INVESTIGATING CHINESE HIGH SCHOOL STUDENTS’
MOTIVATION, LEARNING ENGAGEMENT,
AND LANGUAGE ACHIEVEMENT IN THE ENGLISH CLASSROOM

By

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Abstract

This study investigated Chinese high school students’ motivational orientations as measured by Self-Determination Theory (SDT), and the extent to which motivational orientations contribute to learning engagement and language achievement in the English as a Foreign Language (EFL) classroom. 390 high school students from Grade 11 at one secondary school in northern China completed a paper-based questionnaire that measures SDT motivational orientations, learning engagement, and self-perceived English proficiency. Their most recent English course test score was also collected as a language achievement indicator. The data was quantitatively analyzed to address the research questions. The results identified four dimensions of SDT motivational orientations and two factors of learning engagement among these Chinese high school English learners, and revealed extensive associations among motivational orientations, learning engagement, and their language achievement. Intrinsic motivation was confirmed to predict positive learning engagement and a high level of language achievement. Introjected regulation was noted to be a minor contributor to English test score. Compared to learning engagement, SDT motivational orientations remained to be strong determinants in contribution to various language achievement across all effective indicators, such as self-perceived language proficiency and test score. This study is important in addressing the foreign language motivation research gap of individual difference with a younger age group of high school students and within a unique English as a Foreign Language learning context in China.
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Chapter 1 Introduction

Context

English has become the global language for communication among people from different national, cultural, ethnic, and linguistic backgrounds (Crystal, 2003; McKay & Bokhorst-Heng, 2008). Recognizing the crucial role of English in international affairs, China has started to utilize English language education as one important human capital strategy to cope with incoming globalization challenges (Law, 2014). Thus over the past decades, English as a Foreign Language (EFL) education has played a vital role in China, and possessing English proficiency has been widely viewed as a national as well as a personal asset (Adamson, 2001; Hu, 2005).

When China adopted its “open-door” policy in 1978, English as a Foreign Language (EFL) was officially established as a secondary school compulsory subject in the national syllabus (Wang, 2007). Since that time, the age of learning English became younger. In most parts of the country, students begin to learn English as a compulsory subject from Grade 3 as of 2001 (Wang, 2007). As such, students in contemporary China invest long school years learning English in addition to the other two core subjects of Chinese and mathematics. By the year 2003, China already boasted the largest English-learning population in the world, with over 200 million children learning English in schools (Jiang, 2003).

Due to the large English language learner population and the crucial status of EFL as a core subject from Grade 3 to Grade 12, EFL education in the public school system in China has received much attention from the government. To improve the education quality, the Ministry of Education (MOE) has called for several reform initiatives to the national English language curriculum and English instruction. These initiatives include promoting inquiry-based learning, developing modern approaches of both formative and summative assessment to academic
evaluation, shifting classes from teacher-centered to student-centered, and increasing students’ cross-cultural awareness by means of language learning (Wang & Lam, 2009). Although the effectiveness of these reforms has been debated by a number of scholars with respect to learner autonomy (Halstead & Zhu, 2009), learning strategies (Yu & Wang, 2009), limited school resources (Tong, 2010), and a tradition rooted in an exam culture (Tong, 2010), researchers do not doubt the value of these reform initiatives and the potential benefits that they may bring to English education throughout China.

One distinct feature of the current national curriculum standards for EFL education from Grades 10 to 12 is the attachment of importance to learners’ affective indices, tapping into fostering students’ motivation for learning. As can be seen in the Framework of Objectives in the new English Curriculum (see Figure 1), a range of affective components including motivation are subsumed under the umbrella of overall ability in language use, along with learning strategies, cultural understanding, language knowledge, and language skills, aiming to help students develop and use comprehensive language learning abilities. The factor of learning motivation is highlighted in high school English education as it is a crucial part of quality-oriented education proposed by the government. For rather a long time, high school English classroom teaching in China remained largely teacher-centered. That is, teachers concentrated on the delivery of knowledge about vocabulary and grammatical structure of the language, while students were used to being spoon-fed the knowledge and spending a tremendous amount of time memorizing the knowledge for examinations. In such circumstances, students’ affective factors were ignored and learning was “not a happy experience but a miserable ordeal” (Wang, 2007, p. 93). Without positive affection toward learning, students were feeling unable to develop autonomy and self-regulation; consequently, students’ independent thinking ability was damaged
and their academic potential constrained. Recognizing “something wrong with the current educational practices” (Wang, 2007, p. 93), the government, as well as teachers and parents, therefore, put forward urgent calls for fostering students’ interest and motivation in the new English Curriculum. The present study will research the affective component of motivation and its contribution to language learning engagement and achievement. The other aspects of the overall ability in language use are beyond the scope of this research.

![Diagram of Objectives in the New English Curriculum](image)

**Figure 1. Framework of Objectives in the New English Curriculum (National English Curriculum Standards, 2001; Wang, 2007, p. 97)**

**Foreign Language Motivation Research in the Chinese Context**

In the early stage of foreign language motivation research, the socio-educational theory (Gardner, 1985; Gardner & Lambert, 1972) cast extensive influence in this field, identifying two classes of motivation for acquisition of an additional language: an integrative orientation through an interest in contact and identification with the target language group; and an instrumental orientation, referring to a desire to learn the language aiming to achieve practical goals. Research
on Chinese students’ motivation toward learning English as a Foreign Language (EFL) demonstrated a strong instrumental trend with the absence of integrative orientation (Ge, 2006; Kyriacou & Zhu, 2008; Liu, 2007; Qing, 2002; Wang & Zhang, 2005; Warden & Lin, 2000), which fundamentally challenged the primary role of the integrative component in the social-educational theory (Gardner, 1985; Gardner & Lambert, 1972).

The dominance of instrumental orientation in Chinese EFL education may be attributed to the educational policy driven by instrumental purposes (Adamson, 2002) and a strong emphasis on testing in the culture and tradition in China (Warden & Lin, 2000). According to Adamson (2002), since the Qing Dynasty in China, there have been historical tensions between a desire to learn English to gain access to more political and economic benefits in the global community and concerns about the impact of learning English on Chinese cultural integrity. As such, China has been implementing “a policy of controlled and selective appropriation, to use English for the purpose of state building, while maintaining cultural integrity” (Adamson, 2002, p. 231). EFL education policy, accordingly, has been swayed to attach more importance to the instrumental function of the language in academics, technology, and business.

On the other hand, English proficiency still plays a gatekeeping role in high-stakes assessments throughout the national educational system, such as high school and university entrance examinations (Hu & McKay, 2012). The largest examination, the National College Entrance Exam (NCEE), is taken by millions of high school students each year. With approximately 1,000 universities in the country, only around 22% of high school students can progress to receive higher education (Bolton & Graddol, 2012). The NCEE remains the dominant pathway for entrance into university, government posts, and high-profile jobs in business. In such a competitive test-driven environment, it is not uncommon for students to
develop instrumental learning orientations.

**Rationale**

Based on the literature concluding the important role of EFL education, the new English Curriculum Standards proposed in China, and the instrumental orientation prevalent among Chinese learners of English, three issues related to English learning motivation studies in China need further investigation. First, foreign language motivation studies in China have been largely conducted among adult learners at the tertiary level, scarcely tapping into younger age learners. Despite the fact that the majority of English language learners in China are school-aged children, foreign language motivation research seldom includes them as participants (Wang & Gao, 2008). In fact, Chinese students do not represent a homogenous group of learners, and instrumental motivational orientation starts to develop when students enter middle school (Xu & Case, 2015). High school students, in particular, at a stage of transitioning from children to adults, tend to display dynamic motivational orientations, subject to social and psychological influences (Kyriacou & Zhu, 2008). Considering the large population of pre-college Chinese EFL learners and the crucial stage of psychological development where high school students are situated, there is a need to clearly demonstrate what the motivational orientations of these high school learners are like in China.

