysis. Table 4.2 shows the Pearson correlation matrix for the major variables.

Table 4.2

Pearson correlation matrix for the major variables

Variable	1	2	3	4	5	6	7
1.Teacher-student relatedness	1.00						
2. Mastery goal	.21**	1.00					
3. Performance goal	.09	-.22**	1.00				
4. Mastery goal structure	.07	.70**	-.25**	1.00			
5. Performance goal structure	.00	.45**	.01	.51**	1.00		
6. Self-efficacy	.34**	.39**	.20**	.36**	.15**	1.00	
7. Academic achievement	.37**	.20**	-.01	.05	.00	.19**	-

Note. ** $p < .01$

Table 4.2 shows the relationships among the major variables. Of particular interest is how teacher-student relatedness and achievement goals were related to the other variables. Teacher-student relatedness was most strongly correlated with achievement (r=.37, p<.01) and self-efficacy (r=.34, p<.01), and these two latter variables were also moderately correlated (r=.19, p<.01). Teacher-student relatedness was also correlated with mastery goals (r=.21, p<.01). Furthermore, mastery goals were significantly related to achievement(r=.20, p<.01), but negatively to performance goal (r=-.22, p<.01). Mastery goals were also strongly correlated with both mastery goal structure (r=.70, p<.01), and performance goal structure (r=.45, p<.01), but also to self-efficacy (r=.39, p<.01). Performance goals were moderately and negatively related to mastery goal structure (r=.-.25, p<.01), whereas this variable was positively related to self-efficacy (r=.20, p<.01). Finally, self-efficacy and academic achievement were moderately correlated (r=.19, p<.01).

A Pearson correlation analysis of the major variables and the demographic variables of age, student gender, math teacher’s gender, homeroom teacher’s gender, class type, father’s job, mother’s job, and school district were reported in Table 4.3.

Table 4.3

Pearson correlation matrix of the major variables and demographic variables

Variable	Age	Student gender	Math teacher's gender	Homeroom teacher's gender	Class type	Father's job	Mother's job	School district
Teacher-student relatedness	-.02	-.07	.05	.16**	-.21**	-.05	-.12*	.17**
Mastery goal	-.03	.11*	.46**	.08	-.36**	.08	-.24**	-.03
Performance goal	.07	-.14**	-.26**	-.19**	.24**	-.08	.04	.08
Mastery goal structure	-.02	.13*	.47**	.12*	-.31**	.07	-.26**	.03
Performance goal structure	-.03	.05	.25**	.01	-.16**	.10	-.19**	.04
Self-efficacy	-.07	-.08	.21**	.04	-.18**	.01	-.06	.06
Academic achievement	-.20**	.07	-.02	.28**	-.59**	.03	.00	-.05

Note. ** $p < .01$; * $p < .05$

4.2.1.3 Factor analysis

The 21 items of *Pattern of Adaptive Learning Survey Scales* (PALS) and the 8 items of *Teacher As Social Context* (TASC) were subjected to the principal component analysis (PCA) using SPSS version 21. Inspection of the correlation matrix found many coefficients of .3 and above. Separate KMO tests were conducted for the research data with all of the items combined and for each of the variables. The KMO value for the research data was .857. For each of the variables, the KMO value for teacher-student relatedness was .85; for mastery goals, .69; for performance goals, .71; for mastery goal structure, .83; for performance goal structure, .65; and for self-efficacy, .75. All the KMO values exceeded the recommended value of .60 (Kaiser, 1974) and Bartlett's Test of Sphericity (Bartlett, 1954) was statistically significant ($p < 0.001$), supporting the adequacy needs for the factor analysis of these sample data.

When the assumptions for factor analysis were supported, a series of factor analyses were completed for the variables that were expected to form conceptually meaningful constructs in the hypothesised model. Firstly, the eight items for teacher-student relatedness were factor analysed, using principal component

analysis with eigenvalues greater than 1. The proportion of variance of the variables accounted for by the factor is shown in Table 4.4.

Table 4.4

Total variance explained for teacher-student relatedness

Component	Initial eigenvalues		
	Total	% of Variance	Cumulative %
1	3.449	43.109	43.109
2	.989	12.367	55.477
3	.895	11.193	66.669
4	.638	7.981	74.650
5	.600	7.496	82.146
6	.547	6.836	88.982
7	.470	5.875	94.857
8	.411	5.143	100.000

Extraction Method: Principal Component Analysis

Principal component analysis for teacher-student relatedness revealed the presence of one component with an eigenvalue exceeding 1, explaining 43.1 % of the variance. The factor loadings of the eight items, as shown in Table 4.5, are above .50.

Table 4.5

Component matrix for teacher-student relatedness

	Component
	1
Q13. I feel that my math teacher likes/values me	.643
Q14. I feel that my math teacher does not understand me	.713
Q15. My math teacher spends time with me when I need help	.609
Q16. I don’t feel comfortable asking my math teacher about important things	.595
Q17. My math teacher talks with me when I need help	.575
Q18. My math teacher really cares about me	.730
Q19. I feel like my math teacher knows me very well	.718
Q20. I cannot count on my math teacher when I need him/her	.651

Extraction Method: Principal Component Analysis.
a. 1 component extracted.

Second, the five items for mastery goal scale were factor analysed, using principal component analysis with eigenvalues greater than 1. Inspection of the component matrix revealed that the item labelled Q22 had a factor loading of less than .3. According to the assumptions for factor analysis, a decision was made to remove this item from the mastery goal scale. Hence, four items, labelled Q21, Q23, Q24, and Q25, were used for further analysis. The proportion of variance of the variables accounted for by the factor is shown in Table 4.6. The factor loadings are presented in Table 4.7.

Table 4.6

Total variance explained for mastery goals

Component	Initial eigenvalues		
	Total	% of Variance	Cumulative %
1	2.177	54.421	54.421
2	.806	20.158	74.579
3	.533	13.315	87.894
4	.484	12.106	100.000

Extraction Method: Principal Component Analysis.

Table 4.7

Component matrix for mastery goals

	Component
	1
Q21. It is important for me to improve my math knowledge this year	.752
Q23. It's important to me that I thoroughly understand my math work	.750
Q24. It's important to me that I learn a lot of new concepts in math this year	.629
Q25. One of my goals is to master new skills in math this year	.809

Extraction Method: Principal Component Analysis.
a. 1 component extracted.

As shown in Table 4.6, principal component analysis revealed the presence of one component with an eigenvalue greater than 1, explaining 54.4% of the

variance. The factor loadings of the four items, as shown in Table 4.7 are above .60.

The three items for performance goal orientation were factor analysed, using principal component analysis with eigenvalues greater than 1. The proportion of variance of the variables accounted for by the factor is shown in Table 4.8. The factor loadings are presented in Table 4.9.

Table 4.8

Total variance explained for performance goals

Component	Initial eigenvalues		
	Total	% of Variance	Cumulative %
1	2.171	72.360	72.360
2	.451	15.041	87.401
3	.378	12.599	100.000

Extraction Method: Principal Component Analysis.

Table 4.9

Component matrix for performance goals

	Component
	1
Q26. One of my goals is to show other students that I am good at math	.858
Q27. It is important for me to look smart in math compared to other students in my class	.861
Q28. One of my goals is to show others that math is easy to me	.832

Extraction Method: Principal Component Analysis.
a. 1 component extracted.

As shown in Table 4.8, principal component analysis revealed the presence of one component with an eigenvalue greater than 1, explaining 72.3% of the variance. The factor loadings of the three items, as shown in Table 4.9, are above .80.

The five items of mastery goal structure were analysed using principal component analysis with eigenvalues greater than 1. The proportion of variance of the variables accounted for by the factor is shown in Table 4.10. The factor loadings are presented in Table 4.11.

Table 4.10

Total variance explained for mastery goal structure

Component	Initial eigenvalues		
	Total	% of Variance	Cumulative %
1	2.775	55.500	55.500
2	.720	14.401	69.901
3	.590	11.793	81.694
4	.472	9.446	91.140
5	.443	8.860	100.000

Extraction Method: Principal Component Analysis.

Table 4.11

Component matrix for mastery goal structure

	Component
	1
Q29. In my math class, trying hard is very important	.779
Q30. The main goal of my math class is understanding the math content	.792
Q31. It is important to learn new ideas and concepts in my math class	.794
Q32. In my math class, how much I improve is really important	.721
Q33. In my math class, it's ok to make mistakes as long as I am always trying	.625

Extraction Method: Principal Component Analysis.
a. 1 component extracted.

As shown in Table 4.10, principal component analysis revealed the presence of one component with an eigenvalue greater than 1, explaining 55.5% of the variance. The factor loadings of the five items, as shown in Table 4.11, are above .60.

The three items for performance goal structure were factor analysed, using principal component analysis with eigenvalues greater than 1. The proportion of variance of the variables accounted for by the factor is shown in Table 4.12. The factor loadings are presented in Table 4.13.

Table 4.12

Total variance explained for performance goal structure

Component	Initial eigenvalues		
	Total	% of Variance	Cumulative %
1	1.947	64.903	64.903
2	.641	21.351	86.254
3	.412	13.746	100.000

Extraction Method: Principal Component Analysis.

Table 4.13

Component matrix for performance goal structure

	Component
	1
Q34. Getting good grades is the main goal in my math class	.781
Q35. Getting the correct answers is important in my math class	.769
Q36. Getting high scores on tests is important in my math class	.863

Extraction Method: Principal Component Analysis.
a. 1 component extracted.

As shown in Table 4.12, principal component analysis revealed the presence of one component with an eigenvalue greater than 1, explaining 64.9% of the variance. The factor loadings of the three items, as shown in Table 4.13, are above .70.

The five items for self-efficacy were factor analysed, using principal component analysis with eigenvalues greater than 1. The proportion of variance of the variables accounted for by the factor is shown in Table 4.14. The factor loadings are presented in Table 4.15.

Table 4.14

Total variance explained for self-efficacy

Component	Initial eigenvalues		
	Total	% of Variance	Cumulative %
1	2.540	50.800	50.800
2	.920	18.403	69.203
3	.610	12.208	81.410
4	.482	9.647	91.057
5	.447	8.943	100.000

Extraction Method: Principal Component Analysis.

Table 4.15

Component matrix for self-efficacy

	Component
	1
Q37. I am confident I can master my math skills this year	.644
Q38. I am confident I can figure out how to do the most difficult math work	.709
Q39. I am confident I will be able to complete all of the math work in class as long as I don't give up	.718
Q40. I am confident I can learn difficult math work	.756
Q41. I can do even the hardest math work in this class if I try	.731

Extraction Method: Principal Component Analysis.
a. 1 component extracted.

As shown in Table 4.14, principal component analysis revealed the presence of one component with an eigenvalue greater than 1, explaining 50.8% of the variance. The factor loadings of the five items, as shown in Table 4.15, are above .60.

In sum, the results indicate that 28 items loaded above 0.50, and the eigenvalue for each factor was greater than 1 as recommended by (Kaiser, 1960). Principal component analyses conducted on the measures in this study suggested unidimensionality in each construct, provides some evidence for the validity of the scores from the measures. Therefore, the 28 items were retained for further

analysis. In the next section, evidence of construct validity is presented for the model in this study.

4.2.1.4 Construct validity

The results of statistical analysis (Table 4.16) show that the factor loadings of the items ranged from 0.575 to 0.863 and all of the coefficient alphas were above the suggested value of 0.70. These results indicate that the items in each construct are highly correlated and reliable. Hence, the measurement model satisfies two necessary criteria and confirms convergent validity.

Table 4.16

A summary of item loading and construct reliability

Variable	Factor loading (> 0.50)	Coefficient alpha (> 0.70)
Teacher-student relatedness	From 0.575 to 0.730	0.80
Mastery goal	From 0.629 to 0.809	0.71
Performance goal	From 0.832 to 0.861	0.81
Mastery goal structure	From 0.625 to 0.794	0.79
Performance goal structure	From 0.769 to 0.863	0.73
Self-efficacy	From 0.644 to 0.756	0.76

Discriminant validity was assessed by applying an analytical procedure that compared the square root of the AVE and the estimate of inter-construct correlation. The data analysis results in Table 4.17 support the discriminant validity because for each construct, the square root of the AVE is larger than the inter-construct correlation. Therefore, the analysis confirmed that the individual constructs were discriminated from each other by the instrument.

Table 4.17

Inter-construct correlation and square root of average variance extracted (AVE)

Variable	1	2	3	4	5	6	7
1.Teacher-student relatedness	**0.66**						
2. Mastery goal	.21**	**0.74**					
3. Performance goal	.09	-.22**	**0.85**				
4. Mastery goal structure	.07	.70**	-.25**	**0.76**			
5. Performance goal structure	.00	.45**	.01	.51**	**0.80**		
6. Self-efficacy	.34**	.39**	.20**	.36**	.15**	**0.71**	

** $p < .01$

Note. The square roots of average variance extracted are the bold elements

The results of the two analytical procedures provided evidence for construct validity as the criteria for the convergent validity and discriminant validity were met. Therefore, all of the factors can be used for further analysis. These factors were used to examine group differences and structural relationships between variables to aid in addressing the research questions.

4.2.2 Group differences

MANOVAs and ANOVAs were performed to explore differences in the mean scores. The results of the multivariate and univariate tests were used to answer the following research question:

Are there significant differences in teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement across demographic factors?

Results of the analyses of variance with a set of the dependent variables (teacher-student relatedness, mastery goals, performance goals, mastery goal structure, performance goal structure, and self-efficacy,) indicated that significant differences were found for student gender, mathematics teacher's gender, and class type.

Table 4.18 shows the effects of student gender on the measured variables. There was a statistically significant effect for student gender, F (6, 346) = 2.71, p <.05; Wilks' Lambda = .96; however, the effect size was small (η^2 =.05). When the results for the dependent variables were considered separately, student gender showed a significant effect on three variables: mastery goals F (1, 351) = 4.19, p = .041, η^2 =.01; performance goals F (1, 351) = 7.31, p = .007, η^2 =.02; and mastery goal structure F (1, 351) = 5.74, p = .017, η^2 = .02. However, the effect sizes were quite small (Cohen, 1988), suggesting little practical differences between males and females.

As shown in Table 4.18, there was a statistically significant difference between males and females in combined dependent variables for math teachers' gender, F (6, 346) = 22.29, p <.001; Wilks' Lambda = .72, η^2 =.28. When the results for the dependent variables were considered separately, math teachers' gender showed a significant effect on all dependent variables except the variable of teacher-student relatedness: mastery goals, F (1, 351) = 94.02, p = .000, η^2 =.21; performance goals, F (1, 351) = 25.68, p = .000, η^2 =.07; mastery goal structure, F (1, 351) = 101.82, p = .000, η^2 =.23; performance goal structure, F (1, 351) = 24.06, p = .000, η^2 =.06; and self-efficacy, F (1, 351) = 15.79, p = .000, η^2 =.04. An inspection of the mean scores indicated that male math teachers had a slightly higher effect on students' performance goals (M = 7.61, SD = 2.6) than female math teachers (M = 6.18, SD = 2.4). However, the effect of female mathematics teachers was found to be higher than male math teachers on the other measures including mastery goals, mastery goal structure, performance goal structure, and self-efficacy.

Table 4.18

A summary of MANOVAs and follow-up univariate ANOVAs for the measured variables

Group difference factor	Dependent variable	Mul-F value	Uni-F value	η²
Student gender		2.71*		.05
	Teacher-student relatedness		1.47	
	Mastery goal		4.19*	.01
	Performance goal		7.31*	.02
	Mastery goal structure		5.74*	.02
	Performance goal structure		0.81	
	Self-efficacy		2.46	
Mathematics teacher's gender		22.29***		.28
	Teacher-student relatedness		.71	
	Mastery goal		94.02***	.21
	Performance goal		25.68***	.07
	Mastery goal structure		101.82***	.23
	Performance goal structure		24.06***	.06
	Self-efficacy		15.79**	.04
Class type		13.76***		.19
	Teacher-student relatedness		16.60***	.05
	Mastery goal		51.56***	.13
	Performance goal		21.75***	.06
	Mastery goal structure		37.78***	.09
	Performance goal structure		9.25**	.03
	Self-efficacy		11.68**	.03

Note. *$p < .05$, **$p < .01$, ***$p < .001$

As shown in Table 4.18, there was a statistically significant difference between advanced and general classes in combined dependent variables, F (6, 346) = 13.76, p <.001; Wilks' Lambda = .80, η² =.19. The differences on each dependent variable reached statistical significance: teacher-student relatedness, F (1, 351) = 16.60, p = .000, η² =.05; mastery goals, F (1, 351) = 51.56, p = .000, η² =.13; performance goals, F (1, 351) = 21.75, p = .000, η² =.06; mastery goal structure, F (1, 351) = 37.78, p = .000, η² =.09; performance goal structure F (1, 351) = 9.25, p = .003, η² =.03; and self-efficacy, F (1, 351) = 11.68, p = .001, η² =.03;. The analysis revealed that students in general classes (M = 7.38, SD = 2.7) scored slightly higher than their counterparts in advanced classes (M = 6.11, SD =

2.3) only on the factor of performance goals. Their mean scores on mastery goals, classroom goal structure, and self-efficacy were lower than the scores of students in advanced classes. The results suggest that students in general classes tended to pursue performance goals more than their counterparts in advanced classes did.

4.2.3 Regression analyses

Several multiple regressions were performed to determine how well independent variables contributed to predicting criterion variables. First, achievement goal orientation was used as a criterion variable in the analyses with teacher-student relatedness, classroom goal structure, and self-efficacy as independent variables. Then, achievement goals, teacher-student relatedness, and self-efficacy were the predictor variables in the analyses in which academic achievement was examined as a criterion variable. The results of the first regression analysis were used to answer the following research question:

> *Does teacher-student relatedness, classroom goal structure, and self-efficacy predict achievement goals in Vietnamese senior high school students?*

Two simultaneous multiple regressions were conducted to evaluate how well teacher-student relatedness, classroom goal structures, and self-efficacy predicted achievement goal orientation in Vietnamese senior high school students. Both regression analyses included four measured variables (teacher-student relatedness, mastery goal structure, performance goal structure, and self-efficacy) as the predictors. These predictor variables were entered in the regression equation simultaneously. The subscales of achievement goals (mastery goal and performance goal) were the criterion variables for each model of the analysis.

Several assumptions for the multiple regression were evaluated. Several variables exhibited high correlations (see Table 4.19), with mastery goals and mastery goal structure presenting the highest correlation (r = .70, p < .001). However, no VIF was larger than 1.518 (much less than the cut-off of 10), and no tolerance value was less than .659 (more than the cut-off of 0.10). These findings suggest no violation of the multicollinearity assumption. For each regression, the histograms and normal P-P plots of regression standardised residuals indicate normality, linearity, and homoscedasticity of the independent-dependent variable relationships. These results indicate no violation of the assumptions of multiple regression.

Table 4.19

A summary of simultaneous multiple regression for mastery goals

Variable	*B*	95% CI	*SE*	*β*	*t*	*Sig.*
Teacher-student relatedness	.09	[.04, .15]	.03	.13	3.40	.000
Mastery goal structure	.57	[.49, .66]	.04	.59	13.17	.000
Performance goal structure	.18	[.07, .28]	.06	.13	3.14	.002
Self-efficacy	.13	[.04, .22]	.05	.12	2.83	.005

Note. R = .74; R^2 = .55; F(4,348) = 104.18, p < .001

As shown in Table 4.19, the results of the analysis for mastery goals indicated that the linear combination of teacher-student relatedness, mastery goal structure, performance goal structures, and self-efficacy significantly predicted mastery goals. The prediction model explains 55% of the total variance, F (4,348) = 104.18, p < .001. All of the four variables in the prediction model were significant predictors of mastery goals. As expected, mastery goal structure made the largest contribution (β = .59 p < .001) and the independent variable of teacher-student relatedness made the second greatest contribution (β = .13, p < .001). Performance goal structure was the third contributor (β = .13 p < .01). The

contribution of self-efficacy (β = .12, p < .01) was the smallest. It is noteworthy that those who perceived more mastery goal structures in the classroom, and were more connected to their teacher tended to have higher levels of mastery goals.

Table 4.20

A summary of simultaneous multiple regressions for performance goals

Variable	*B*	95% CI	*SE*	*β*	*t*	*Sig.*
Teacher-student relatedness	.00	[-.05, .06]	.03	.01	.15	.882
Mastery goal structure	-.33	[-.42, -.25]	.04	-.47	-7.86	.000
Performance goal structure	.19	[.08, .29]	.06	.19	3.46	.001
Self-efficacy	.28	[.19, .37]	.05	.34	6.21	.000

Note. R = .43; R^2 = .19; F(4,348) = 20.02, p < .001

As shown in Table 4.20, the results of the analysis for performance goals indicate that the linear combination of teacher-student relatedness, mastery goal structure, performance goal structures, and self-efficacy significantly predicted performance goals. The model explains 19 % of the total variance, *F* (4,348) = 20.02, p < .001. In the prediction model, only the variable of teacher-student relatedness was not a significant predictor of performance goals (β = .01, p = .88). Perhaps surprisingly, mastery goal structure made the greatest unique contribution (β = -.47, p < .001). This is followed by the significant predictor of self-efficacy (β = .34, p < .001), and finally by performance goal structure (β = .19, p < .001). Note that the coefficient for mastery goal structure was negative. Hence, the more mastery goal structures students perceived in the classroom, the lower levels of performance goals they tended to have. Based on these results, mastery goal structure appears to offer a strong predictive power to performance goals far beyond that contributed by performance goal structure.

Another simultaneous multiple regression was conducted to evaluate how well teacher-student relatedness, achievement goals, and self-efficacy predicted

academic achievement in Vietnamese senior high school students. The results of the second regression analysis were used to answer the following research question:

Does teacher-student relatedness, achievement goals, and self-efficacy predict academic achievement in Vietnamese senior high school students?

Four measures - teacher-student relatedness, mastery goals, performance goals, and self-efficacy - were simultaneously entered into the regression equation as predictors and academic achievement was the criterion variable. Several assumptions for the multiple regression were evaluated. The results showed that the highest tolerance value for the independent variables was .877, which is not less than .10; therefore, the multicollinearity assumption was not violated. This was also supported by the VIF values, which were well below the cut-off of 10. Furthermore, an inspection of the histograms and normal P-P plots of regression standardised residuals was done to check the assumption of normality, linearity, and homoscedasticity of the independent-dependent variable relationships. The values from the inspection revealed no violation of the assumptions of multicollinearity, normality, linearity, and homoscedasticity.

Table 4.21

A summary of multiple regression analysis for academic achievement

Variable	B	95% CI	SE	β	t	p
Teacher-student relatedness	.09	[.07, .13]	.02	.33	6.28	.000
Mastery goal	.04	[-.01, .09]	.02	.10	1.77	.010
Performance goal	-.02	[-.08, .04]	.03	-.03	-.57	.569
Self-efficacy	.02	[-.03, .08]	.03	.05	.82	.413

Note. R = .39; R^2 = .15; F(4,348) = 15.42, p < .001

Table 4.21 presents the results of the simultaneous multiple regression for academic achievement. The linear combination of teacher-student relatedness,

mastery goal, performance goal, and self-efficacy significantly predicted academic achievement, $F(4,348) = 15.42$, $p < .001$. The multiple correlation coefficient was .39, indicating that approximately 15 % of the variance of academic achievement in the sample can be explained by the linear combination of the four variables. In this model, only two measures - the teacher-student relatedness and mastery goal – were statistically significant, with the teacher-student relatedness scale recording a higher beta value ($\beta = .33$, $p < .001$) than the mastery goal scale ($\beta = .10$, $p < .01$). They were followed by performance goals and self-efficacy with $\beta = -.03$ and $\beta = .05$ respectively, which are not statistically significant ($p > .05$).

Table 4.22

A summary of bivariate and partial correlations of the predictors with academic achievement

Variable	*Bivariate correlation*	*Partial correlation*
Teacher-student relatedness	.37**	.31**
Mastery goal	.20*	.10*
Performance goal	-.01	-.03
Self-efficacy	.19	.04

Note. * $p < .01$, ** $p < .001$

The results presented in Table 4.22 indicate the relative strength of the individual predictors. The bivariate correlations between teacher-student relatedness, mastery goals and academic achievement were positive and statistically significant. Of these four independent variables, the measure for teacher-student relatedness ($r = .37$, $p < .001$) was most strongly related to academic achievement. The measure for teacher-student relatedness also appears to offer stronger partial correlation to academic achievement ($r = .31$, $p < .001$) than that contributed by the measure for mastery goals ($r = .10$, $p < .01$). On the

basis of these correlation analyses, the most useful predictor is the measure for teacher-student relatedness.

4.2.4 Path analysis

A path analysis was performed in accordance with the relations outlined in Chapter 2. The results of the path analysis were used to answer the following research question.

What is the relationship between teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement of Vietnamese senior high school students?

In this analysis, the initial model in Figure 4.1 was tested, using the structural equation modelling (SEM) procedure with AMOS 21. The final model from the AMOS analysis, model fit data, and mediation tests were used to interpret the results. Mediation analysis with the bootstrapping method was performed to confirm both direct and indirect (mediated) effects.

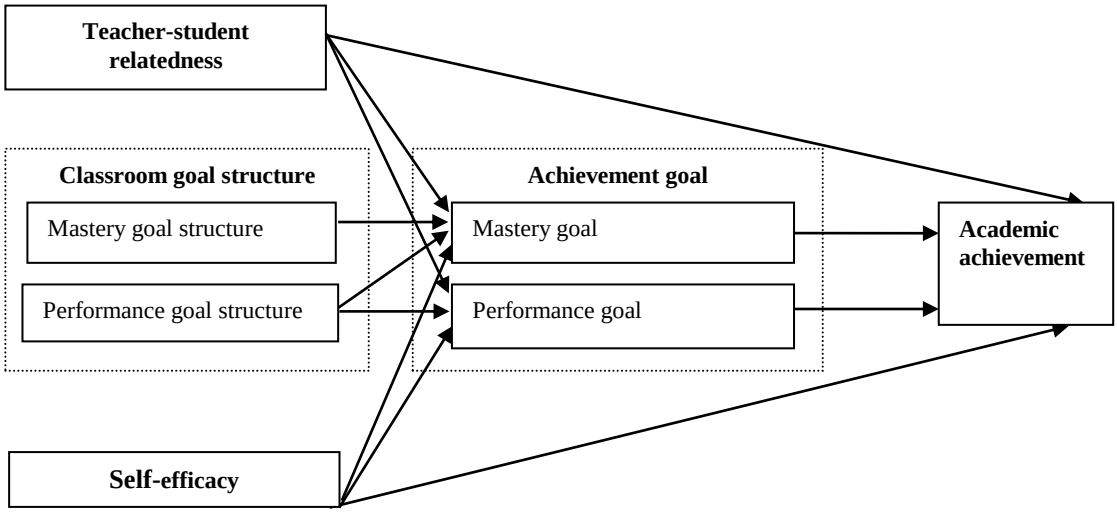

Figure 4.1 Hypothesised model

The evaluation of assumptions for SEM was the first step in the analysis. The assumptions of multivariate normality were evaluated through IBM SPSS

version 21. The results of testing for multivariate normality are presented in Table 4.23.

Table 4.23

Assessment of normality for variables

Variable	Min	Max	Skew	Critical Ratio	Kurtosis	Critical Ratio
Teacher-student relatedness	10.00	38.00	-.59	-4.57	.28	1.06
Mastery goal	6.00	25.00	-1.02	-7.78	.80	3.07
Performance goal	3.00	15.00	.71	5.43	.33	1.27
Mastery goal structure	10.00	25.00	-.86	-6.56	.09	.37
Performance goal structure	3.00	15.00	.02	.16	-.53	-2.01
Self-efficacy	6.00	25.00	-.07	-.53	.29	1.15
Academic achievement	1.80	9.80	-.72	-5.51	.52	2.01
Multivariate					5.02	4.35

As shown in Table 4.23, indices of skewness and kurtosis are provided with critical ratios. The critical ratio here was obtained by dividing the sample index by its standard error, so it operated as a z-statistic in testing the multivariate normality. Using the benchmark ± 1, five of the variables were skewed and one of the variables had kurtosis difficulty. However, it should be noted that Mardia's coefficient of multivariate kurtosis obtained was 5.02, which is much smaller than the value of $p(p+2)$ = 7(9) = 63, where p is the number of observed variables in the model. The multivariate normality index suggests that the set of measured variables are multivariate normal.