Next, the socio-educational theory is too limited to account for learners’ individual differences in the English as a Foreign Language (EFL) context in China. English as a Foreign Language (EFL) context refers to a context where English is not used as a dominant language (Cheng, Rogers, & Hu, 2004). Under most circumstances in the EFL context, English is used in English classrooms where students have minimal contact with the target language community, and the English teacher is still the most influential agent on students’ affective perception of the
language (Kyriacou & Zhu, 2008). To address the context-specific aspect of motivation toward English learning in China, some researchers have attempted to explore new concepts in their studies. As an example, Warden and Lin (2000) extended the discussion of instrumental orientation by introducing the concept of “required motivation,” another motivational class derived from requirements that are internalized within the culturally specific context. The emphasis on motivational internalization echoes the nature of Self-Determination Theory (SDT; Deci & Ryan, 1985), a cognitive psychological model addressing the satisfaction of psychological needs (i.e., autonomy, competence, and relatedness) in relation to motivational internalization. Since it was initially introduced to the second language motivation field by Noels, Pelletier, Clément, and Vallerand (2000), this model has drawn increasing attention from researchers. The literature, however, continues to indicate that there is a dearth of research on Chinese EFL learners’ motivational orientations using a Self-Determination Theory framework (Kyriacou & Zhu, 2008). Therefore, research grounded in Self-Determination Theory is needed to explore this issue.

Moreover, with increasing studies on language learning motivation, researchers as well have turned their attention toward identifying the most predictive motivational orientations to language learning outcomes and the psychological needs to support those classes of motivation. To date, there has been evidence indicating that language students’ motivational orientations are significantly associated with their satisfaction of psychological needs, influenced by the teacher’s rapport with the class (Clément, Dörnyei, & Noels, 1994), the teacher’s communication style (Noels, 2001; Noels, Clément, & Pelletier, 1999), the teacher’s emotional and academic support, and perceived classroom social climate (Joe, Hiver, & Al-Hoorie, 2017). In addition, the close link between motivational orientations and language learning outcomes has been identified
among post-secondary language learners (Cheng et al., 2014; Comanaru & Noels, 2009; Noels, 2001). However, much less is understood about what types of motivation contribute to language learning engagement and achievement among Chinese high school EFL students, even though evidence supports the important role of motivation in senior high school in determining language learning outcomes (Ghenghesh, 2010).

**Purpose and Research Questions**

The purpose of this thesis study is two folded, (1) to examine Chinese high school learners’ motivational orientations in the English classroom, using a Self-Determination Theory (SDT) framework, and (2) to understand the contributive power of SDT motivational orientations for learning engagement and further language achievement. Specifically, the following research questions were addressed:

1. What are the motivational orientations as measured by Self-Determination Theory and the learning engagement of Chinese high school students in the English classroom?
2. To what extent are students’ SDT motivational orientations related to their English learning engagement?
3. To what extent do students’ SDT motivational orientations and English learning engagement contribute to their English language achievement?
Chapter 2 Literature Review

An Overview of Two Motivation Theories

Second language (L2) motivation is a well-documented research field in the Western world. Researchers have discovered that motivational factors play as important a role as their cognitive counterparts, such as language learning strategies, in acquiring an additional language. As Dörnyei and Ryan (2015) noted, one can hardly think of second language learning development occurring without some form of motivation on the part of the learner. Motivation determines the direction and magnitude of behavioural choices regarding what goals to avoid or to pursue (Dörnyei & Ushioda, 2011), and provides “the driving force to sustain the long and tedious learning process” (Dörnyei, 1998, p. 117). The socio-educational theory and Self-Determination Theory are the two most influential theories in the second language motivation field over the past decades. In this section, I compare these two theories, attempting to articulate why people learn a new language from different sides, and review debates based on empirical studies, as a means to justify my adoption of the theoretical framework for the present thesis study.

Comparison between the socio-educational theory and Self-Determination Theory. First, these two theories demonstrate two different perspectives to interpret the reasons for learning an additional language. In the socio-educational theory proposed by Gardner (1985), motivation was linked to learners’ attitudes towards the target language community, in addition to a desire to learn the language. The socio-educational theorists assumed that individuals could possibly hold two types of motivation for learning an additional language: an integrative orientation through an interest in contact and identification with the target language group; and an instrumental orientation, referring to a desire to learn the language to achieve practical goals,
such as job advancement or course credit. The integrative component in this model addresses the social psychological nature of intergroup communication and identification, and is recognized in empirical studies as “explaining learners’ motivational disposition and motivational learning behaviour” (Dörnyei, 2003, p. 5).

In contrast to the social educational view of second language learning motivation, Self-Determination Theory (SDT; Deci & Ryan, 1985), a cognitive psychological model, was initially extended to the second language motivation field by Noels, Pelletier, Clément, and Vallerand (2000). According to Self-Determination Theory, “to be motivated means to be moved to do something” (Ryan & Deci, 2000, p. 54). “Orientation of motivation concerns the underlying attitudes and goals that give rise to action — that is, it concerns the why of actions” (Ryan & Deci, 2000, p. 54). Individual’s “capacity to choose and to have those choices” (Deci & Ryan, 1985, p. 38) determines their motivation and reasons behind. In this theory, people take actions guided by two broad types of reasons (i.e., motivational orientations): one is to satisfy their internal psychological needs for interest or mastery, namely intrinsic motivation; the other is to produce separable consequences, such as getting rewards, namely extrinsic motivation. Based on the degree of internalization from low to high, extrinsic motivation can be further categorized on a continuum into four inter-transferable subtypes: external regulation, introjection, identification, and integration. The construct emphasizes the role of the internally perceived locus of causality (e.g., competence, autonomy, and relatedness) in facilitating intrinsic motivation and promoting the internalization and integration of external regulation (Ryan & Deci, 2000). Accordingly, individuals choose to learn a new language either for purely linguistic interest or for non-linguistic reasons, such as identified utility or self-esteem. The more internalized the motivation is, the better learning performance would be.
Unlike the social theory mainly tapping into the trait-like integrative component, Self-Determination Theory views motivation as a continuously evolving construct, subject to various internal and external influences confronted by the learners (Dörnyei, 2001). This cognitive account for language learning motivation, featured in a more comprehensive and dynamic nature, allows for the inclusion of a large number of language learning orientations and suggests the possibility of a change in motivational orientation (Dörnyei, 1998).

**Debates based on empirical studies.** Empirical studies have triggered debates over the generalizability of these two theoretical frameworks. While most studies by Gardner and colleagues (Gardner, 1985; Gardner & Lambert, 1972) have emphasized the integrative component, the instrumental component has received less research attention in that the socio-educational theory was established in the multilingual setting of Canada, where second language learning is closely concerned with ethnic contact and identification. Therefore, when this theory was adopted beyond this specific context, particularly in relation to language achievement, inconsistent findings were present in various research settings. In a study of 130 university students learning Spanish as a foreign language in the US, for example, Hernandez (2008) confirmed integrative motivation as a significant predictor of language achievement in the foreign language classroom, including oral proficiency, course scores, and learning persistence. However, Takahashi (2013) challenged the socio-educational model by studying varying results of research on foreign language motivation among Japanese learners of English guided by the socio-educational theory. The researcher pointed out there might be no specific target language community in EFL learners’ minds in that English has become a primary international language, which is why the empirical conclusions on the relationship between motivational orientations and EFL achievement have varied to such a great extent.
In response to the criticism over the socio-educational construct, Gardner (2000) revised the initial model and insisted on the generalizability of the socio-educational theory in different contexts across the world. Based on a meta-analysis of studies conducted by Gardner and colleagues, Masgoret and Gardner (2003) distinguished between motivation and orientation by defining motivation as a construct comprising three components, namely effort, attitude, and desire to learn a second language. They also claimed “in the socio-educational model of second language education, the factor most directly linked to achievement is motivation” (p. 129). According to Gardner (2001), “orientations are simply classifications of reasons that can be given for studying a language, and there is little reason to believe that the reasons, in and of themselves, are directly related to success” (p. 16). The shift of study focus from orientations to motivation allows for more research to explore the affective variables and motivational behaviours functioning as mediators between orientations and learning achievement.

Meanwhile, an increasing body of SDT-guided language motivation research has been fruitful. Chen and Kraklow (2015) examined the relationship among three types of motivation (intrinsic motivation, IM; identified regulation, IR; and external regulation, ER) proposed in Self-Determination Theory and English learning engagement among 276 Taiwanese domestic university students. The study revealed strong associations between different self-determination orientations and EFL learning engagement. Similarly, Cheng et al. (2014) studied 1281 large-scale English test candidates across the three contexts of Canada, China, and Taiwan. They found that intrinsic motivation significantly predicted high scores in language test performance, whereas external regulation and high anxiety predicted low test score. However, language learning motivation studies grounded in Self-Determination Theory are still sparse in Asian EFL contexts, compared to those conducted in North American settings. As well, current literature in
diverse contexts and populations still contains inconsistencies as discussed in the following sections. Therefore, the generalizability of this construct is open to be tested in future studies.