Maximum Likelihood estimation was employed to estimate all models. The fit indices for the initial model were χ^2 (4, N=353) = 6.69, p = .15, GFI = .99, CFI = .99, RMSEA = .04. It can be seen that the value of p was not significant, and the other fit indices obtained were greater than .95. These results suggest the fit of the data to the hypothesized model was entirely adequate.

Results from the parameter estimates showed some insignificant paths, and they were therefore removed. These paths were from teacher-student relatedness to performance goals, from self-efficacy to academic achievement, and from performance goals to academic achievement. The model then was estimated again. The path model presented in Figure 4.2 was accepted as the final model with standardized coefficients shown for significant effects.

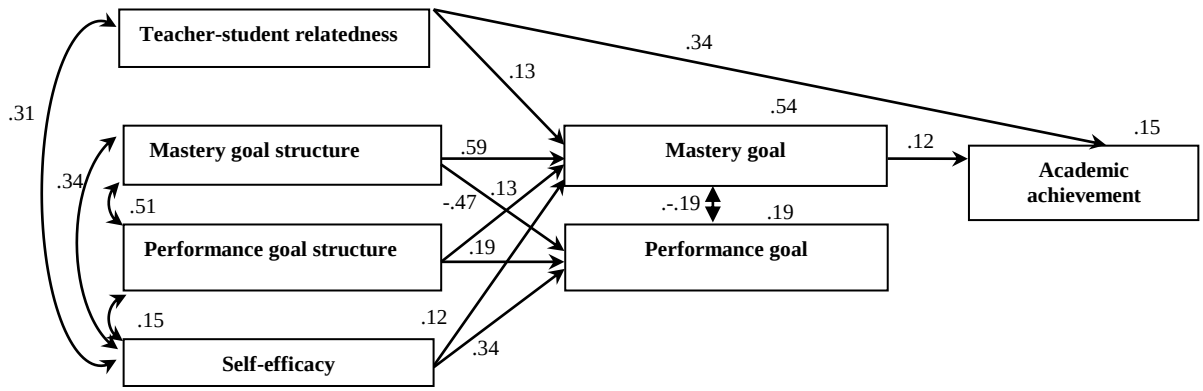

Figure 4.2. Path model shown with significantly standardised coefficients and correlations among the variables.

As predicted by the model, the relationships of teacher-student relatedness with mastery goals, academic achievement, were positively significant (β= 0.13; β= 0.34, respectively). The relationship between performance goals and mastery goals was significant with a standardised regression coefficient of -0.19. The relationship was negative. The relationship between mastery goal structure and performance goals was significant with a standardised regression coefficient of -.47. The relationship was negative. The other relationships in the model were positively significant.

The fit indices for the final model are provided in Table 4.24. Inspection of the goodness-of-fit measures indicates that this model represents a good fit to the

data. The fit indices for the estimated path model were χ^2 (7, *N*=353) = 7.5, p = .37, GFI = .99, CFI = .99, RMSEA = .01.

Table 4.24

Goodness of fit measures for the structural model

Fit Measure	Default model	Saturated	Independence
Discrepancy	7.50	.000	622.56
Degrees of freedom	7	0	21
P	.37		000
Discrepancy/ *df*	1.07		29.64
Goodness of fit index	.99	1.00	.66
Comparative fit index	.99	1.00	.00
RMSEA	.01		.29

In addition to the fit indices, AMOS also provides the standardised and unstandardised outputs, which are examined for the magnitude and significance of the direct and indirect effects (Khine, 2013). For the current model, the standardised estimates are shown in Figure 4.2 above. Associated with estimated standardised regression coefficients shown in Table 4.25, critical ratio values are more extreme than ±1.96, indicating a significant paths (p<.05). All independent variables examined as predictors were determined to be significant at p<.001 and p< .01.

Table 4.25

Estimates of item regression weights

Variables			Estimate	S.E.	C.R.	P
Mastery goal	<---	Self- efficacy	.12	.05	2.84	.004
Mastery goal	<---	Teacher-student relatedness	.13	.03	3.52	.000
Mastery goal	<---	Mastery goal structure	.59	.04	13.28	.000
Mastery goal	<---	Performance goal structure	.13	.06	3.16	.002
Performance goal	<---	Mastery goal structure	-.47	.04	-7.97	.000
Performance goal	<---	Performance goal structure	.19	.05	3.48	.000
Academic achievement	<---	Teacher-student relatedness	.34	.02	6.80	.000
Performance goal	<---	Self- efficacy	.34	.04	6.68	.000
Academic achievement	<---	Mastery goal	.13	.02	2.49	.013

Estimates of direct, indirect, and total effects are provided in Table 4.26. This table provides an overview of the effects between the factors in the resulting model. The total effects were calculated by combining direct effects and indirect effects that may have been mediated by another factor. The bootstrapping method was employed for mediation analysis.

As shown in Table 4.26, the greatest effect in the model was that of mastery goal structure on mastery goals ($\beta = .59$, $p < 0.001$). This result indicated that students' achievement goals were strongly affected by their perceptions of goal structures that were emphasised in classrooms. Furthermore, teacher-student relatedness, self-efficacy, and performance goal structure had direct effects on mastery goals ($\beta = .13$, $p < 0.01$; $\beta = .12$, $p < 0.01$; $\beta = .13$, $p < 0.01$, respectively). Self-efficacy, performance goal structure, and mastery goal structure also influenced performance goals directly ($\beta = .34$, $p < 0.001$; $\beta = .19$, $p < 0.01$; $\beta = -.47$, $p < 0.001$, respectively). The results showed that the direct effect of mastery goal structure on performance goals was stronger ($\beta = -.47$) than that of performance goal structure ($\beta = .19$). This suggests that as students perceive more mastery goal structures, they are less likely to adopt performance goals.

Regarding indirect effects, Table 4.26 shows that teacher-student relatedness was the only variable that had both direct and indirect effects on academic achievement. The indirect effect of teacher-student relatedness on academic achievement through the mediator- mastery goals was significant with the estimation from 2,000 bootstrap resamples. The total effect of teacher-student relatedness on students' academic achievement was .36 ($p < 0.001$). Mastery goals also had a direct effect ($\beta = .13$, $p < 0.01$) on academic achievement.

Table 4.26

Estimates of standardised direct, indirect, and total effects on achievement goals and academic achievement

Scale	**Teacher-student Relatedness**			**Self-efficacy**			**Performance Goal Structure**			**Mastery Goal Structure**			**Mastery Goal**		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Performance Goal	.000	.000	.000	.34***	.000	.34***	.19**	.000	.19**	-.47***	.000	-.47***	.000	.000	.000
Mastery Goal	.13**	.000	.13**	.12**	.000	.12**	.13**	.000	.13**	.59***	.000	.59***	.000	.000	.000
Academic Achievement	.34***	.02**	.36***	.000	.01**	.01**	.000	.02**	.02**	.000	.07**	.07**	.13**	.000	.13**

*Note. **p < 0.01, ***p < 0.001*

Self-efficacy, performance goal structure, and mastery goal structure appeared to have no direct effects on academic achievement. However, these variables had a direct effect on mastery goals, which directly affected academic achievement. This suggests that the relationships between self-efficacy, performance goal structure, and mastery goal structure to academic achievement may be mediated by mastery goals. Mediation analyses were performed to examine the indirect effects. Results indicated that mastery goals mediated the impacts of self-efficacy and classroom goal structures on academic achievement. The indirect effects of self-efficacy, performance goal structure, and mastery goal structure on academic achievement were significant, but they were quite small ($\beta = .01$, $p < 0.01$; $\beta = .02$, $p < 0.01$; $\beta = .07$, $p < 0.01$). The results also indicate that the mediation was complete in three mediation models because the direct effects of self-efficacy and classroom goal structures on academic achievement became non-significant when mastery goals were included.

4.2.5 Summary of quantitative analysis

In general, the results from the quantitative analyses provided strong evidence for the relationships between the variables upon which the model was built up and supported.

Correlation analysis provided a correlation matrix for the major variables. The results indicate that teacher-student relatedness had the strongest correlation with academic achievement ($r=.37$, $p<.01$). Teacher-student relatedness was also correlated to mastery goals, but not to performance goals. Mastery goals were the second variable in a correlation with academic achievement. Mastery goals also had a positive strong correlation with mastery goal structure, performance goal

structure, and self-efficacy. Performance goals were positively correlated with mastery goal structure.

Factor analysis was used to examine the factors selected to arrive at the model. The analysis was completed in two trials to determine the strongest model. In the first analysis, one item that measured mastery goal orientation needed to be removed because the factor loading of this item was less than .3. A second factor analysis was run after this item was removed. Six factors were shown to be strong enough to be included in the final model. Performance goals were shown to be a very strong factor. All of the three items that measured performance goals had factor loadings above 0.8. Performance goal structure was also shown to be a very strong factor as the factor loadings of all three items were above .7. Mastery goal structure and self-efficacy were found to be very strong factors. Four of the five items measuring mastery goal structure or self-efficacy were above .7, and one item was above .6. Teacher-student relatedness was shown to be a moderate to strong factor. Results indicated that the factor loadings of the items measuring teacher-student relatedness ranged from .5 to .7 (two items above .5, three items above .6, and three items above .7). Mastery goals were considered a very strong factor as all four items had factor loadings above .6 (Stevens, 2002).

The MANOVA results indicated significant differences in the variables across student gender, teacher gender, and class type. Student gender had a small effect on mastery goals, performance goals, and mastery goal structure. Except for teacher-student relatedness, the other variables were found to be significantly different under the effects of teacher gender. Male teachers had a higher effect on students' performance goals than female teachers. However, female teachers had

higher effects than male teachers did on mastery goals, mastery goal structure, performance goal structure, and self-efficacy. The results also revealed that students in general classes were more likely to pursue performance goals than their counterparts in advanced classes.

The regression analysis results present the strength of the variables as predictors in the model. The results indicate that teacher-student relatedness was the most useful predictor of academic achievement. In a prediction model in which teacher-student relatedness, mastery goal structure, performance goal structure, and self-efficacy were identified as predictors of mastery goals, mastery goal structure made the largest contribution ($\beta = .59$, $p < .001$), followed by teacher-student relatedness ($\beta = .13$, $p < .001$). Moreover, in a prediction model in which teacher-student relatedness, mastery goal structure, performance goal structure, and self-efficacy were identified as predictors of performance goals, mastery goal structure was shown to be the most powerful predictor of performance goals ($\beta = -.47$, $p < .001$).

Analysis of the path model revealed that most of the coefficients were significant and in the theoretically expected direction. The final model provided a good fit with all significant paths ($\chi^2 = 7.5$, $p = .37$, GFI = .99, CFI = .99, RMSEA = .01). These results indicate that teacher-student relatedness, goal structures in the classrooms (mastery and performance goal structures), and students' self-efficacy had an effect on students' adoption of achievement goals (mastery and performance goals) and their academic achievement. The following section will present the findings of the qualitative analyses that provide a deeper understanding of these relationships.

4.3 Qualitative results

Qualitative data obtained from student interviews (n = 12) were used to gain a deeper understanding of students' relatedness to teachers, their achievement goal orientations, perceptions of instructions in classrooms (classroom goal structure), self-efficacy, and academic achievement. The following sections include verbatim student quotes to support the quantitative results, focusing on the areas of teacher-student relatedness, achievement goals, self-efficacy and academic achievement, and classroom goal structure.

4.3.1 Teacher-student relatedness

The majority of interviewees concurred that relatedness between teachers and students is important and a good source of support in the school environment. Many students commented that teacher behaviours have positive effects on student motivation. For example, teachers who show concern and care for their students help motivate students to do good work because students "…want to please the teachers" (P1, P3, P8) who they love and respect. Some students highlighted that if you like a teacher, you are more likely to work harder with the subject the teacher is in charge of; otherwise, you are less likely to engage in the class. Thus, students cared about changes in teacher behaviours, attitudes, and emotions. One of these students (P1) stated:

> … I can see his sadness when knowing that we fail to solve problems, especially the easy ones. In class, we can perform very well, but it is carelessness that causes us to make mistakes during the exam. Sometimes the teacher is angry, but I think that he is also sad. He reminds us to not be careless like that. Maybe he feels more disappointed. (P1)

When students were asked why a student expects to be close to the teacher, one student (P3) said that she loved the feeling of being cared for by her teachers. She felt "happy when the teacher paid attention to me" and "touched when she realised that I didn't understand the lesson and explained it again". It was a warm affective tie to the teacher that makes her "feel like studying well so that the teacher keeps caring for me. And I want to make her happy."

When asked about the necessity for building a close relationship with teachers, another student stated:

> In class, the closer the relationship teachers create, the more relaxing and comfortable students feel. Students would feel free to ask questions when they get stuck. Consequently, they'd get better results and comfortably share their feelings with teachers. (P5)

In addition, other students concurred that relatedness contributes to reducing the power distance in classrooms, creating a positive learning environment. One student said:

> A good relationship between the teacher and students makes me feel closer to my teacher and I don't hesitate to ask her about the lessons. Also, I don't feel ashamed when I am not confident in what I've said to her…Once we become closer, I can consult with my teacher about some issues in life. (P8)

It was apparent that in teacher-student relationships students displayed a high level of dependency on the teacher. Some were most concerned with the interactions between teachers and students. For example, one student claimed "the rapport between teachers and students depends on the teachers because students are usually shy and scared of them" (P6). He emphasised that the relationship

between teachers and students is “not like the relationship between friends”. Another student suggested the relationships need to be built

> …through talking with teachers. If teachers are quite open, then, to encourage us or forge the link with us, they should be the first one to ask us to hang around…In return, students should be open too and try to learn better the subjects these teachers are in charge of so that they won’t disappoint their teachers. (P5)

Other factors mentioned by students for creating close relationship included teachers’ attitudes, instructional methods, and treatment of students. For example:

> I hope there will be more care from teachers and more reasonable ways to treat students. They should pay much attention to students since I think students are very timid, not daring to express their viewpoints. (P12)

Regarding the importance of teacher-student relatedness in facilitating students’ learning, many students stated that teacher care encourages them to live up to teacher expectations. When teachers expected students to perform well in a task, the students were much more likely to do the task well, whereas if they were unsuccessful in mastering the task, they expressed feelings of guilt towards their teachers. One student recalled a situation with her math teacher:

> When I participated in a competition for senior high school students, I made a mistake that shouldn’t have been made because my math teacher had so much expectation of me but... Everyone in the team was supposed to solve it but I miscalculated even though I did the calculation twice. I was very sad because I disappointed my teacher, but this teacher and my homeroom teacher texted me with encouraging words. They told me not to be sad and keep on practicing…when I received the text messages from my teachers I felt so happy … happier than when my parents encouraged me. (P2)

4.3.2 Teacher-student relatedness and achievement goals

Interview data highlighted the importance of teachers' emotional support as a positive motivator for the pursuit of achievement goals. Many students stated they strove to complete tasks because they wanted to please their teachers. One student said that if he was unable to solve problems successfully, his teacher was "quite sad" (P8). However, other students acknowledged that their teachers not only valued their achievement but genuinely cared about their learning and improvement. For example:

> She doesn't consider our mistakes as serious, but she wishes us to learn from our experiences. One time, my test score was quite low because of my carelessness. I was so scared, but the teacher just reminded me of the mistakes that I shouldn't have made. (P10)

When evaluating the significance of academic achievement, many students commented on the dominant role of academic scores. Seven of the twelve students stated that getting high scores was important because scores reported the results of their performance. For example, one student stated that when getting high scores, she "may be admired by classmates" (P10). Another student commented:

> Scores are important to me because it affects my life in many ways. At school, I'd feel embarrassed to get lower scores than my friends. At home, my father would be disappointed if he knew about my bad scores. And if there is someone asking me about my schooling, I wouldn't be so proud to show them those bad scores. (P5)

However, some students also asserted that it is necessary to focus on understanding in the classroom. For example, one student stated that although high scores enabled her to achieve the title of "good student" this school year, the most important objective is the understanding of the basic concepts in

mathematics (P2). Another student agreed that scores play an important role in reflecting students' ability, however, she stated:

> …The most fundamental feature of studying is the understanding of the lessons, for scores do not reflect my study exactly. There are many unfair things that happen around us such as having troubles in the exam room, although we perform very well during class time. As a consequence, I think, scores just reflect a small part of my study. (P1)

Acknowledging the significance of understanding in the classroom, many students also highlighted the role of knowledge for improved learning. For example, one student stated, "Getting high scores can only help me immediately but temporarily. For a long-term target, like succeeding in exams or winning competitions, scores can't work things out. Thus, knowledge is more important" (P5). Similarly, another acknowledged that, "knowledge of mathematics will be helpful in the university entrance exam" (P10).

Regarding competitiveness in the classroom, only a handful of interviewees stated that a desire to demonstrate a better ability than others motivated them to get high scores. These students' responses indicated heightened concerns about how they are perceived by other students in the classroom. For example, one student stated, "Being better than others makes me content. It helps me do myself proud…the better I am, the happier I feel" (P4).

Other students expressed a range of reasons including maintaining social status with peers, avoiding the wrath of teachers and parents, and desiring true recognition from peers. For example, one student wanted to appear to be competent in mathematics as he was "a leader of a tutor group" and he did not want to "be scolded" by his teacher and father (P5). Another student noted that he

did not want to expose his competence in the classroom, but he wanted other students to perceive his capability by themselves (P4).

4.3.3 Self-efficacy and academic achievement

Analysis of interview data indicated that very few students believe they are able to succeed in handling challenges in mathematics. Results indicated that although students in advanced classes demonstrated their capabilities to do well on difficult tasks, their interview responses indicated they were not confident about persisting with challenging tasks. For example, one student stated, “I prefer to study on my own rather than depend on others. However, honestly, if I can’t find the answers and it is urgent, I will ask my teacher” (P3). Reasons commonly provided for students’ lower level of self-efficacy in the classroom included limited time, past failure, and insufficient resources. For example, one student believed that she was unable to do difficult math work successfully even if she put a great deal of effort into the task because she couldn’t remember “a large amount of formulas and mathematics concepts” (P1).

The majority of students acknowledged that teachers and friends were reliable sources of knowledge for support. One student stated that although teachers “have broader knowledge and more experience”, she often comes to “friends first” as “it’s easier to ask those who are closer” (P7). Another student stated:

> For the difficult ones, I can’t solve them by myself. There are some challenging or difficult issues which may take me up to three or four days for brainstorming. If I still get stuck with that problem, I would bring it to class where I can ask my friends for the solutions. I myself couldn’t do that, but consulting with others would make it more transparent. (P6)

Interestingly, two students in the advanced classes indicated a level of gender bias related to female students. For example, a male student stated, “Girls are not good at mathematics. They usually make mistakes about rudimentary things, especially when they are required to go to the board to solve math problems” (P4). Similarly, a female student stated:

> Those subjects are related to calculating but I prefer learning about social and natural issues. I find calculating quite boring; additionally, I’m not good at it as I am a girl. I think I do the calculation quite slowly, so I’m more interested in the subjects related to social sciences. (P1)

4.3.4 Classroom goal structures and achievement goals

Interview data indicated that many students perceived they were judged on the basis of whether they completed assignments, or succeeded in tests. Most of the participants indicated they were fearful of being scolded by the teacher when they appeared unable to do well in classrooms. For example, one student reported that most of students in her mathematics class worked under pressure and some of them felt so scared that they have to try different ways to finish all the tasks given. This student stated:

> I myself don’t feel stressed in maths class but my close friends do. Just this morning, my friends have already worked on the maths exercises supposed to be for Wednesday, despite the fact that we won’t have any maths class until tomorrow. They brought the homework to the classroom to ask others for answers. One of them told me that she had to complete it today because we would have maths the next day. She felt scared. (P3)

Other students pointed out they were oriented to achieve high scores in tests. For example, one student stated, teachers “review the lessons carefully for the

tests so that even average sorts of students can get acceptable scores" (P6). Similarly, another student noted, "She told us that in order to graduate our score must be higher than 8. Otherwise, we can't graduate. If it's lower than 6 or 7, we should not take the university entrance examination". (P8)

Other students pointed out that teachers expected students to focus on the understanding of lessons in the classroom. One student noted that the teacher wanted "to have students really know how to complete an assignment rather than to have students show up with their above average scores" (P5). Another student stated, the teacher "explains the importance of math knowledge and asks us to practice more with math work" (P10). However, teacher expectations sometimes went beyond students' capabilities, especially when students were required to take in large amounts of content. For example, a student from the advanced class felt "overwhelmed with new concepts introduced each week" (P2).

Data analysis indicated that students in general classes were given few opportunities to develop responsibility and independence. For example, one student stated, "She shows us our mistakes, corrects them on the board, and asks us to remember not to repeat them next time. Some students make progress, but some don't" (P9). Another student complained, "She spends so much time on explaining the lessons that it's hard for us to understand. As a result, students don't pay attention to the lesson but solely take notes to avoid being scolded" (P5).

Alternatively, students in advanced classes noted that they were encouraged to share their viewpoints of the problems. For example, one student acknowledged that for mathematics, "there are some clever students who have different

approaches compared to the teacher's. Sometimes, the teacher cannot solve the problem, but students can" (P6). It is noteworthy that the teacher was willing to accept the students' solutions, which were considered to be better and shorter than the teacher's ideas. Importantly, this student suggested that students should show respect to the teacher as they are provided opportunities for discussion:

> I think I should try to express it politely and softly. Simply, you tell others your way of thinking. If the teacher recognized and accepted it, then students would do so…it would be easier for everyone to accept it. If you argue with the teacher, some may think that you don't respect the teacher and your behaviour is not good. (P6)

4.3.5 Summary of qualitative analysis

To summarise, the qualitative findings explored students' perceptions of teacher-student relatedness, classroom goal structure, achievement goal orientation, self-efficacy, and academic achievement, as these were reflected in the comments of the students. Analysis of interview data indicated that a sense of relatedness to teachers was a motivating factor for many Vietnamese senior high school students. Students perceived that teachers are strong leaders in the classroom, and they need to put significant efforts into their academic work to please their teachers. When teachers run their classes with caring and friendly behaviours, students had feelings of being encouraged to participate in classroom activities. Whether teachers emphasised the pursuit of achieving high test scores or deep understanding of the lessons, students were more likely to meet their expectations. Interview data also indicate that students' beliefs of academic self-efficacy were influenced by their perceptions of teacher support in the class. Students from the general classes were given less freedom and responsibility in their lessons than students from the advanced classes. Students' responses

suggested that teachers in the general classes displayed more controlling behaviours through time for lecturing, responsibility for identifying mistakes, and expectations of compliance.

The results presented in this section emphasise the existence of the relationships across the constructs as they were shown in the quantitative findings. The comments made by students show that teacher-student relatedness was related to achievement goals. The reason that students in the study gave for pursuing mastery goals included a desire to please teachers or avoid the wrath of teachers. Furthermore, students' responses also showed that there was a strong relationship between classroom goal structures and achievement goals. This relationship was illustrated through comments where students spoke of goal-related messages emphasised by the teacher in the classroom. For example, students mentioned that they wanted to obtain good grades because the teacher emphasised the importance of good grades for gaining university entrance. In addition, the reason students gave for focusing on the understanding of the lessons in the classroom was to satisfy the teacher's expectation. Therefore, it could be argued that the teachers' instructional practices provide directions for students' achievement goals. Finally, the comments show that students' self-efficacy was related to mastery goals. This relationship was illustrated through comments where students from advanced classes spoke of wanting to complete tasks by themselves. The reason students gave for needing teacher support was generally related to time constraints. Importantly, students expressed the view that support from teachers and friends were the main sources of knowledge students could rely on.

4.4 Summary

Chapter 4 has presented the analysis of data from the survey administered to 353 senior high school students and interviews conducted with twelve of those students. The quantitative findings presented a good fit to the data, indicating that there was a relationship between teacher-student relatedness, classroom goal structure, self-efficacy, achievement goals, and academic achievement. A diagram of the final model displayed significant paths and included the strength of the relationships that emerged in the study. The qualitative findings provide information that was important for a better understanding of students' perceptions of these variables, and was supportive for the relationships between them. In interview data, it was noted that students reported the importance of teacher-student relatedness via their trying to please teachers, and attempting to meet their expectations. The qualitative data indicate that students' achievement goals were affected by their perceptions of what teachers emphasised in the class. Students also reported the impact of teacher behaviours on students' self-efficacy, which may affect their academic achievement. A discussion of these results will be presented in Chapter 5.

Chapter 5 Discussion

5.1 Overview

This chapter discusses key findings of the study in relation to the theoretical framework and relevant literature. This chapter begins with a summary of the findings of the present study, followed by a discussion of the key themes emerging from the data analysis.

The main purpose of the study was to investigate the relationships between teacher-student relatedness, classroom goal structures, achievement goals, self-efficacy, and academic achievement in Vietnamese high school students. The results showed that students with a high level of teacher-student relatedness tended to develop mastery goal orientation, leading to high achievement. The results also indicated that there was a cross-level interaction between classroom goals structures and achievement goals. Students who perceived a high level of both mastery and performance goal structures reported a tendency to adopt mastery goals. In addition, self-efficacy was significantly related to both mastery and performance goals, but not related to achievement.

5.2 Discussion

The following sub-sections will discuss three key themes emerging from a critical analysis and synthesis of the main findings of the study. The first theme focuses on the importance of teacher-student relatedness in Vietnamese classrooms, and the central role of collectivist-Confucian values in shaping the nature of this relationship. The second theme discusses the influence of cultural factors on students' achievement goals, and highlights issues of how culture and

context may contribute to the motivational orientations of Vietnamese students. The final theme explores the contribution of self-efficacy to students' learning motivation, and unpacks the unique nature of Vietnamese students' perceived competence.

5.2.1 The importance of teacher-student relatedness in Vietnamese classrooms

In this study, teacher-student relatedness was found to have both direct and indirect influence on students' mastery goals and achievement. The results showed that a sense of being connected with teachers motivated students to perform better or encouraged them to adopt mastery goals, leading to higher achievement. The strength of the relationship between teacher-student relatedness and both mastery goals, and achievement, demonstrates how important teacher-student relatedness is for successful learning.

In Vietnamese culture, educational achievement is conceptualised as the fulfilment of one's duty to family and society (Crawford, 1966). A prime motivation for Vietnamese students to pursue academic success is to please authority figures, including parents and teachers. This view of filial piety emphasises that one's life is given by one's parents, so students in Vietnamese society are expected to repay their parents by bringing honour to their families through academic achievement (Nguyen, 2002). In classrooms, teachers can be viewed as parents, who help students develop not only their cognition, but also their moral behaviours. The Vietnamese saying, "Khong thay do may lam nen (which translates to - *Without a teacher, you are unable to do anything)*", indicates that students' success depends heavily on their teachers and students owe a debt of gratitude to their teachers. In this sense, students are expected to repay

their teachers with success as this is a duty and a moral obligation in Vietnamese society (Nguyen et al., 2006). Close relatedness between teachers and students may promote students' feelings of being in debt to the teachers (Zhou et al., 2012), with students having more desire to repay them, and possibly being motivated to achieve better academic results. Hence, achieving for the sake of teachers is considered to be a positive duty for Vietnamese students, as they perceive high relatedness with their teachers.