Generally, compared to the integrative orientation in the socio-educational theory predictive of intergroup variables (e.g., ethnic identity and language contact), the SDT-guided motivational orientations are more associated with learners’ personal characteristics (e.g., perceived locus of causality; Noels, 2001; 2005). Thus the SDT framework displays more advantages for the description of individual characteristics in language learning motivation and the investigation of relationships between motivation and language learning outcomes commonly associated with foreign language classrooms, where language learners have minimal contact with the target language community.

A conclusion on the adoption of the current theoretical framework. The socio-educational theory and Self-Determination Theory tend to interpret why people learn an additional language from two different perspectives. The former focuses on the purpose of social interaction between ethnic communities, assuming motivational orientations as relatively static traits in language learners, whereas the latter taps into the perceived individual characteristics in language learning psychology, subject to both internal and external influences. There have been ongoing discussions over the two constructs. To date, it is not possible to reach a conclusion which one is superior. In fact, these two theoretical frameworks may share some concepts. According to Noels et al. (2000), instrumental orientation in the socio-educational theory is highly correlated with external regulation in Self-Determination Theory. Hence they may be complementary rather than competing views. The employment of either of these two theoretical frameworks, for language motivation investigation, should be justified by meaningfully connecting the constructs to specific research contexts with specific research purposes.
The present thesis study aims to examine language learners’ individual differences in the context of a high school EFL classroom in China, where students have minimal contact with the target language group (i.e., native English speakers) and quite an amount of pressure from the upcoming National College Entrance Examination in a couple of years. The socio-educational theory, which places the primacy of language community interactions over language instrumental purposes, does not function for detecting individual differences in such a context. Therefore, Self-Determination Theory, focusing on learners’ psychological characteristics, has been adopted as the theoretical framework for learners’ motivation investigations in this study.

**The Theoretical Framework: Self-Determination Theory**

Deci and Ryan’s (1985) Self-Determination Theory (SDT) is considered as a macrotheory of human motivation, addressing a multitude of basic issues, such as personal development, self-regulation, and universal psychological needs. It ultimately taps into human psychological well-being (Deci & Ryan, 2002; 2008). Unlike most other theories in the motivation field, Self-Determination Theory makes a specific distinction within the class of motivated behaviours founded on basic psychological needs.

According to Self-Determination Theory, motivation can be characterized into three general forms (i.e., motivational orientations) based on their underlying reasons: intrinsic motivation, extrinsic motivation, and amotivation (Ryan & Deci, 2000). An individual is intrinsically motivated when he/she is spontaneously engaged in an activity because of the inherent enjoyment and satisfaction in the activity, per se. In contrast, an individual is extrinsically motivated when he/she pursues an activity primarily due to separate outcomes that are external to the activity itself, such as earning an external reward or avoiding a punishment. Amotivation, contrasted with the two preceding forms of motivation, refers to the condition in
which an individual lacks the driving force to engage in an activity because he/she perceives little ability in and/or relation with the activity. Since the process and consequences are out of his/her control, an individual would be expected to quit the activity as soon as possible.

Extrinsic motivation can be further subcategorized into four dimensions: external regulation, introjected regulation, identified regulation, and integrated regulation. External regulation is defined as doing something for addressing external demands or gaining tangible benefits. If those purposes are taken away, there is no incentive to continue engagement in the activity. Introjected regulation pertains to engagement in an activity due to certain internal pressures, such as to avoid the feeling of guilt, or to gain recognition from others. This type of extrinsic motivation largely involves self-ego or self-esteem, thus more self-determined than external regulation, but it is still not able to give rise to actions on the basis of autonomous personal choice. Identified regulation refers to an individual’s conscious acceptance of the significance of an action and a certain degree of volition in engagement. It is only when an individual self-endorses the value in the actions that such self-regulation emerges.

The most self-determined form of extrinsic motivation is integrated regulation, which “occurs when identified regulations have been fully assimilated to the self” (Ryan & Deci, 2000, p. 62). Although integrated regulation involves a high degree of goal congruence with one’s own value system, thus sharing some qualities with intrinsic motivation, it is still a type of extrinsic motivation, and will never be transformed into intrinsic motivation, because behaviours motivated by integrated regulation ultimately pursue an instrumental purpose separate from the action itself. In empirical research, however, integrated regulation is usually not included in discussions due to the difficulty for individuals, particularly respondents of a young age, to distinguish this concept from identified regulation (Noels, Pelletier, Clément, & Vallerand,
15

All the types of SDT motivation are arranged along a continuum of self-determination from left to right based on the extent to which behaviours are autonomous (see Figure 2).

Figure 2. The Self-Determination Continuum, with Types of Motivation and Types of Regulation. (Deci & Ryan, 2002, p. 16)

SDT theorists hold that human motivation is a dynamic construct. Controlled forms of motivation on the left half of the continuum can be gradually internalized or integrated into autonomous self-regulation (Deci, Vallerand, Pelletier, & Ryan, 1991). The process of internalization can be facilitated by supports for self-perceived competence, a sense of relatedness, and an autonomous context. In fact, the formulation of SDT conceptualization is developed on an important premise that the satisfaction of three basic human psychological needs (i.e., autonomy, competence, and relatedness) in interpersonal dynamics and social settings function as prompts for human beings’ development of growth-oriented propensities, namely, internalization and intrinsic motivation (Deci & Ryan, 2012). Opportunities to satisfy any of these three needs contribute to people being motivated, as opposed to amotivated. An autonomy-supportive context is particularly necessary for fostering intrinsic motivation (Deci & Ryan, 2002).
The proposal of the concept “internalization” resulting from satisfaction of the basic human psychological needs of “free choice” embodies great pedagogical value in the realm of education. As Ryan and Deci (2000) stated:

Because most tasks that educators want their students to perform are not inherently interesting or enjoyable, knowing how to promote more active and volitional (versus passive and controlling) forms of extrinsic motivation becomes an essential strategy for successful teaching. (p. 55)

**An Examination of SDT Motivational Orientation Scales in Different Populations**

In contrast to the previous unitary perspective of motivation, one distinct feature of Self-Determination Theory is the view of different motivational orientations falling at different points on a continuum according to the extent of autonomous or internalized behaviours. Although extrinsic motivation was categorized into four subtypes on the continuum, Ryan and Deci (2000) regarded intrinsic motivation as a global construct without further discrimination. In the domain of education, however, Vallerand and colleagues (1992) unpacked intrinsic motivation into three dimensions: intrinsic motivation to know (IM-To Know), to accomplish things (IM-To Accomplish), and to experience stimulation (IM-Stimulation).

According to Vallerand et al. (1992), IM-To Know involves within the performance of an activity the “pleasure and the satisfaction that one experiences while learning, exploring, or trying to understand something new” (p. 1005). IM-To Accomplish refers to engagement in an activity because of the “pleasure and satisfaction experienced when one attempts to accomplish or create something” (p. 1006). Lastly, IM-Stimulation pertains to doing an activity to “experience fun, excitement, and positive sensations” (p. 1006). Thus Vallerand et al. (1992) developed a seven-dimensional Academic Motivation Scale (AMS) for SDT motivation research.
in education. In accordance with SDT, Vallerand et al. (1993) conceived that the seven AMS dimensions of motivation were posed on a continuum of increasing self-determination. Informed by Ryan and Connell’s (1989) investigation of young (Grade 3-6) English-speaking students, Vallerand et al. (1992, 1993) also hypothesized that the AMS subscales should follow a simplex pattern: Adjacent subscales were supposed to have stronger positive correlations compared to subscales that were far away on the continuum; amotivation was expected to negatively correlate with the three types of intrinsic motivation.

To extend Self-Determination Theory into the second language (L2) motivation research field, Noels and associates (2000) tested the Academic Motivation Scale and the hypothesized simplex pattern among 159 college-age (average age 22; age range: 18-50) Anglo-Canadian learners of French. Similar to the results of Vallerand et al.’s (1992, 1993) studies, Noels et al. (2000) distinguished among seven motivational orientations including: amotivation, three types of intrinsic motivation (IM), and three types of extrinsic motivation (EM). They developed the Language Learning Orientation Scale- Intrinsic Motivation, Extrinsic Motivation, and Amotivation Subscales (LLOS-IEA).