In addition, individuals in Vietnamese society are influenced by collectivist-Confucian values. Vietnamese people highly value a sense of belonging, a hierarchical order in a community, and the maintenance of harmony in their relationship with significant people. It is crucial for Vietnamese people to show obedience toward elders, tradition, and social norms. One important social norm expects Vietnamese students to show loyalty and obedience toward teachers. If teachers require students to master tasks, students are expected to meet their expectations. In this way, students do what they are supposed to do according to social norms (Triandis, 1995). Students strive to become competent in learning not only due to the teachers being regarded as authoritarian figures, but also due to students wanting to be close to teachers. Kim and Markus (1999) suggested that most people in East Asian cultural contexts actively follow norms in the sense of being connected to others. Given the strong emphasis on the parenting roles of teachers in Vietnamese classrooms (Kramsch & Sullivan, 1996; Le Ha, 2004), students usually like being cared for by their teachers. The sense of being cared for and connected with teachers can motivate students to internalise the values and beliefs of their teachers (Ryan & Deci, 2000a). Similar to other teachers in Asian countries, Vietnamese teachers strongly emphasise the importance of academic

outcomes and high achievement (Luu, 2012; Trung & Swierczek, 2009). With high relatedness to teachers, students are more willing to internalise their teachers' expectations and may try to achieve for this reason. Therefore, students who feel emotionally connected with their teachers tend to show a desire for wanting to succeed academically.

The positive correlation between teacher-student relatedness and mastery goals and achievement found in this study suggests that Vietnamese students strongly value relatedness with teachers. Teacher-student relatedness was perceived as an important psychological need, and the qualitative analysis yielded a variety of indicators that revealed students' desire to establish close relationships with their teacher. Some students expressed their concern regarding teachers' negative attitudes and emotions expressed by teachers when they failed to meet the teacher's expectations. They reported a feeling of shame and guilt in not meeting the expectations of teachers who believed in their capability. Others expressed emotional comfort when they received encouraging words from teachers. These perceptions of students reflect a need to be connected with their teachers, an attribute which is central to the interdependent view of self (Markus & Kitayama, 1991). A desire to be with teachers may lead to striving to please them, and to meeting their expectations. When teachers endorse mastery goals, and encourage mastery of knowledge in the classrooms, students may internalise the teachers' goals and adopt these goals accordingly.

In summary, the feelings of being connected with teachers have been shown to be significant for Vietnamese students' achievement and motivational orientations. As it was inferred from the model, there were significant paths between teacher-student relatedness, and mastery goals and achievement. This

empirical evidence suggests that the pursuit of mastery goals and achievement depended on the levels of teacher-student relatedness. As discussed above, Vietnamese students tend to internalise teachers' values, expectations, and goals as they learn with a desire for being connected with their teachers. Thus, this process of internalisation may not be compromised in the absence of support for relatedness. As such, satisfaction of students' desire for being connected with teachers is considered a powerful motivator for students' learning. With the support of relatedness from teachers, it is easier for students to accept changes in teachers' pedagogical practices when the student-centered approach is implemented in Vietnamese classrooms.

5.2.2 Achievement goals and cultural issues

The findings of this study suggest that Vietnamese high school students focus on mastery goals as all of the measured motivational factors including teacher-student relatedness, classroom goal structures, and self-efficacy positively predicted mastery goals. It is noteworthy that both mastery and performance goal structures were found to be the greatest contributors to students' adoption of mastery goals.

According to achievement goal theory, students' adoption of achievement goals is oriented by classroom goal structures (cf. Ames, 1992a; Ames & Archer, 1988). In studies with students from Western countries, mastery goal structure and performance goal structure respond to mastery and performance goals respectively (e.g. Polychroni et al., 2012; Urdan, 2004b; Urdan & Schoenfelder, 2006). There are also some additional interactions between classroom goal structures and achievement goals that have been found in studies from Eastern countries (e.g., Bong, 2005; Jiang et al., 2014). In the present study, the results indicated the

correspondence between mastery goal structure and mastery goals, and performance goal structure and performance goals. This finding supports the role of classroom goal structures in predicting the goals that students from collectivist cultures adopt for academic tasks (Kim et al., 2010; Liem et al., 2016; Luo, Paris, et al., 2011). Moreover, the results also revealed that performance goal structure was positively related to mastery goals and mastery goal structure was negatively related to performance goals. From the perspectives of research conducted in Western contexts, pursuing mastery goals in a performance-oriented environment is likely to be frustrating as it reveals a discrepancy between the perceptions of competence with reference to the others' performance, and the tendency of achieving competence for the personal development in students (Ames, 1992a). However, this relationship is meaningful in collectivist contexts, where competitiveness is likely to be perceived as positive for the development of students and society (King, McInerney, & Watkins, 2012; Luo, Paris, et al., 2011). This fact raises issues of how culture and context might contribute to the motivational orientations of Vietnamese students.

The Vietnamese education system has long been characterised as an examination-oriented system. In the early history of education, competitive examinations were held to recruit Mandarins-government officials, who ran all levels of administration in Vietnam. In order to become Mandarins, scholars had to pass four large-scale examinations: the provincial examinations, regional examinations, national competitive examinations, and the court examination (Crawford, 1966). Only those who succeeded in these examinations could achieve government jobs, which were regarded as highly prestigious. According to Chen, Stevenson, Hayward, and Burgess (1995), it was these ancient examinations that

lead to the emphasis on competitive examinations in the education system of East Asian countries. Indeed, these cultural values are reflected in the Vietnamese education system, which places a strong emphasis on the importance of the university entrance examination. While it is the most competitive national examination, most students are motivated to attend because gaining a university place provides opportunities for their better job prospects (Dang, 2007). Over one million Vietnamese high school students take the university entrance exam each year, with only one fifth of students passing the exam (MOET, 2014). Lee et al. (2003) argued that as authoritarian figures in the classrooms, teachers are expected to be responsible for students' success or failure. Vietnamese teachers view examinations as the main influence on their teaching practices and they believe a focus on examination preparation is imperative to meet examination syllabus requirements. Teachers often help students revise key points or provide model answers, which their students can reproduce in examinations. Although teachers are required to focus on students' competence and comprehension as part of the newly-reformed curriculum (Thanh, 2010), the pressure for students' success in examinations is still a major influence on teachers' instructions and emphasis in classrooms. As such, teachers may create learning environments that encourage mastery of knowledge and application of the materials, coupled with an emphasis on the memorisation of factual information in order to pass exams. This was shown in the finding that mastery goal structure was positively correlated with performance goal structure.

The fact that performance goal structure and mastery goals were positively correlated for students in this study suggests that culture alone cannot fully explain these results. A closer examination of context can help explain why students'

perceptions of the competitive examinations motivate them to pursue knowledge mastery. With the influence of a new student-centred pedagogical approach (Thanh, 2010), Vietnamese students are given opportunities to practise, communicate, and cooperate under the guidance of teachers. In classrooms, teachers are expected to use approaches that focus on the development of conceptual understanding, rather than the memorisation of content. In addition, teachers are also expected to place a strong emphasis on preparing students for university entrance examinations. They believe that when students understand the competitive nature of national examinations, they are more likely to develop a deeper understanding, and wider reading of the subject matter. Unlike the view of individualistic Westerners, competitiveness may hold a positive meaning for people from collectivist cultures (Fulop, 2004; King et al., 2012; Watkins, 2007). Watkins (2007) posits that competition in a collectivist setting refers to something that can contribute to self-improvement and personal growth. In Vietnam, the influence of an examination-oriented competitive education system on students' beliefs may have effects on the development of their competence. The desire to achieve highly in competitive national examinations may lead students to expend a lot of effort on learning, and becoming more competent. As noted by King et al. (2012), "if students see competition as a catalyst for self-improvement and the development of competence, then trait competitiveness may also function as a predictor of mastery goals" (p.449).

Ames (1992a) claimed that instructional practices that promote mastery goals reduce students' focus on performance goals. In other words, students' adoption of performance goals may decline due to the structure of a learning environment encouraging competence and skill development. With the

announcement of establishing mastery-oriented pedagogies since the early 21st century, Vietnamese teachers are expected "to teach students the methods of self-learning, systematic collection of analytic and synthetic thinking" (Pham-Minh, 1995, p. 59). Therefore, students in this study who are currently in the first year of senior high school have had many years of exposure to mastery-based instructional practices. In this study, students reported that although achieving high scores (oriented to performance goals) was important, it would not be beneficial to their achievement outcomes in the long run. Instead, they believed that mastering skills and acquiring competencies would be helpful. As such, the newly-advocated instructions teachers have used in the classrooms appear to have had an influence on students' perceptions, leading to a shift in their goal endorsement. It is reasonable to suggest that an increase in classroom practices with a focus on mastery goals is likely to be associated with a decrease in the levels of students' commitment to performance goals.

The influences of culture and context are also manifested in goal orientation and achievement. In this study, students reported a higher mean score on mastery goals than on performance goals. In addition, mastery goals positively predicted students' achievement in the study. These findings are inconsistent with previous studies that show positive correlations between mastery and performance goals among students from collectivist cultures, and both produce positive effects on achievement (Ho et al., 2007; Liem et al., 2008; Luo, Hogan, et al., 2011; Yu & Martin, 2014). The context may partly be responsible for these findings. As discussed above, the Vietnamese education system was traditionally oriented towards examinations. The education reform with the implementation of a student-centred approach has resulted in changes in the nature of assessment, and

criteria of success. In Vietnamese ancient society, intelligent people were considered "the ones who learn by heart the most words and sentences from books …what Confucius has said was the truth, requiring no doubt or discussion" (Le Ha, 2001, p. 298). However, this practice is no longer appropriate for a modern Vietnamese society, especially when the Vietnamese government adopted a market-based economy at the end of 1986. The assessment criteria needs to change according to the demands of labour market which provides better positions for those with better skills and competences. According to the guidance of MOET (2011), test designs need to focus on assessing students' ability in terms of recognition (50%), understanding (30%), and implication (20%). With such assessment criteria, if students only learn by rote, they cannot definitively demonstrate high academic achievement or succeed in the competitive examinations. Therefore, students tend to develop deep understandings and skills to make sense of the information with regard for real life experiences rather than achieving just factual memorisation. As suggested by Le Ha (2001), an intelligent student in current Vietnamese society is the one who "can comprehensively *understand* the knowledge and *interpret* it personally" (p.299).

The findings clearly show that the pursuit of achievement goals in the present study underlines the desire for the high achievement of students, which has been well regarded in collectivist contexts. However, more importantly, these findings revealed differences in the role of achievement goals that students are actually concerned with in collectivist contexts. For example, Ho and Hau (2008) reported that in a Hong Kong context, Chinese students adopted mastery goals and performance goals simultaneously. Similar findings were reported by Luo, Paris, et al. (2011), indicating that the simultaneous adoption of mastery and

performance approach goals coupled with the absence of a performance avoidance orientation is the optimal goal profile for Singaporean students. These recent studies have shown the consistent dominance of performance-approach goals in collectivist cultures where students need to outperform peers and succeed in examinations in order to provide better opportunities for their future. In the present study, the findings appear to be contrary to what has argued in previous studies, as students showed more interest in reaching mastery goals in a competitive academic environment, rather than endorsing both mastery and performance goals. According to Darnon, Dompnier, Gilliéron, and Butera (2010), this possibly takes place when mastery goals actually "serve" performance goals. In this case, students' responses in the interviews demonstrated that they mastered tasks in order to obtain higher scores than others in the competitive examinations, and thus access opportunities for further education such as college or university. The perceptions of students support the idea that mastery goals (mastering tasks) may serve performance goals (outperforming peers in examinations), which in turn serve future goals (getting admitted to further education). In other words, mastery goals may serve future goals and performance goals act as a mediator in the relationship between mastery goals and future goals (mastery goals - performance goals - future goals). Clearly, the endorsement of mastery and performance goals is possible for Vietnamese students, but in this case the role of performance goals is different from what it has shown in other collectivist contexts. As such, further research needs to be conducted to provide empirical evidence for the relationship between mastery goals, performance goals, and future goals. Differences between the pursuit of mastery goals combined with

future goals, and the pursuit of mastery goals without future goals are also needed in further studies in a collectivist context.

5.2.3 The contribution of self-efficacy to students' learning motivation

In this study, students' self-efficacy was positively related to both mastery and performance goals. This finding supports previous studies indicating that self-efficacy is important for the adoption of achievement goals in both individualistic and collectivist cultures (Diseth, 2011; Jiang et al., 2014; Liem et al., 2008). However, self-efficacy was not related to achievement in the present study. Eaton and Dembo (1997) argue that motivation beliefs of Asian people depend mostly on their perceptions of cultural and social contexts. Due to the cultural value of educational achievement, Vietnamese students demonstrate a strong desire to approach success as reflected in the present study. However, they learn with a sense of moral obligation to repay parents and teachers. This emotional orientation may de-emphasise Vietnamese students' perceptions of ability as they have a tendency of placing the expectations of family and community above internal wishes or personal attributes (Markus & Kitayama, 1991). Thus, these success experiences may not strongly contribute to the development of students' individual competence beliefs.

Another explanation for the finding regarding self-efficacy and achievement is that Vietnamese students might underestimate their own ability. This may be, in part, due to the emphasis on humility and modesty in Vietnamese society. For example, in the first year of primary education, Vietnamese students are required to learn "Uncle Ho's 5 teachings" in which "To be modest, truthful, and brave", the fifth teaching, is emphasised as a moral lesson for children at the beginning of their personality formation. This moral lesson is heavily emphasised during the

period of primary education, and is deeply ingrained into the mindset of most Vietnamese students. As a result, students are expected to be humble when successful, and thus they tend to believe that the more competent they are, the more modest they should be. This belief may inhibit students from evaluating themselves rationally. In this study, the emphasis on modesty may have led students to downplay self-perception of their competence, and so the scores on the measure of self-efficacy may not be representative of what they perceive as their actual performance. Therefore, as posted by Leung (2002), if students are constantly taught to be modest, they are likely to demonstrate low ratings on their own confidence.