Among intrinsic motivational orientations, Noels et al. (2000) distinguished: (a) intrinsic motivation stimulation (IM-stimulation), motivation based on positive sensations such as esthetic pleasure from hearing a new language; (b) intrinsic motivation accomplishment (IM-accomplishment), motivation resulting from experiencing positive feelings about an accomplished goal such as understanding a difficult idea in a new language; and (c) intrinsic motivation knowledge (IM-knowlege), behaviour motivated by desire to expand one's knowledge such as learning about a new language culture. Among extrinsic motivational orientations, and following SDT developers (Deci & Ryan, 1985; Deci et al., 1991), Noels et al.
(2000) distinguished: (a) identified regulation, behaviour motivated by personal choice or value placed on new language learning such as choosing to speak more than one language; (b) introjected regulation, motivation resulting from internalized pressure such as guilt reduction or a desire to impress others; and (c) external regulation, behaviour motivated by external means such as reward, punishment, or compliance. These subscales represent a continuum on the self-determination scale ranging from the most self-determined (intrinsic motivation stimulation) to the least self-determined (external regulation) motivational orientations; amotivation is considered to be the end point of the SDT continuum, opposite to both intrinsic and extrinsic motivational orientations. The results of this study (Noels et al., 2000) also supported the hypothesized simplex pattern of correlations reflecting the SDT continuum of self-determination. That is, the three subtypes of IM shared the strongest correlations; adjacent subtypes generally had higher positive correlations than those theoretically distant subtypes; intrinsic motivation subscales demonstrated no significant correlation with external regulation, and negatively correlated with amotivation. However, although the IM and EM subscales were generally negatively correlated with the Amotivation scales, Identified Regulation had a stronger negative correlation with amotivation than the IM subscales. Although showing some difference with the hypothesized correlation among SDT subtypes, this pattern generally supported the theoretical continuum at least in this population who “were voluntarily attending a school where bilingualism is valued and where acquiring an L2 is a degree requirement” (p. 71).

However, as the SDT motivational orientation scales were applied to more studies on young-aged learners, inconsistent results emerged. As an example, Vandergrift (2005) found that, while a pattern of significant correlations between the SDT subscales was confirmed, the theoretically hypothesized simplex pattern was detected only partially in a sample of 57
Canadian young adolescent learners (age range: 13-14) of French, over half of whom spoke first languages other than English or French. Notably different from the earlier studies (Noels et al., 2000; Vallerand et al., 1992; 1993), EM and IM subtypes were all positively and significantly correlated without gradual increasing strength on the continuum, and only IM demonstrated a significant but weak negative correlation with Amotivation. Based on these results, the researcher concluded that these motivational scales “may have tapped identical construct,” which the researcher attributed to these young learners’ lack of “distinctions in degree of motivation” (Vandergrift, 2005, p. 78).

As another example, Ardasheva, Tong, and Tretter (2012) investigated SDT motivation orientations among 1057 pre-college ESL learners (651 elementary, ages 9-11 years; 275 middle, ages 12-14 years; and 131 high school, ages 16-17 years) with an average intermediate English proficiency, attending 38 schools in the US. The study employed 4 subscales from the LLOS-IEA (Noels et al., 2000): IM-knowledge, IM-accomplishment, introjected regulation (EM), and external regulation (EM). However, exploratory and confirmative factor analyses only identified a three-factor solution: IM, Introjected regulation, and External regulation. No substantial differences by age level were found in this sample. Similar to those reported in Vandergrift’s (2005) study, pre-college ESL students endorsed more external regulation than the other two types of SDT motivation. There was great overlap (31% shared variance) between IM and external regulation in pre-college immigrant learners of English. The researchers suggested that the strong role of external regulation and its high level of correlation with intrinsic motivation might result from immigrant populations’ perceptions of learning the dominant language as an investment in their own cultural identity, which is considered as symbolic external rewards in SDT (Deci, Koestner, & Ryan, 1999).
Moreover, some cross-cultural investigations of SDT motivational orientation scales in Asian educational contexts demonstrated partially different patterns to those in Western contexts. Caleon et al. (2015) examined the cross-cultural applicability of the Academic Motivation Scale (AMS), grounded in SDT, among 1482 secondary school students (age range: 11-14) with a majority of Chinese background in Singapore. Apart from the support for the seven-factor model of AMS across gender and ability groups, the findings, like those in the previous two studies, rejected the hypothesized simplex structure of the ordered AMS subscales by demonstrating highly positive associations between intrinsic and extrinsic motivation dimensions. However, unlike the findings in North American settings, introjected regulation was detected to be more similar to IM than other EM dimensions among these Singapore students. All subtypes of SDT motivational orientations, except AM, had significant positive correlations with students’ academic well-being, such as teacher’s autonomy support and academic engagement in English and maths. Accordingly, these cross-cultural researchers argued that Singapore students, immersed in Asian cultural traditions that attached extra social value to individual learning, developed both forms of intrinsic and extrinsic motivation to “serve as a viable adaptive approach to enhance students’ academic well-being” (p. 939).

Taken together, the results of these studies suggest that sample subjects’ characteristics, such as age, social status, learning, and cultural contexts, may have an impact on mental organization of SDT motivational orientations, which further highlights the need for additional investigations on SDT generalization in different populations. The present study of interest pertains to high school EFL learners in China, an adolescent population who are learning English as a Foreign Language in the Chinese context. Given that this sample shares certain aspects of those populations discussed above (Ardasheva et al., 2012; Caleon et al., 2015; Vandergrift,
According to Self-Determination Theory, autonomous or more self-determined motivational orientations are able to promote vitality and eventually well-being in human activities. As this proposal was brought into the education field, scholars demonstrated great interest in unpacking the associations between varying types of SDT motivation and individual academic performance. To date, SDT research has shown that both intrinsic motivation and identified self-regulation are closely associated with successful learning outcomes (Burton, Lydon, D’Alessandro, & Koestner, 2006). In addition to intrinsic motivation, the most autonomous drive, identified regulation, in particular, has been recognized to have stronger associations with investment of effort and persistence. It is key to the effective self-regulation of behaviours that are highly valued socially but not necessarily fun, and thus a significant determinant of performance outcomes (Gagné & Deci, 2005; Ratelle, Guay, Vallerand, Larose, & Senècal, 2007).

In language motivation research, SDT motivational orientations are often correlated or regressed to a variety of language learning outcome measures to justify the magnitude of the autonomous or more self-determined individual orientations compared to the controlled or less self-determined ones. To date, the more self-determined motivational orientations are found to greatly contribute to motivational intensity (Comanaru & Noels, 2009; Noels, 2001; Noels, Clément, & Pelletier, 2001; Pae, 2008), cognitive engagement (Noels, 2005), learning attention
and effort (Chen & Kraklow, 2015), intention to continue learning a second language or persistence (Noels, 2001; 2005; Noels et al., 2001), self-confidence (Pae, 2008), self-evaluated second language competence (Noels, 2005), positive language learning attitudes (Noels, 2001; Pae, 2008), cultural adaptation (Rubenfeld, Sinclair, & Clément, 2007), language learning strategies (Vandergrift, 2005), and language achievement and test performance (Cheng et al., 2014; Pae, 2008; Wang, 2008). Noels (2001), for example, studied 322 native English-speaking university students enrolled in lower-level Spanish classes at a California university. Students’ intrinsic motivation, functioning as the integrative orientation, was closely linked to motivational intensity and language learning persistence. Intrinsic motivation, in particular, was a strong predictor of positive language learning attitudes. In another study, Comanaru and Noels (2009) examined learners’ SDT motivational orientations in relation to their effort and engagement in and outside the language classroom. Participants included 145 university students learning Chinese as an additional language in Canada. Findings demonstrated that regardless of language background, intrinsic motivation and identified regulation significantly and positively predicted more investment of learning engagement including motivational intensity and intention to continue language studies. The less autonomous motivation subtypes were unrelated with or negatively predicted language learning engagement.

While most of these studies, conducted in the second language learning context in North America, yielded results consistent with SDT predictions, language learning motivation research grounded in Self-Determination Theory in some unique settings has produced divergent results. For example, Rubenfeld et al. (2007) provided evidence contesting SDT predictions. The study investigated relationships between SDT motivational orientations and cultural adaptation among 64 adult English-as-a-Second-Language (ESL) learners in two programs: (a) General English
Program where learners study English for personal reasons, and (b) Academic English Program in which learners study English for a tangible purpose, such as admission to an English-speaking university. These two conditions represented “two naturally occurring L2 learning groups” (p. 313): an intrinsically goal-oriented group focusing on oral communication and an extrinsically goal-oriented group aiming to improve college-level language skills, respectively. Although intrinsic motivation was still found to be significantly correlated with successful acculturation, the correlation between extrinsic motivation and acculturation was positive and substantial ($r = .73$) in the extrinsically goal-oriented group and was significantly stronger than that between intrinsic motivation and acculturation. These findings suggest that extrinsic motivation may play a more significant role than contended in Self-Determination Theory among ESL learners studying English for tangible reasons.

The inconsistency in SDT research results emerged largely due to individual differences in various language learning contexts. In the settings of immigrant countries as in North America, second language learners may take on the target language learning for different purposes under different social and economic circumstances. As Noels et al. (2001) argued, “the experience of a majority group member learning the language of a minority group can be quite different than that of a minority group member learning the language of a majority group” because learners from the majority group mostly choose to learn an additional language out of personal interest, whereas a minority group member “must communicate with people from the dominant group on a regular basis” (p. 427).

On the other hand, when it comes to a different learning culture, such as the English as a Foreign Language (EFL) context in Asia, more divergences from the initial SDT predictions appear in language learning motivation findings. As an example, Chen and Kraklow (2005)
studied Taiwanese university students’ \((n = 276)\) SDT motivations in the context of a university’s ongoing effort to promote English as the medium of instruction (EMI). The research explored relationships between students’ L2 motivational orientations and English learning engagement including attention and effort in and out of the classroom. Unexpectedly, external regulation, the least self-determined extrinsic motivation, functioned as a significant minor predictor \((\beta = .137, p < .05)\) of students’ learning engagement, besides intrinsic motivation remaining a strong predictive force. The researchers, through a lens of Chinese educational tradition and culture, discussed the strong inner needs to pass examinations and to meet parents’ expectations among Chinese students to explain this divergence in results.

In addition, a growing body of research found positive significant associations between more self-determined motivational orientations and language achievement (Cheng et al., 2014; Kang, 2001; Wang, 2008; Wen, 1997). In two samples (140 and 329 participants respectively) of non-English major university students of English in China, Wang (2008) investigated the link between SDT motivational orientations and English achievement indicated by the result of the final English examination of a semester. The findings revealed a strong correlation between intrinsic motivation and identified regulation of SDT, both of which were further positively associated with English achievement. In contrast to controlled extrinsic motivation, such as external utility regulation, predicting low English achievement, more autonomous orientations significantly predicted high English achievement. Motivational orientations explained 26% of the variance in student language achievement, and thus were important predictors of foreign language achievement. Pae (2008), however, suggested that motivational orientations may be mediated by other variables, rather than being direct predictors, in foreign language achievement predictions. The researcher distinguished the SDT motivational orientations from the construct
“motivation,” and studied how those orientations affected foreign language achievement in TOEIC among 315 Korean university learners of English. Intrinsic motivational orientation was found to be the strongest determinant of students’ self-confidence and motivation to learn English as a foreign language, but only indirectly related to language achievement through the mediating effects of motivation and self-confidence. Notably, these mediating effects of other variables, such as effort and learning strategies, on language achievement were supported as well by a number of other empirical studies (Ardasheva, 2011; Bernaus & Gardner, 2008; Masgoret & Gardner, 2003).

Moreover, some scholars (Joe, Hiver, & Al-Hoorie, 2017) have contended that SDT motivational orientations may only be able to explain current or past language achievement rather than predict future achievement. In a sample of 381 Korean secondary school learners (age range: 13-18) of English as a foreign language, Joe and colleagues (2017) examined the SDT motivational orientations in association with a number of antecedent and outcome variables. They employed two separate examination results to measure students’ English achievement at different periods, one from the previous year exam six months before the study and the other from the final exam taken four months after the study. In their findings, although language achievement was initially predicted by identified regulation and perceived competence, after controlling for prior achievement, motivational orientations were absent from the significant determinants of future achievement. Hence they pointed out the weakness in many studies using “retrospective reports of prior achievement as the criterion measure” (p. 140), and argued that this method might lead to interpretational issues.

In summary, the results of these studies on SDT motivational orientations in relation to language learning outcomes unfolded two dimensions of associations between affective and
outcome variables for further investigation. First, while the role of more self-determined motivational orientations in promoting academic well-being has been empirically supported in diverse educational settings, less self-determined or controlled SDT motivational orientations may display varying functions, subject to external influences of learning goals and contexts. Second, a simple linear relationship between motivational orientations and language achievement may be less likely to be observed; rather, a number of learning variables, such as motivational intensity, learning persistence, learning strategies, and language confidence, would be working together with motivational orientations as contributors to students’ language achievement. Thus there is a need for additional research to explore the subtle relationships within the dimensions of the SDT motivation construct and beyond with a range of language learning outcomes, particularly, among language learners in different learning contexts from those where the SDT framework was initiated.

**Language Learning Outcome Variables in Motivation Studies**

In language learning motivation studies, researchers have been attempting to detect the relationship between motivational orientations and learning outcomes grounded in a variety of frameworks. Findings of these studies indicated that motivational orientations were associated with a range of language learning outcomes.

In this section, I reviewed 10 studies investigating the relationship between motivational orientations and language learning outcomes as variables. These outcome variables include language learning engagement, community engagement, language course achievement, large-scale language test performance, learners’ attitudes toward learning an additional language, and culture-related outcomes. In addition, I analyzed the contexts where the outcome variables were
examined and the instruments used for outcome measurement. The review aimed to provide a foundation for the rationale for the outcome variables to be examined in the present thesis study.

**Language learning engagement and community engagement.** Language learners’ engagement as an outcome of language learning has been studied in two subsets: learning engagement and community engagement. First, learning engagement has been extensively used as an effective outcome indicator in language learning motivation studies. Chen and Kraklow (2015) examined the relationship among three types of motivation (intrinsic motivation, IM; identified regulation, IR; and external regulation, ER) proposed in Self-Determination Theory (SDT; Deci & Ryan, 1985) and English learning engagement (ENGAGE) among 276 Taiwanese university students. The study employed students’ self-perceived attention to English learning activities (e.g., ‘I am always very attentive in English classes.’) as an indicator of engagement on a 6-point English Learning Engagement Scale \((n = 4\) items). IM and ER were discovered to be significant predictors for English learning engagement.

Similarly, a study on 145 language learners of Chinese by Comanaru and Noels (2009) showed that students who found the target language learning personally meaningful and fun were more engaged in the learning process. Compared to the English Learning Engagement Scale used in Chen and Kraklow’s (2015) study, a different measure was adopted for learning engagement components, including effort, motivational intensity, and learning persistence. The study used items such as “I make a point [of] trying to understand all the Chinese I see and hear” adapted from the Motivational Intensity Index \((n = 10\) items; Gardner, Tremblay, & Masgoret, 1997) for a learning engagement variable and an assessment scale on learners’ intentions to continue learning \((n = 5\) items; Noels et al., 1999) for its learning persistence variable.
The second subset, community engagement, as a language learning outcome, is commonly found in heritage language studies (Noels, 2001; 2005; Comanaru & Noels, 2009). In these studies, a community engagement variable was explored in terms of learners’ frequency and quality of contact with the heritage language community and heritage language use by means of various scenarios. Intrinsic motivation positively fostered target language community interactions, which was notably important in motivated learning for heritage language learners, as opposed to foreign language learners.

In general, learning engagement and community engagement are two types of engagement variables studied in different contexts. Learning engagement pertains to learners’ self-determination in direct language learning settings, such as the language classroom, while community engagement extends beyond the direct learning environment and takes place in the process of intergroup contact. As a result, community engagement variables are usually examined in the heritage language learning context, where heritage language learners have more access to the target language community, compared to foreign language learners. However, both types of engagement are highly context-based, where teachers’ or community members’ support for autonomy may have great impact on learners’ perceptions of self-determination for engagement.