Furthermore, this low reported sense of self-efficacy may also be due to the highly competitive examination systems characterising Vietnamese schooling. As stated earlier, a Vietnamese high school student is required to participate in competitive examinations. The results of these examinations are often reported in the media, and while the high achieving students can feel proud of their success, a large majority of Vietnamese students will experience a sense of failure. These negative experiences may weaken students' efficacy expectations (Leung, 2002). Furthermore, these students may experience feelings of guilt and shame as they fail to meet the expectations for high achievement from their parents and teachers. They may also feel a loss of face, especially when the examination results are exposed to the public. Given that saving face is highly valued in Vietnamese culture (Nguyen et al., 2006), Vietnamese students may be more cautious when they are asked about their own ability. It is highly possible that students are reluctant to demonstrate overly high perceptions of their competence, as they may

be liable to lose face, which should be avoided at all costs in a collectivist culture (Hofstede & Hofstede, 2005).

The lack of confidence regarding academic achievement is further clarified when examining the findings from the qualitative study. These findings revealed that Vietnamese high school students held weak beliefs in their abilities, especially when approaching difficult tasks. Students reported that they were more likely to ask for help from teachers and peers instead of putting effort in handling the tasks given, especially when they worked under adverse situation. Bandura (1977) indicated that individuals with low self-efficacy tend to reduce their efforts or give up quickly when faced with the obstacles, whereas individuals with high self-efficacy beliefs are more likely to maintain strong commitment to difficult tasks. As such, students in this study appeared to shy away from challenging tasks, and had a tendency to be dependent on teachers and peers as sources of support. With the high value of achievement in a collectivist society, students may not be primarily concerned with the process of dealing with challenging tasks, but instead focus on the successful completion of tasks. Under these circumstances, students may try to complete tasks in different ways, with the ultimate aim of succeeding, irrespective of their sense of self-efficacy.

Based on these findings, the relationship between self-efficacy and achievement does not seem to hold true for Vietnamese students. This is not surprising given other researchers have reported a lack of correlation between self-efficacy and achievement for students from collectivist cultures (d'Ailly, 2004; Eaton & Dembo, 1997; Leung, 2002; Liem et al., 2008). A re-examination of self-efficacy might be helpful for understanding these findings further. Bandura (1986) posited that one’s self-efficacy is primarily based on one’s effort and persistence.

However, the level of effort does not seem to respond to the level of self-efficacy in collectivist contexts. Research indicated that regardless of a low level of self-efficacy, students exerted equal efforts in all tasks and demonstrated high achievement (d'Ailly, 2004; Leung, 2002). This means that one's effort may be independent from one's beliefs of self-efficacy in the process of seeking high achievement. Thus, a sense of self-efficacy with the hypothesis of effort may be different from a sense of self-efficacy that students actually feel in collectivist contexts. This assumption can be supported by the findings of this study that found that although self-efficacy was not directly related to achievement, it indirectly influenced achievement through the adoption of mastery goals. Further studies are needed to redefine students' self-efficacy in collectivist cultures where effort expenditure is highly valued, and there has been no demonstrated relationship between sense of self-efficacy and effort expenditure (Hau & Ho, 2010).

5.3 Conclusion

This chapter has discussed how teacher-student relatedness, classroom goal structures, and self-efficacy significantly contributed to Vietnamese students' achievement goals in this study. As a basic psychological need, relatedness to teacher s played an important role in students' internalisation of their teachers' values and beliefs. A sense of being connected with teachers promoted students' willingness to internalise the social expectations and achievement goals the teachers were endorsing. When discussed in reference to the cultural context of Vietnam, teacher-student relatedness was seen as a driving force for student achievement, as they learned with the goal of pleasing significant people, such as

parents and teachers. The students in this study had high perceptions of teacher-student relatedness, which significantly influenced their learning.

Findings from this study also suggest that the interaction of classroom goal structures and achievement goals is influenced by the culture and context in Vietnam. With high expectations for educational achievement, students felt the pressure to achieve in a competitive learning environment. In addition, the assessment criteria for the implementation of a new curriculum oriented students to focus more on the adoption of mastery goals. Students perceived that the development of competence would be beneficial for their future goals, including possibly gaining a university place. The cultural value of academic achievement translated into Vietnamese students adopting mastery orientation, which might lead to academic success. In this way, students adopted mastery goals for achieving further education rather than for being interested in learning. Therefore, performance goals still play a role in Vietnamese students' learning motivation.

In the present study, self-efficacy does not appear to be predictive of students' achievement. The valued virtue of humility and modesty in Vietnamese culture may inhibit students from having high perceptions of their competence as students are expected to be humble upon success. Moreover, the competitive examination system is not considered an effective environment supporting the development of a high sense of self-efficacy. The sense of failure and the fear of losing face due to the examination-oriented system may reinforce the lack of confidence in Vietnamese students. Nevertheless, a sense of self-efficacy indirectly affected academic achievement through the adoption of mastery goals, suggesting that self-efficacy may promote students' achievement, but it is not a main contributor in the Vietnamese context.

Chapter 6 Conclusion

6.1 Overview

This chapter provides a conclusion to the study. It commences with a summary of the study, followed by an overview of the theoretical and practical implications of the study. The next section outlines the limitations of the study, and the chapter concludes with a discussion of the directions for future research.

6.2 Summary

The evolution of a knowledge-based economy has required dramatic changes to education in terms of the quantity and quality. Educational reforms are therefore the top priority of most governments around the world. Like many other countries, Vietnam has committed itself to educational reforms to meet demands for economic growth. Chapter 1 provided an introduction to the study, and outlined details of Vietnam's education reforms after recent changes of economic policy from a controlled economic system to a market-oriented system. An overview of the literature provided some understanding of the constraints in educational policy provision that have predominantly emphasised the introduction of a learner-centred approach. In Vietnamese settings, the main aim of the current education reform is to improve the quality of teaching and learning, but less research has been conducted to explore and identify motivating factors for the development of students' abilities and skills.

In Chapter 2, an overview of theoretical frameworks and collectivist culture was provided. The literature on achievement goals helped to conceptualise how to identify different types of achievement goals and how to adopt each of them in the classroom. Students may pursue mastery or performance goals in the classroom if the emphasis is

placed on mastery or performance goal structure respectively. The literature also provided evidence for the outperforming features of mastery goal orientation compared to performance goal orientation. Evidence indicated that mastery goals are related to positive academic and socio-emotional outcomes, whereas the outcomes of performance goals are still equivocal. The literature on academic self-efficacy provided a direction for measuring the effects of students' confidence on achievement goals and academic achievement.

A conceptual model was developed based on a consideration of the literature. The study used a cross-sectional approach to examine the relationships among teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement of Vietnamese senior high school students. The study was guided by four research questions:

1. Does teacher-student relatedness, classroom goal structures, and self-efficacy predict achievement goals in Vietnamese senior high school students?

2. Does teacher-student relatedness, achievement goals, and self-efficacy predict academic achievement in Vietnamese senior high school students?

3. Are there significant differences in teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement across demographic factors?

4. What is the relationship between teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement of Vietnamese senior high school students?

The methods utilised in the study were described in Chapter 3. The study employed a sequential mixed-methods approach incorporating both quantitative and qualitative methodologies. In the quantitative study, the relationships among the constructs were examined, using a self-report survey. To measure the variable of teacher-student relatedness, the study used the Teacher Involvement scale (a student report-short form) from Teacher As Social Context (Belmont et al., 1992). The Pattern of Adaptive Learning Survey Scales (PALS) (Midgley et al., 2000) was used to measure achievement goal orientation, classroom goal structure, and self-efficacy. In the qualitative study, a small group of students were selected for individual in-depth interviews. The purpose of the qualitative phase was to provide more insights into the quantitative results. A detailed description of the selection of participants, measures utilised, and statistical techniques used for data analysis was provided.

Chapter 4 reported the results of the study. In the quantitative study, the properties of the measures and the relationships between the measures were explored. In examining the relationships among teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement, it was found that most of the hypothesised relationships were largely supported. From the path model, teacher-student relatedness, classroom goal structure, and self-efficacy have a statistically significant effect on students' achievement goals. Teacher-student relatedness was positively correlated with mastery goals and achievement. There was a cross-level interaction between classroom goal structures and achievement goals. Both mastery and performance goal structures positively predicted mastery goals. Self-efficacy was found to have direct influences on both mastery and performance goals, but not on academic achievement.

Other results from the qualitative study indicated that Vietnamese senior high school students demonstrated a need for getting close to the teacher. Teacher-student relatedness had an impact on students' motivation as they made attempts to please the teacher. In view of evidence that students relied on teachers as a good source of knowledge, students' orientation to achievement was affected by their perceptions of the instructions emphasised in the class. Students also reported uncertainty of their perceived efficacy as they expected to receive support from teachers and peers when they confronted challenging tasks.

Chapter 5 provided a discussion of the three key themes emerging from the findings of the study. The importance of teacher-student relatedness is emphasised in the Vietnamese context due to the high values of filial piety, harmony, and sense of belonging. With the influence of these values, students demonstrate a desire for being connected with teachers, which can make them willing to internalise teachers' values and beliefs. In addition, contextual and cultural issues help account for students' adoption of achievement goals. The perceptions of competitiveness in an examination-oriented education system may motivate students to develop their competence. The presence of an emphasis of performance goal structure is realistic and it has positive effects on students' mastery goals. The competitive educational context also indicates that students may endorse multiple goals even though they only showed interest in mastery goals in the present study. The valued virtue of humility and modesty is also taken in consideration when examining the relationship between self-efficacy and academic achievement. The correlation between these two variables may not be as straightforward as expected due to the differences in the perceptions of effort values in different cultures.

6.3 Contributions and implications

This study has made some important theoretical contributions. First, it supports pathways through which teacher-student relatedness, classroom goals structures, and self-efficacy influence achievement goals in a collectivist context. By integrating the three key motivational factors within one conceptual model, the present study provided a visual model for the development of students' learning orientation and achievement. The path model in this study suggests that one positive way to impact a mastery goal orientation in a collectivist learning context is through students' feelings of being connected with teachers. This sense of relatedness also influences academic achievement in both direct and indirect ways.

Second, this study highlighted the importance of mastery goal orientation that has been recently encouraged in Asian countries (Liem et al., 2016; Nie, 2016). This study revealed a focus on mastery goal orientation as an optimal goal towards gaining high achievement. All the motivational factors (teacher-student relatedness, mastery goal structure, performance goal structure, and self-efficacy) were found to have a positive path to mastery goals, but not all for performance goals. In addition, the fact that students in this study reported only interest in mastery goals in the context of Vietnam's competitive and examination-driven educational system is relatively new in the existing literature. The extension of this argument may imply that mastery goals may serve future goals (e.g., gaining admission to further education) and performance goals may be a mediator in this relationship.

Third, this study provided empirical evidence regarding the nature of the role of self-efficacy in the learning motivation of students from collectivist cultures. The results confirm what has been argued in previous studies regarding to the relationship between self-efficacy and effort expenditure. Students with a low sense of competence beliefs

may strive for high achievement. This finding revealed cultural differences in how self-efficacy is perceived by individualists and collectivists. In the view of individualists (Bandura, 1977), self-efficacy and effort expenditure are related in doing tasks; however the same may not be true for collectivists. In collectivist contexts, self-efficacy may be related to other cultural values rather than the effort expenditure suggested by Bandura (1977).

This study has important practical implications for teachers both within the Vietnamese context and communities sharing similar cultural and collectivist backgrounds. First, the need for relatedness to teachers has been shown to be significant for students' learning motivation. This is particularly important when teachers find it hard to stimulate students to engage in learning activities that aim to develop conceptual understanding and skills, rather than performance. A sense of being cared for and connected with teachers helps facilitate acceptance of changes in pedagogical practices when a new learning approach is being implemented. This means that teachers need to explore ways to build up close relationship with students as teachers are viewed as authoritarian figures in collectivist classrooms. Teachers can foster relatedness with students by creating a supportive emotional climate in the classrooms, and adopting positive behaviours that can help increase the warmth and care of the interactions (e.g. providing positive feedback, displaying empathy, and using humour in classrooms) (Hutman, Konieczna, Kerner, Armstrong, & Fitzpatrick, 2012). Importantly, these practices need to be promoted in teacher education programs so that pre-service teachers will be well-prepared for facilitating effective teacher-student relatedness when they commence teaching.

Second, the provision of a visual model helps teachers have a clearer picture of achievement goal profiles for Vietnamese high school students. As shown in the model, students can pursue mastery goals in a competitive learning environment. The evidence from the current study and prior research (see Senko et al., 2011) regarding the positive relations between mastery goals and academic achievement, suggests that teachers should place greater emphasis on mastery goals in their classrooms. In addition, emphasis should be placed on mastery goal structure because it can reduce a focus on performance goals as found in the current study. Importantly, teachers and educational reformers should be also concerned with performance goal structures due to its positive effects on mastery goals. In the context of Vietnam, educational reformers should provide training programs to enhance the awareness of teachers and school administrators about the adaptive outcomes of the emphasis on mastery goals, as well as the negative and positive effects of performance goal messages. In addition, the design of mastery-oriented classroom structures should be encouraged among teachers who have had practical experiences with students. These practices are more realistic than simply encouraging teachers to use mastery goal structures in the classrooms.

Third, based on the findings of the current study, and prior research regarding the effects of self-efficacy beliefs in collectivist classrooms, teachers should focus on promoting students' confidence in mastering tasks. The model has shown an increase in self-efficacy is accompanied with an increase in the pursuit of mastery goals, resulting in high levels of academic achievement. This finding suggests that having high perceptions of competence beliefs is necessary for pursuing mastery goals. However, the study also showed that students' self-efficacy did not affect their achievement. As stated earlier, the meaning of self-efficacy may be different when it is perceived by students from a collectivist culture. As Hau and Ho (2010) argued, low-performing students in

Asian countries are likely to keep on putting efforts into tasks despite the failure they have experienced. This argument supports the idea that self-efficacy and effort expenditure may be treated as distinct aspects by the collectivists. Therefore, it is advisable for teachers to nurture efficacy beliefs in students through the understanding of environmental and cultural factors that have an influence on the perceptions of their competence. Vietnamese teachers need be flexible to introduce the moral lessons of humility and modesty in specific situations where students are most particularly advantaged. Educational reformers should provide more practical objectives of moral education in the formal curriculum, which can help students develop new skills in a modern society.