**Language achievement.** As well, language achievement is a commonly employed outcome variable in language motivation studies. Hernandez (2008), guided by Gardner’s (1985) Integrative Motivation Theory, investigated integrative motivation as a predictor of achievement in the Spanish foreign language classroom by conducting a survey among 130 undergraduates completing a fourth-semester Spanish course at one university in the United States. GPA and previous years of studying Spanish were collected for demographic information related to
language learning achievement variables. Final course grades and final examination scores were used for direct achievement indicators. The researcher also examined students’ desire and intention to continue Spanish study after the courses, similar to the concept of learning persistence studied in Comanaru and Noels’ (2009) work, but only employed self-reported “Yes / No” questions in questionnaires. Distinctively in this study, a simulated oral proficiency interview (SOPI) was introduced by the end of the course, the scores of which were used as one indicator for language achievement. The study demonstrated that integrative motivation was a significant predictor of language achievement in the foreign language classroom, including SOPI scores, course and final exam scores, and students’ desire in continuing language study and intention to major in foreign language.

Final grades or final exam scores of an additional language course, in particular, are effective language achievement indicators, and can be found in language learning motivation studies guided by different theoretical frameworks. In research on 59 French Canadian learners of English by Noels, Clément, and Pelletier (2001), which confirmed the pattern of correlation hypothesized by SDT among antecedents, motivational orientations, and language learning outcomes, one indicator of the achievement variable was the final course grades in an English immersion university program.

In another case of using course grades for language learning achievement, illuminated by the recently proposed L2 Motivational Self System (Dörnyei, 2005), Dörnyei and Chan (2013) conducted an analysis of future L2 self-images, sensory styles, and imagery capacity among 172 Cantonese speaking students learning English and Mandarin as a second language in Hong Kong. Learners’ intended effort and self-reported course grades were adopted respectively for subjective and objective learning outcome indicators. The study revealed a positive link in ought-
to self-motivation to intended effort, but no significant association between the ought-to self-construct and actual course grades.

As is seen, course grades are employed as a relatively more objective language learning achievement indicator compared with learners’ self-perceived outcomes. These grades are easy to obtain and measure in a variety of research contexts. However, in many circumstances, the self-report form of data collection for course grades might discount their reliability, which consequently could set a limitation to research, as put forth in Dörnyei and Chan’s (2013) L2 self-system investigation.

In addition to the reliability of course grades, another concern is pertaining to their validity. First, course grades are usually an indicator of the overall performance in a language course rather than that of language proficiency. Course grades may be comprised of course attendance and assignment performance as well as the mid- and final course exam performance. Even for the course exams alone, they are designed and implemented by course instructors based on learning materials. The results may not be able to effectively assess learners’ language skills, but only to provide a reference for short-term learning goal attainment.

**Large-scale language test performance.** Large-scale language test performance, including learners’ test involvement and test scores, is employed as well as a salient outcome variable in language learning motivation studies. Haggerty and Fox (2015) surveyed 341 South Korean young adolescents learning English as a Foreign Language, aiming to detect the relationship between language testing experience as an outcome variable and second language motivation. Students’ self-reported time investment by hours per week for test preparation and test (TOEFL or TEPS) taking experience with Yes/No questions were used as learning outcome indicators. Identified L2 motivational factors, suggested in the L2 Motivational Self System
framework, were proved significantly associated with time investment and test enrollment. However, only learners’ ought-to L2 self/instrumentality orientation was independent, implying an impact of the test-oriented learning context on L2 learners.

The relationship among large-scale high-stakes language test score, test anxiety, and motivational orientations was thoroughly examined across three different testing contexts by Cheng et al. (2014). The researchers studied 255 Canadian Academic English Language (CAEL) Assessment candidates in Canada, 493 College English Test (CET) candidates in China, and 533 General English Proficiency Test (GEPT) candidates in Taiwan. The test scores were used for indicating language learning outcomes. Intrinsic motivation significantly predicted high scores in test performance, whereas external regulation and high anxiety predicted low scores. The research also studied candidates’ test purpose and test importance, and revealed social and testing contextual impacts on language test performance.

Large-scale test performance, or test score in particular, is recognized as an important language learning outcome variable, given the fact that it is able to offset the limitation of self- and teacher-perceived learning outcomes in terms of assessment objectivity and effectiveness. However, it is rather difficult for researchers to access a large-scale test result database for privacy and confidentiality concerns. In addition, to use the large-scale test-related indicators requires the precondition of a test-oriented social or learning context, which does not allow a wide application of such an outcome variable in various research contexts.

**Learners’ attitudes toward learning an additional language and culture-related outcome variables.** Learners’ attitudes toward learning an additional language, due to their nature of a mediator variable coordinating motivational orientations with language learning outcomes, are not regarded as typical language learning outcomes in motivation studies. In the
study of English-speaking learners of Spanish \((n = 322)\) at a California university, learners’ attitudes toward learning Spanish were examined on a 4-item scale adapted from previous motivation studies (Noels, 2001). The results confirmed that intrinsic motivation was most predictive of positive attitudes, compared to integrative orientation, which was most predictive of intergroup variables.

Culture elements are closely concerned with language learning, so some language learning motivation studies include culture-related variables as learning outcomes. In the domain of English as a Second Language (ESL), researchers have shown great interest in language learners’ acculturation (or cultural adaptation) process as a result of language learning. Rubenfield, Sinclaire, and Clément (2007) studied the role of motivation and goal congruence associated with acculturation on 64 East Asian students in two ESL programs with different goal aspirations. They used the Vancouver Index of Acculturation (Ryder et al., 2000), a 6-point scale with 20 items, to examine the acculturation variable. As a result, acculturation to a new culture was detected to be closely related with consistency between motives and goals.

As a counterpart to acculturation in the domain of ESL, ethnic identification is a culture-related language learning outcome identified in heritage language studies. Noels (2001; 2005) investigated university students learning respectively Spanish and German as a heritage/non-heritage language in several locations across the United States and Canada. Ethnic identity was adopted as an intergroup variable facilitating understanding of heritage language learners’ community engagement. The researcher employed the Situated Ethnic Identity Scale (Clément & Noels, 1992) in both studies to provide subjects with five scenario items measured on a 5-point scale. Thus, the subjects’ responses to specific situations reflected the extent of their self-identification in the target language ethnic community.
Given the situation-specific nature of culture-related language learning outcomes, researchers tend to commit more effort to the crafting of the research instrument, such as introducing scenarios instead of simply using question items as is shown in Noels’ (2001; 2005) studies. However, the attempt to examine acculturation or ethnic identification is still faced with challenges due to the complexity of socio-psychological impacts on self-perceived cultural identification.

**A conclusion on the outcome variables to be examined.** To summarize, learning engagement and language achievement are the most commonly used language learning outcome variables in the domain of language learning motivation research. These two types of learning outcomes are widely available regardless of research contexts. They have shown close links to motivation variables, notably in SDT-guided research. Large-scale language test performance also displays distinct relationships with motivational orientations; however, the outcome indicators have contextual characteristics, as was found in Cheng et al.’s (2014) study, and they are restricted to test-oriented language learning environments. Learners’ attitudes and culture-related learning outcomes can be used in language learning motivation research as well, but measures for these variables need to be situation-specific for the purpose of rigour and accuracy, because personal attitudes and cultural awareness are usually involved with individual differences affected by socio-psychological factors.

Considering the convenience of data collection and the high school EFL classroom context in the present study, I examined students’ English language learning engagement and English language achievement including previous years of learning English as a Foreign Language, self-perceived English language proficiency, and a test score from their English course, as language learning outcome variables.
Chapter 3 Methods

Research Design

This study adopted a questionnaire to examine students’ motivational orientations in learning English and the relationship among motivational orientations, learning engagement, and language achievement. The primary purpose of the current study is to test Self-Determination Theory (SDT; Deci & Ryan, 1985) with a new population of high school English-as-a-Foreign-Language (EFL) students, and within a new context of China mainland, and to explore SDT motivational orientations in relation to language learning outcomes. Thus a descriptive and predictive nonexperimental quantitative research design is optimal in that this research seeks to provide an accurate picture of the characteristics of a given population (Johnson & Christensen, 2014). The questionnaire method of data collection is a widely used research design in the realm of education to describe attitudes, beliefs, and opinions. Hence this method is deemed appropriate to collect participants’ responses on English learning motivational orientations, learning engagement, and language achievement.

Prior to the administration of the questionnaire, this study received clearance (See Appendix A) in September 2017 from the General Research Ethics Board (GREB) at Queen’s University, to help ensure participants are aware of the risks and benefits of the research. All participants provided free and informed consent.

This chapter includes a description of the participants, an overview of the employed instrument, the data collection procedures, and the data analyses used to address the three research questions.
Participants

Chinese students attend elementary school from Grades 1 to 6, middle school ranges from Grades 7 to 9, and high school from Grades 10 to 12. The participants included 391 high school students from eight Grade 11 classes (15-18 years of age) at one public secondary school in the capital city of a province in Mainland China. This school is rated among the top secondary schools in the city based on its teaching quality and school dynamics. These participants were recruited in their existing English classrooms by means of convenience sampling. The choice of eleventh graders is justified given the fact that eleventh graders are at the middle phase of their three-year senior high school. They are less likely to be affected by the mental and physical adjustments in the beginning year and the national large-scale entrance examination to university and graduation pressures in the final year (Xiang et al., 2017). The detailed demographic information is presented in Chapter 4.

Instrument

A questionnaire (See Appendix B & C) comprising four sections was used for this study: (a) demographics, (b) English language learning motivational orientation scale, (c) English language learning engagement scale, and (d) self-evaluation scale for English language proficiency. The demographic section was used to collect basic information about participants. The following three scales make up the main body of the questionnaire, aiming to measure participants’ motivational orientations, learning engagement, and language achievement respectively in the English classroom to address the three research goals proposed at the beginning of this thesis study. In addition, the score of a diagnostic test in English course, measuring reading and writing skills, was collected as one of the three indicators for language achievement, besides the previous years of learning English and the self-perceived English
language proficiency as measured in the questionnaire. The test took place right before the questionnaire in the English classroom.

The questionnaire was initially developed in English. However, as the target participants speak Chinese as their first language, understanding the questionnaire items may be hindered if the questionnaire were administered in English, due to participants’ insufficient proficiency in English. Thus the questionnaire was translated into Chinese (simplified characters) so that participants are able to comprehend the meanings of the items accurately. To ensure the accuracy of the translation, a pilot study was conducted, inviting a small number of native Chinese speakers (n=5) to complete the questionnaire and to provide feedback on the appropriateness of the translation.

Section One: Demographics consists of seven items, i.e., participants’ name, student number, age, sex, start grade of learning English, time spent on learning English after school, and perceived parents’ expectation on their children’s English achievement. Participant name and student number were to be used to link the questionnaire responses to their test score. Participant age and start grade of learning English was used to calculate their previous years of learning English as one of the three indicators for language achievement. Time spent on after school learning and perceived parents’ expectation on English achievement functioned as contextual variables taken into account in interpreting results of the present study. After school learning time was measured by 4-point Likert scale with time spans from 1 = “0-30 minutes” to 4 = “more than 120 minutes”. Perceived parental expectation was also measured by 4-point Likert scale with degrees from 1 = “not at all” to 4 = “very high”.

Section Two: English Language Learning Motivational Orientation Scale (21 items) was adapted from Language Learning Orientation Scale- Intrinsic Motivation, Extrinsic Motivation,
and Amotivation Subscales (LLOS-IEA; Noels, Pelletier, Clément, & Vallerand, 2000) grounded in Self-Determination Theory (SDT; Deci & Ryan, 1985). The LLOS-IEA is a 7-point Likert scale (21 items) that measures second language learning reasons based on three constructs with seven subconstructs of SDT motivational orientations (Vallerand et al., 1993, 1994; see Figure 3). The scale assesses three types of intrinsic motivation (IM), including IM-stimulation (3 items), IM-accomplishment (3 items), and IM-knowledge (3 items); three types of extrinsic motivation, including external regulation (3 items), introjected regulation (3 items), and identified regulation (3 items); and amotivation (3 items).

Figure 3. The SDT Motivational Orientations Measured by LLOS-IEA, with Three Constructs and Seven Subconstructs

The adaptation was needed because the participants in this study differ in age and learning context from the sample used in the scale development study (Noels et al., 2000). Participants in their study were college-age (average age 22; age range: 18-50) Anglo-Canadian learners of French at a French-English bilingual university in Canada. Due to the age of the high school participants in this study, a Likert scale with 5 points was employed. In addition, the
items were altered to make them appropriate to the EFL context in China. Participants responded to items such as “I study English because I think it is good for my personal development” and “I study English because I have the impression that it is expected of me” to indicate on a 5-point Likert scale the extent to which a proposed reason corresponded with their reasons for learning English as a Foreign Language, from 1 = “Does not correspond” to 5 = “Corresponds exactly.” Thus a higher score for each item meant a higher level of correspondence between the proposed reason and the participants’ reason for learning English. An acceptable internal consistency, ranging between .67 and .88, has been reported for all subscales of LLOS-IEA (Noels et al., 2000).

Section Three: English Language Learning Engagement Scale (10 items) was adapted from the Motivational Intensity Scale as part of the Attitude/ Motivation Test Battery Items (AMTB; Gardner, Tremblay, & Masgoret, 1997). The scale was originally used to address one construct, namely motivational intensity. In the current study, this scale was employed to determine the extent of the participants’ learning engagement in their English course. Participants responded to five positively worded items, such as “I make a point of trying to understand all the English I see and hear,” and five negatively worded items, such as “I don’t pay too much attention to the feedback I receive in my English class” in order to indicate on a 5-point Likert scale their degree of English learning engagement, from 1 = “Does not correspond” to 5 = “Corresponds exactly.” A high score for a positively coded item represented a high level of positive English learning engagement; however, a high score for a negatively coded item indicated the opposite. The scale demonstrated an acceptable internal consistency with Cronbach’s alpha .76 (Fabrigar, Wegener, MacCallum, & Strahan, 1999; Gardner et al., 1997). Items were randomly arranged in the questionnaire for this study.
Section Four: Self-Evaluation Scale for English Language Proficiency (5 items) assessed participants’ self-perceived English proficiency as one indicator for language achievement in their English course. The scale comprised measures of overall proficiency and proficiencies in four basic language skills of listening, speaking, reading, and writing, using a numerical rating scale (NRS) from 1 to 5. A high score for each item suggested a high level of self-rated overall English proficiency or proficiency in a certain language skill.

**Data Collection**

Data collection took place in students’ English classes in the form of a paper-based questionnaire. I went to China in September 2017, introduced my study, invited potential participants, and administered the questionnaire in Mid-October immediately after an English diagnostic test at the participating school. With the consents of the school principal and the English teachers in Grade 11, I gained access to students in their classrooms. Before being instructed to complete the questionnaire, the students were presented with the Letter of Information (See Appendix D) which included necessary information about the study, such as voluntary participation, confidentiality policy, freedom of withdrawal, and compensation. Only when participants agreed to take part in the study did they proceed to write the questionnaire.

The questionnaire took approximately 15 minutes to complete. Teachers were away from the classroom during the questionnaire to reduce potential power dynamics over the participating students.

The participants’ more recent English test score was obtained from their English teachers with the consent of the participants themselves and the school administration. The test score was used as one achievement indicator along with self-perceived English proficiency rating and previous years of learning English.
Data Analyses

Participants’ questionnaire responses and their English test score were entered into the Statistical Package for Social Sciences (SPSS Version 24). Among the 391 paper-based questionnaires obtained from the participants, one questionnaire was excluded because its missing data exceeded 50% of the total answers (Field, 2009; Tabachnick & Fidell, 2013). Therefore, 390 questionnaires were used in data analyses.

Participants’ sex was coded, male as 1, and female as 2. The initial grade that participants began learning English was numerically coded from 1 to 11, representing Kindergarten through Grade 10, respectively. They were recoded into initial ages of learning English based on the education policy (MOE Document, 2001) that it is mandatory for the six-year-old to enter Grade 1 in elementary school. Thus previous years of learning English was calculated by participants’ current age subtracting their initial age of learning English. Time devotion to learning English after school was clustered into four time spans: “0-30 minutes”, “more than 30 minutes up to 60 minutes”, “more than 60 minutes up to 120 minutes”, and “more than 120 minutes”, and they were coded as 1, 2, 3, and 4 respectively. Perceived parental expectation was classified into 4 scales based on degree: not at all, somewhat, high, and very high, and they were coded as 1, 2, 3, and 4 respectively. Ratings on motivational orientation and learning engagement measures were coded from 1 to 5 according to the degree of correspondence with the participants’ situation. The ratings of the negatively worded engagement items 1, 4, 5, 6, and 10 were reversed according to the Motivational Intensity Scale’s instruction. Participants self-rated their English proficiency on five levels: not good at all, not good, medium, good, and exceptional, which were coded as 1, 2, 3, 4, and 5 respectively. The English course test comprised two parts including reading (60 points) and writing (40 points) with a full mark of 100 points.
One participant double rated for one self-perceived speaking proficiency item. A more reasonable rating was retained based on the participant’s self-rating on the other language skill items. Six participants double rated on one of the motivational orientation items. For each of them, one of the two rated scores was retained based on their rating of the other items for measuring the same motivational orientation. A data validation process was run in SPSS to ensure the accuracy of data input in the spreadsheet.