6.4 Limitations of the study and future directions

Although care was taken in the design and execution of the study, there are some limitations that need to be considered. The first limitation concerns the research design. This study is cross-sectional in nature; hence, it could not explain the temporal order of the variables (Zhou et al., 2012). The findings suggested a path model in which teacher-student relatedness, classroom goal structures, and self-efficacy were predictors of achievement goals. It is possible that teacher-student relatedness and self-efficacy might be treated as the outcome variables of achievement goals. Urdan (2004a) cautioned that although the path model is constructed on the basis of theory and prior research, we should be careful with causal claims in the interpretations when data are collected at a single time point. A future longitudinal study with variables tested at different points of time will be helpful to inform the directional effect of the variables.

An additional limitation of the study was related to data collection. The present data were mostly derived from self-report measures, which are prone to common

method variance (Bong, 2005). Future research might include teacher reports of their perceptions of teacher-student relatedness, design of classroom goal structures, and students' self-efficacy beliefs. More research is also needed to examine the paths between these constructs across subjects.

The final point is the limitation of the types of achievement goals examined in this study. Given the importance of avoidant types of goals that have been recently received more concern from researchers (Murayama, Elliot, & Yamagata, 2011), future research could include the measurement of mastery-avoidance and performance-avoidance goals in order to provide more information of students' goal profiles in the Vietnamese context.

Besides the limitations regarding the research methodology, the study also revealed some future directions for research.

Further research is needed to develop more comprehensive understandings of the adoption of mastery goals in the study. For example, there may be other potential interaction effects between mastery goals, and performance goals that need to be considered in future research. This is particularly important as only showing interest in mastery goals does not seem realistic in competitive educational contexts. Students may endorse multiple goals, but the role of each type of goals may be different for students' learning. For example, could performance goals serve mastery goals in a competitive learning context? Do students who pursue mastery goals actually enjoy learning, or do they have other reasons for the pursuit of learning goals (e.g. gaining admission to further education)? A future study investigating the interactions of these goals could provide further insights into students' adoption of mastery goals in a competitive educational context.

Additional research is also needed to identify and explore potential factors that may influence the relationship between self-efficacy beliefs and academic achievement. As discussed earlier, from the view of collectivist values, self-efficacy and effort expenditure may not be related to one other. Therefore, the self-efficacy measures included in the present study may have limitations. Future research may explore additional values that may be useful for examining this construct. There is also a need for future studies to examine the underlying mechanisms between self-efficacy, achievement goals, and achievement in the Vietnamese context.

6.5 Conclusion

This study confirms the contribution of teacher-student relatedness, classroom goal structure, and self-efficacy to achievement goals and academic achievement among Vietnamese students, showing that the pursuit of mastery goals as the target of educational reform in Vietnam requires the consideration of classroom structure variables along with students' psychological factors. The findings demonstrate that, following classroom goal structures, relatedness to teachers was significant for Vietnamese students' adoption of mastery goals, reflecting the value of developing interdependent and harmonious relationships in collectivist societies. The presence of an emphasis on performance goal structure can truly make a difference in mastery goals. In addition, the impact of self-efficacy on academic achievement is not a direct one, suggesting the need for further understanding of students' competence beliefs. The results of this study have both theoretical and practical utility to teachers, educators and policy makers focused on the implementation of a high-quality education system in collectivist cultures, such as Vietnam.

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Appendices

Appendix A: Questionnaire

Questionnaire in English

DEMOGRAPHIC INFORMATION

Directions: Please check (√) the information that describes who you are and fill in the requested information. The information you provide will be used to classify the group of students participating in the study. Your specific answers will not be shared with other people without your agreement.

1. Age: _____
2. Gender: □ male □ female
3. Class: _____
4. Your homeroom teacher: □ male □ female
5. What subject is your homeroom teacher in charge of? _____
6. Your math teacher: □ male □ female
7. Where were you born? _____
8. What is your parents' occupation? Father _____Mother _____
9. What is your place of residence? _____
10. Do you consider your family's income, as

    □ far below average
    □ below average
    □ average
    □ above average
    □ far above average
11. What is your grade point average (GPA) in the last grade of junior high school? _____
12. Which subjects are you required to learn more about this school year?

    □ mathematics □ physics □ chemistry
    □ literature □ English □ history
    □ biology □ geography

TEACHER INVOLVEMENT

Directions: The following eight statements describe your possible experiences of teacher behaviours. Read each statement and decide to what extent it describes your math teacher. There are no wrong or right answers. Please circle the number that stands for your opinion or feeling, using the scale below.

1	**2**	**3**	**4**	**5**
Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**

Example: 1 2 ③ 4 5

13. I feel that my math teacher likes/values me.	1	2	3	4	5
14. I feel that my math teacher does not understand me.	1	2	3	4	5
15. My math teacher spends time with me when I need help.	1	2	3	4	5
16. I don't feel comfortable asking my math teacher about important things.	1	2	3	4	5
17. My math teacher talks with me when I need help.	1	2	3	4	5
18. My math teacher really cares about me.	1	2	3	4	5
19. I feel like my math teacher knows me very well.	1	2	3	4	5
20. I cannot count on my math teacher when I need him/her.	1	2	3	4	5

ACHIEVEMENT GOAL ORIENTATION

Directions: This questionnaire is a series of statements about yourself as a student in the math class. Please circle the number that best describes what you think, using the scale below.

1	**2**	**3**	**4**	**5**
Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**

Example: 1 2 ③ 4 5

21. It is important for me to improve my math knowledge this year.	1	2	3	4	5
22. I try and learn as much as I can in math class.	1	2	3	4	5
23. It's important to me that I thoroughly understand my math work.	1	2	3	4	5
24. It's important to me that I learn a lot of new concepts in math this year.	1	2	3	4	5
25. One of my goals is to master new skills in math this year.	1	2	3	4	5
26. One of my goals is to show other students that I am good at math.	1	2	3	4	5
27. It is important for me to look smart in math compared to other students in my class.	1	2	3	4	5
28. One of my goals is to show others that math is easy to me.	1	2	3	4	5

CLASSROOM GOAL STRUCTURE

Directions: The following statements describe your math class and the work you do in this class. Please indicate your own personal feelings about each statement below by circling the number that really describes your feeling. There are no wrong or right answers. No one at school or home will see your answers.

1	2	3	4	5
Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**

Example: 1 2 ③ 4 5

29. In my math class, trying hard is very important.	1	2	3	4	5
30. The main goal of my math class is understanding the math content.	1	2	3	4	5
31. It is important to learn new ideas and concepts in my math class.	1	2	3	4	5
32. In my math class, how much I improve is really important.	1	2	3	4	5
33. In my math class, it's ok to make mistakes as long as I am always trying.	1	2	3	4	5
34. Getting good grades is the main goal in my math class.	1	2	3	4	5
35. Getting the correct answers is important in my math class.	1	2	3	4	5
36. Getting high scores on tests is important in my math class.	1	2	3	4	5

SELF-EFFICACY

Directions: This questionnaire is a series of statements about yourself as a student in the math class. Please circle the number that best describes what you think, using the scale below.

1	2	3	4	5
Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**

Example: 1 2 ③ 4 5 6

37. I am confident that I can master my math skills this year.	1	2	3	4	5
38. I'm certain I can figure out how to do the most difficult math work.	1	2	3	4	5
39. I am confident I will be able to complete all of the math work in class as long as I don't give up.	1	2	3	4	5
40. I am confident I can learn difficult math work.	1	2	3	4	5
41. I can do even the hardest math work in this class if I try.	1	2	3	4	5

Questionnaire in Vietnamese

THÔNG TIN CÁ NHÂN

Hướng dẫn: Em hãy điền các thông tin vào chỗ trống theo yêu cầu hoặc đánh dấu (√) vào ô trống cạnh thông tin mà các em chọn. Các thông tin em cung cấp theo mẫu dưới đây sẽ được sử dụng để chia nhóm đối tượng học sinh nghiên cứu. Chúng tôi sẽ không cho biết những câu trả lời cụ thể với bất cứ ai khác nếu chưa được sự đồng ý của em.

1. Tuổi: _____
2. Giới tính : □ nam □ nữ

3. Lớp : _____
4. Giáo viên chủ nhiệm : □ nam □ nữ
5. Giáo viên chủ nhiệm phụ trách môn học nào?_____
6. Giáo viên bộ môn toán: □ nam □ nữ
7. Nơi sinh của em? _____
8. Nghề nghiệp của phụ huynh: Cha: _____Mẹ: _____
9. Chỗ ở hiện nay: _____
10. Em đánh giá thu nhập hàng năm của gia đình em ở mức:
    □ rất thấp
    □ thấp
    □ trung bình
    □ trên trung bình
    □ rất cao
11. Điểm trung bình cuối năm lớp 9 của em là bao nhiêu? _____
12. Em có học các lớp nâng cao/lớp chọn không ? □ Có □ Không

Nếu có, em học nâng cao môn gì?

□ toán □ vật lý □ hóa
□ văn □ tiếng Anh □ lịch sử
□ sinh □ địa lý

KHẢO SÁT SỰ QUAN TÂM CỦA GIÁO VIÊN

Hướng dẫn: Những câu sau mô tả những trãi nghiệm của em khi tiếp xúc với các thầy cô bộ môn toán. Hãy đọc và khoanh tròn con số mà theo em mô tả những suy nghĩ và cảm nhận về thầy cô. Ở đây không có câu trả lời đúng hoặc sai vì vậy câu trả lời trung thực của em sẽ được chúng tôi đánh giá rất cao. Câu trả lời của em sẽ không được tiết lộ đối với bất kỳ ai ngoài nhóm nghiên cứu.

1	**2**	**3**	**4**	**5**
Hoàn toàn không đồng ý	**Không đồng ý**	**Không có ý kiến**	**Đồng ý**	**Hoàn toàn đồng ý**

Ví dụ : 1 2 ③ 4 5

13. Em cảm thấy thầy/cô dạy toán thích/coi trọng em.	1	2	3	4	5
14. Em cảm thấy thầy/cô dạy toán không hiểu em.	1	2	3	4	5
15. Thầy/cô dạy toán dành thời gian cho em khi em cần sự giúp đỡ của họ.	1	2	3	4	5
16. Em cảm thấy không thoải mái khi hỏi thầy/cô dạy toán về các vấn đề quan trọng.	1	2	3	4	5
17. Thầy/cô dạy toán nói chuyện với em khi em cần sự giúp đỡ.	1	2	3	4	5
18. Thầy/cô dạy toán rất quan tâm đến em.	1	2	3	4	5
19. Em cảm thấy thầy/cô dạy toán hiểu em rất rõ.	1	2	3	4	5
20. Em không thể tin tưởng thầy cô dạy toán của mình khi em cần sự giúp đỡ của họ.	1	2	3	4	5

KHẢO SÁT ĐỊNH HƯỚNG MỤC TIÊU HỌC TẬP

Hướng dẫn: Đọc và khoanh tròn con số mô tả suy nghĩ của em về các câu nhận định về bản thân các em trong lớp học toán. Ở đây không có câu trả lời đúng hoặc sai vì vậy câu trả lời trung thực của em sẽ được chúng tôi đánh giá rất cao.

1	**2**	**3**	**4**	**5**
Hoàn toàn không đồng ý	**Không đồng ý**	**Không có ý kiến**	**Đồng ý**	**Hoàn toàn đồng ý**

Ví dụ : 1 2 ③ 4 5

21. Điều quan trọng là em có tiến bộ khi học toán trong năm học này.	1	2	3	4	5
22. Một trong những mục tiêu của em trong lớp học toán là học càng nhiều càng tốt.	1	2	3	4	5
23. Điều quan trọng là em hiểu rõ các bài tập toán.	1	2	3	4	5
24. Điều quan trọng là em học được nhiều khái niệm toán học mới trong năm học này.	1	2	3	4	5
25. Một trong những mục tiêu của em là thành thạo các kỹ năng làm toán trong năm học này.	1	2	3	4	5
26. Một trong những mục tiêu của em là thể hiện cho các bạn học khác rằng em giỏi toán.	1	2	3	4	5
27. Điều quan trọng là trông em giỏi môn toán hơn những bạn học cùng lớp.	1	2	3	4	5
28. Một trong những mục tiêu của em là thể hiện cho các bạn học cùng lớp thấy rằng môn toán đối với em rất dễ dàng.	1	2	3	4	5

KHẢO SÁT CẤU TRÚC MỤC TIÊU LỚP HỌC

Hướng dẫn: Những câu sau mô tả lớp học toán của em. Hãy khoanh tròn con số mà theo em diễn đạt đúng những suy nghĩ và cảm nhận của em về lớp học toán này. Ở đây không có câu trả lời đúng hoặc sai vì vậy câu trả lời trung thực của em sẽ được chúng tôi đánh giá rất cao.

1	**2**	**3**	**4**	**5**
Hoàn toàn không đồng ý	**Không đồng ý**	**Không có ý kiến**	**Đồng ý**	**Hoàn toàn đồng ý**

Ví dụ: 1 2 ③ 4 5

29. Trong lớp học toán, chăm chỉ là điều rất quan trọng.	1	2	3	4	5
30. Mục tiêu chính trong lớp học toán là nắm được nội dung bài học.	1	2	3	4	5
31. Trong lớp học toán, học những kiến thức mới, nội dung mới là rất quan trọng .	1	2	3	4	5
32. Trong lớp học toán, điều quan trọng là em tiến bộ như thế nào.	1	2	3	4	5
33. Trong lớp học toán, những sai sót có thể chấp nhận được miễn là em vẫn đang cố gắng học tập.	1	2	3	4	5
34. Trong lớp học toán, đạt điểm số cao là mục tiêu chính	1	2	3	4	5
35. Trong lớp học toán, những câu trả lời đúng hoặc đáp án đúng là rất quan trọng.	1	2	3	4	5
36. Trong lớp học toán, đạt điểm cao trong các bài kiểm tra là rất quan	1	2	3	4	5

KHẢO SÁT MỨC ĐỘ TỰ TIN

Hướng dẫn: Bảng câu hỏi này bao gồm những câu nhận định về bản thân các em trong lớp học toán. Hãy khoanh tròn con số mà theo em diễn đạt đúng những suy nghĩ của em. Ở đây không có câu trả lời đúng hoặc sai vì vậy câu trả lời trung thực của em sẽ được chúng tôi đánh giá rất cao.

1	**2**	**3**	**4**	**5**
Hoàn toàn không đồng ý	**Không đồng ý**	**Không có ý kiến**	**Đồng ý**	**Hoàn toàn đồng ý**

Ví dụ: 1 2 ③ 4 5

37. Em tin chắc rằng em có thể nắm vững các kĩ năng toán học được dạy trong năm học này	1	2	3	4	5
38. Em tin rằng em có thể tìm ra được cách giải những bài toán khó nhất.	1	2	3	4	5
39. Em tin chắc rằng em sẽ có thể làm được tất cả các bài tập toán trên lớp nếu em kiên trì/ không chịu thua.	1	2	3	4	5
40. Em tin rằng em vẫn có thể học được cho dù bài toán có khó,	1	2	3	4	5
41. Em thậm chí có thể làm được những bài toán khó nhất trên lớp nếu em cố gắng.	1	2	3	4	5

Appendix B: Interview questions

Interview Protocol
Time of interview: Date: Thank you for agreeing to be interviewed. It is an interview trying to develop the understanding of teacher-student relatedness, classroom goal structures, achievement goals, and self-efficacy in the context of senior high school. This interview will last around 25-35 minutes and it is entirely confidential. Of course, you won't be identified by name, except the interviewer. You don't have to answer the question if you don't want to. Is it alright if I record the interview? Perhaps I would say that this interview will be served as a part of my research project, and thus your responses will only be used in my report. **Questions:** 1. How often do you talk to your teacher? 2. Have you talked to your teachers about important things? 3. What do you expect from your teacher in the classroom? 4. How does your teacher care for his or her students? 5. How do you have a contact with your teacher when you need help after school? 6. Do you think that the relationship between the teacher and students may affect students' progress in learning? In what ways? 7. How do you define a relationship between the teacher and students? 8. Are you interested in learning mathematics? 9. Can you tell me some challenges you face when learning? 10. How do you deal with difficult math work? 11. What does your teacher often emphasise before or after testst and examinations? 12. What would you say has been the greatest influence in your learning?

Appendix C: Consent forms (sample)

How teachers support students' mastery goal orientations in Vietnamese classrooms: The significance of relatedness

INFORMATION SHEET- MAIN STUDY SURVEY

Research Team

Senior investigators

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School of Education and Professional Studies

Griffith University

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Doctor of Education post-graduate student

Ngoc Xuan Tran

Contact Email ngocxuan.tran@griffithuni.edu.au

Background of the study

Teacher-student relationships are acknowledged to have a great impact on students' academic motivation and achievement, yet little is known about the relationship between students' need for relatedness to their teacher and their achievement goals, especially in Vietnamese settings. This study will investigate what relationships exist among teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement. The findings from this study will provide evidence for the important role of teacher-student relationships in Vietnamese classrooms which has been recognized as a domain of learner-centered psychological principles. The research will make a contribution to increasing the understanding on how the teacher-student relationship, a socio-cultural factor, influences students' learning development in Vietnamese senior high schools.

What participation in this study involves

Participation in this aspect of the study will involve a paper-and-pencil survey. You will be invited to participate in the survey that seeks to gauge your experiences of teacher-student relationships, and your perspectives of yourself in a mathematics class. The survey will be administered at the school meeting hall, and it will take approximately 30 minutes to complete.

Consent to participate

Your participation is voluntary. There will be no penalty or loss should you decide not to participate in the study. You should be aware that whatever your decision is, it will not affect your relationship with the teachers, the school, or the research team.

Are there any risks to participants?

There are no known risks or discomforts associated with this study as your feedback contributes to increasing the understanding of the questionnaire items.

Confidentiality

Your confidentiality and anonymity are assured. The survey will be coded to make sure that you will not be able to be individually identified with your responses. Use of the data will be limited to this study. A report of the general findings from the study will be made available to participants.

Complaint mechanism

This research will be carried out with the permission from the Human Research Ethics Committees of Griffith University which has been developed to approve research in accordance with the *National Statement on Ethical Conduct in Human Research*. If you have any concerns or complaints about the ethical conduct of the research project, please contact the Manager, Research Ethics on +61 7 3735 4375 or research-ethics@griffith.edu.au.

If you have any questions or concerns regarding the general conduct of this study, please contact a member of the research team. Your questions and comments are welcome.

We greatly appreciate your participation in this research.

If you consent for your son/daughter to participate in this study, please provide your details below and sign this consent form. You may request a copy of this form.

Parent name/s: _____

Parent/s Signature/s: _____

Date: _____

Student name: _____

Student Signature:_____

Date: _____

How teachers support students' mastery goal orientations in Vietnamese classrooms: The significance of relatedness

INFORMATION SHEET- MAIN STUDY INTERVIEW

Research Team

Senior investigators

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Doctor of Education post-graduate student

Ngoc Xuan Tran

Contact Email ngocxuan.tran@griffithuni.edu.au

Background of the study

Teacher-student relationships are acknowledged to have a great impact on students' academic motivation and achievement, yet little is known about the relationship between students' need for relatedness to their teacher and their achievement goals, especially in Vietnamese settings. This study will investigate what relationships exist among teacher-student relatedness, achievement goals, classroom goal structures, self-efficacy, and academic achievement. The findings from this study will provide evidence for the important role of teacher-student relatedness in Vietnamese classrooms which has been recognized as a domain of learner-centered psychological principles. The research will make a contribution to increasing the understanding on how the teacher-student relationship, a socio-cultural factor, influences students' learning development in Vietnamese senior high schools.

What participation in this study involves

Participation in this aspect of the study will involve a personal interview (approximately 35 minutes). You will be invited to participate in a one-to-one interview that seeks to gauge your experiences of teacher-student relationships. The interview will be organised at school at a time that is convenient for you.

Consent to participate

Your participation is voluntary. There will be no penalty or loss should you decide not to participate in the study. You should be aware that whatever your decision is, it will not affect your relationship with the teachers, the school, or the research team.

Are there any risks to participants?

Participation in this research project poses no significant risks as the study asks only to understand more about the nature of teacher-student relationships among Vietnamese senior high school students.

Confidentiality

Your confidentiality and anonymity are assured. All interview transcripts will be kept in a locked filing cabinet and only the research team will have access to the files. Participant interview transcripts will be de-identified and only the research team will be able to identify individual participants. Use of the data will be limited to this study. A report of the general findings from the study will be made available to participants.

Complaint mechanism

This research will be carried out with the permission from the Human Research Ethics Committees of Griffith University which has been developed to approve research in accordance with the *National Statement on Ethical Conduct in Human Research*. If you have any concerns or complaints about the ethical conduct of the research project, please contact the Manager, Research Ethics on +61 7 3735 4375 or research-ethics@griffith.edu.au.

If you have any questions or concerns regarding the general conduct of this study, please contact a member of the research team. Your questions and comments are welcome.

We greatly appreciate your participation in this research.

If you consent for your son/daughter to participate in this study, please provide your details below and sign this consent form. You may request a copy of this form.

Parent name/s: _____

Parent/s Signature/s: _____

Date: _____

Student name: _____

Student Signature:_____

Date: _____

Appendix D: Letter of confirmation

VIETNAM NATIONAL UNIVERSITY - HO CHI MINH CITY
UNIVERSITY OF SOCIAL SCIENCES & HUMANITIES
FACULTY OF ENGLISH LINGUISTICS & LITERATURE
Website: http://nva.hcmussh.edu.vn

LETTER OF CONFIRMATION

The Faculty of English Linguistics & Literature certifies that the Vietnamese version of the questionnaire designed by Ms Ngoc Xuan Tran, a Ph.D. candidate at Griffith University (Griffith Identification Number: 2834193) for her dissertation entitled HOW TEACHERS SUPPORT STUDENTS' MASTERY GOAL ORIENTATIONS IN VIETNAMESE CLASSROOMS: THE SIGNIFICANCE OF RELATEDNESS has been translated by Dr. Nguyen Thi Kieu Thu, a senior lecturer of the Faculty.

VNU-HCMC
University Of Social Sciences & Humanities
FACULTY OF ENGLISH
LINGUISTICS & LITERATURE

Signature: _____ Date: March 17, 2014

Dr. Pho Phuong Dung, Vice Dean

ĐẠI HỌC KHXH VÀ NHÂN VĂN
TP. HCM
KHOA NGỮ VĂN ANH

Appendix E: Human ethic approval

GRIFFITH UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE

08-Jan-2014

Dear Dr McDonald

I write further to the additional information provided in relation to the conditional approval granted to your application for ethical clearance for your project "NR: How teachers support students' mastery goal orientations in Vietnamese classrooms: The significance of relatedness" (GU Ref No: EDN/A2/13/HREC).

This is to confirm receipt of the remaining required information, assurances or amendments to this protocol.

Consequently, I reconfirm my earlier advice that you are authorised to immediately commence this research on this basis.

The standard conditions of approval attached to our previous correspondence about this protocol continue to apply.

Regards

Dr Kristie Westerlaken
Policy Officer
Office for Research
Bray Centre, Nathan Campus
Griffith University
ph: +61 (0)7 373 58043
fax: +61 (07) 373 57994
email: k.westerlaken@griffith.edu.au
web:

Cc:

Researchers are reminded that the Griffith University Code for the Responsible Conduct of Research provides guidance to researchers in areas such as conflict of interest, authorship, storage of data, & the training of research students.
You can find further information, resources and a link to the University's Code by visiting
http://policies.griffith.edu.au/pdf/Code%20for%20the%20Responsible%20Conduct%20of%20Research.pdf

Appendix F: Approval from the Department of Education and Training

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Bà Rịa, ngày 15 tháng 10 năm 2013

ĐƠN XIN THỰC HIỆN NGHIÊN CỨU

Kính gửi: Sở Giáo Dục và Đào Tạo tỉnh Bà Rịa - Vũng Tàu.

Tôi tên: **Trần Ngọc Xuân,** sinh ngày: 12/5/1978.

Hiện đang làm nghiên cứu sinh, Trường Đại học Griffith, bang Queensland, Úc.

Theo kế hoạch đào tạo của nhà trường, học viên cần thực hiện nghiên cứu tại thực địa. Bản thân tôi có nguyện vọng được thực hiện đề tài nghiên cứu về sự ảnh hưởng của mối quan hệ giáo viên-học sinh đến việc định hướng mục tiêu học tập của học sinh trung học phổ thông tại tỉnh Bà Rịa -Vũng Tàu. Nghiên cứu này được sự hỗ trợ của trường Đại học Griffith.

Vì vậy, tôi làm đơn này kính mong Sở Giáo Dục và Đào Tạo tỉnh Bà Rịa – Vũng Tàu xem xét cho tôi được phép thực hiện đề tài nghiên cứu này tại địa phương.

Xin trân trọng cám ơn./.

NGƯỜI LÀM ĐƠN

Trần Ngọc Xuân

Đồng ý cho Bà Trần Ngọc Xuân được phép thực hiện đề tài tại Tỉnh Bà Rịa Vũng Tàu

PHÓ GIÁM ĐỐC

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
SỞ GIÁO DỤC VÀ ĐÀO TẠO
TỈNH BÀ RỊA - VŨNG TÀU

Nguyễn Văn Ba

SOCIALIST REPUBLIC OF VIET NAM

Independence – Freedom – Happiness

APPLICATION FOR CONDUCTING RESEARCH

To: **Department of Education and Training in Ba Ria - Vung Tau Province.**

My name is **Ngoc Xuan Tran**. Date of Birth: 12/5/1978.

I am a postgraduate in School of Education and Professional Studies, Griffith University in Queensland, Australia.

On the basis of the higher research program, I am planning to conduct a study about the relationships between students' need for relatedness to teachers and their achievement goals among senior high school students in Vietnamese contexts. The findings from this study will inform how teacher-student relationships support students' development of mastery goals, and the subsequent contribution to the effectiveness of the student-centered learning approach in Vietnam. This study will contribute to identifying teacher-student relatedness as a supporting factor for improving the quality of education that the National Education Development Strategy for 2011-2020 (NEDS) declared as a target of Vietnamese education. The study will be carried out under the supervision of academic staff in Griffith University.

I would appreciate if I have been supported to conduct the study with the topic of **"How teachers support students' mastery goal orientations in Vietnamese classrooms: The significance of relatedness"** in Ba Ria - Vung Tau Province.

Upon review of the research proposal, we agreed that the project by Ms Ngoc Xuan Tran was permitted to be conducted in Ba Ria - Vung Tau Province, Vietnam.

Director

Yours sincerely,

Ngoc Xuan Tran

Tôi tên là Lê Thị Hồng Gấm, số chứng minh nhân dân 172824054 cấp ngày 10/10/2003, tại Công an tỉnh Thanh Hóa, cộng tác viên Tiếng Anh của Trung tâm Dịch vụ Đối ngoại. Tôi cam đoan bản dịch này được dịch đúng sang tiếng Anh từ bản tiếng Việt đính kèm.

I am Le Thi Hong Gam, ID card No: 172824054, issued on October 10th, 2003 at Police of Thanh Hoa province, a collaborator of English of Foreign Service Center. I certify that the English translation is true to the Vietnamese attached.

Người dịch/ *Collaborator*

Lê Thị Hồng Gấm

Số: 55f **/BD - TTDVDN**
Vung Tau, 18/12/2013

Trung tâm Dịch vụ Đối ngoại, trực thuộc Sở Ngoại vụ Tỉnh Bà Rịa - Vũng Tàu, xác nhận bà Lê Thị Hồng Gấm là cộng tác viên tiếng Anh của Trung tâm.

Foreign Service Center, under Foreign Affairs Department of Ba Ria - Vung Tau Province, certifies that Ms. Le Thi Hong Gam is its Collaborator.

KT. Giám đốc/ *For Director*
Phó Giám đốc/ *Vice - Director*

SỞ NGOẠI VỤ TỈNH BÀ RỊA VŨNG TÀU
TRUNG TÂM DỊCH VỤ ĐỐI NGOẠI

Lê Đình Dương