Missing data were carefully examined. Four of the five missing values in sex variable were retrieved from the participants’ teacher. Thus, there was missing data for sex for only one participant. Missing data analyses, i.e., Little’s MCAR test in SPSS, were used to analyze the pattern of missingness. The results indicated a pattern of missing completely at random (sig. = .193), with no more than 1% of the questionnaire responses missing and 3.3% of the English test score missing due to participants’ absence in writing the test. Thus either the strategy of deletion or imputation was applicable (Garson, 2015; Tabachnick & Fidell, 2013). To maximally use the collected data, the strategy of imputation was employed. I imputed 20 variables using median. Therefore, after imputation, I had 390 valid cases with all the variable except one missing value for sex. As sex is a contextual variable in this study, the missing value in sex does not affect the following analyses.

First in data analyses, descriptive statistics (e.g., means, standard deviations, confidence intervals, skewness and kurtosis) were conducted. The negatively worded engagement items were not recoded at this stage of descriptive analysis because their means could be explained reasonably by the extent of correspondence to the subject’s situation. However, they were reversely coded in the following analyses as all the 10 items are supposed to measure one single construct as proposed by Gardner, Tremblay, and Masgoret (1997).
Second, to address the first research question, exploratory factor analysis (EFA) was conducted to explore latent variables, i.e., motivational orientations, as measured by Self-Determination Theory (SDT), in the Chinese high school sample. The purpose of factor analyses is not merely reduction of variables but to understand their structures, and all the variables are assumed to be correlated in some way. Therefore, the exploratory factor analyses were conducted with the extraction technique of principal axis factoring (PAF) followed by an oblique rotation method of direct oblimin (Field, 2009; Loewen & Gonulal, 2015). The criteria for retaining the factors include Kaiser’s criterion (i.e., the eigenvalue above 1.0), the cumulative percentage of explained variance (approximately 60%), and visually examining the scree plot (Fabrigar & Wegener, 2012; Fabrigar et al., 1999; Field, 2009; Loewen & Gonulal, 2015). Exploratory factor analyses were also conducted on learning engagement and self-perceived language achievement measures. Internal Consistency values (Cronbach’s alpha) were calculated for each factor.

Third, Pearson product-moment correlation coefficients were calculated to investigate the bivariate relationships among all the identified variables of motivational orientations, learning engagement, and language achievement. This step provided results for discussing the bivariate associations among motivational orientations on the theoretically proposed Self-Determination Theory continuum. In addition, correlations among all potential independent variables, i.e., motivational orientations and learning engagement variables, were examined to check for any multicollinearity problem in the following multiple regression analyses. The correlation coefficients also assisted with the interpretation of the multiple regression analyses, as suggested by Tabachnick and Fidell (2012).

Lastly, multiple regression analyses were performed to investigate the relationship
between multiple independent variables and one dependent variable (Field, 2009; Tabachnick & Fidell, 2013). To address the second research question, standard multiple regressions were conducted with motivational orientations as the independent variables and learning engagement as the dependent variable. The results indicated the extent to which motivational orientations are related to language learning engagement. To address the third research question, motivational orientations and learning engagement variables were entered as independent variables to standard regression models with language achievement indicators as dependent variables respectively. The results suggested the unique contribution of motivational orientations and learning engagement variables to language achievement. In addition, the contributive force of motivational orientations and learning engagement was compared by means of hierarchical regression analyses. All the results in detail are presented in Chapter 4.
Chapter 4 Results

This chapter reports the results of data analyses to answer the three research questions. Descriptive statistics and factor analyses were performed to address the first research question. Correlation analyses were then conducted to investigate the bivariate relationships among the identified motivational orientations, the learning engagement variables, and the achievement variables. Correlations among all potential independent variables, i.e., motivational orientations and learning engagement, were examined to check for any multicollinearity problem in the following multiple regression analyses. Multiple regression analyses were performed first with the learning engagement variables as dependent variables, and second with the achievement indicators as dependent variables. Results of the correlation and multiple regression analyses are presented to address the second and third research questions respectively.

Descriptive Analyses

Demographics. Participants included 390 high school students between the ages of 15 and 18, $M = 16.22$, $SD = .52$, 95% CI [16.17, 16.27]. Among the 390 participants, there were 173 males (44.4%) and 216 females (55.4%). Their time spent in learning English after school was measured on a 4-Likert point scale, more than 120 minutes (4), more than 60 minutes up to 120 minutes (3), more than 30 minutes up to 60 minutes (2), and 0-30 minutes (1). The reported time was approximately 30 to 60 minutes, $M = 1.50$, $SD = .71$, 95% CI [1.43, 1.57]. Participants’ perceived parental expectation on their English learning achievement was also measured on a 4-point Likert scale, very high (4), high (3), somewhat (2), and not at all (1). The result suggested the parental expectation was moderately high on average, $M = 2.79$, $SD = .71$, 95% CI [2.72, 2.86].
Prior to being involved in this study, the participants had spent between 3 and 13 years learning English as a Foreign language, $M = 9.91$, $SD = 1.42$, 95% CI [9.77, 10.05] (see Table 1). The total score for the English diagnostic test ranged from 13.5 to 89.5 (out of a maximum of 100), $M = 58.94$, $SD = 14.02$, 95% CI [57.55, 60.34]. The self-perceived English proficiency test consists of 5 items that include: self-perceived reading, writing, listening, speaking, and overall proficiency. Each of these self-perceived items were measured on a 5-Likert point scale, exceptional (5), good (4), medium (3), not good (2), and not good at all (1). The participants reported higher mean levels for reading (3.01) and listening (3.09) proficiency and lower levels for writing (2.74) and speaking (2.71). The self-perceived English language proficiency results corresponded with the language acquisition characteristic that learners, in the process of learning a new language, usually begin with receptive understanding of new items, and later move on to productive use (Davis, 1980; Van Parreren, 1983). Therefore, students tend to feel more confident in their receptive skills of reading and listening than the productive skills of speaking and writing.

Table 1  
Descriptive Statistics for Three English Language Achievement Indicators

<table>
<thead>
<tr>
<th></th>
<th>$M$ ($SD$)</th>
<th>95% CI</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous years of learning English</td>
<td>9.91(1.42)</td>
<td>[9.77, 10.05]</td>
<td>-.84</td>
<td>1.11</td>
</tr>
<tr>
<td>Diagnostic test total (max score = 100)</td>
<td>58.94 (14.02)</td>
<td>[57.55, 60.34]</td>
<td>-.54</td>
<td>.31</td>
</tr>
<tr>
<td>Self-perceived reading</td>
<td>3.01 (.85)</td>
<td>[2.92, 3.09]</td>
<td>-.29</td>
<td>.31</td>
</tr>
<tr>
<td>Self-perceived writing</td>
<td>2.74 (.94)</td>
<td>[2.64, 2.83]</td>
<td>-.12</td>
<td>-.22</td>
</tr>
<tr>
<td>Self-perceived listening</td>
<td>3.09 (1.02)</td>
<td>[2.99, 3.19]</td>
<td>-.04</td>
<td>-.37</td>
</tr>
<tr>
<td>Self-perceived speaking</td>
<td>2.71 (1.02)</td>
<td>[2.61, 2.81]</td>
<td>-.15</td>
<td>-.33</td>
</tr>
<tr>
<td>Self-perceived overall</td>
<td>2.93 (.79)</td>
<td>[2.85, 3.01]</td>
<td>-.42</td>
<td>-.96</td>
</tr>
</tbody>
</table>
**Motivational Orientations.** An examination of the means, standard deviations, confidence intervals, skewness, and kurtosis values for the items in the English Language Learning Motivational Orientations scale suggested a normal distribution underlying the responses, as is shown in Table 2. Only amotivation items (Items 5, 13, and 16) were significantly skewed and kurtosed, ranging from 1.93 to 6.21. These amotivation items also displayed the lowest means (1.59, 1.39, and 1.49 respectively), which indicated that the participants, in general, felt motivated regarding English learning.

By contract, all the three items (Items 7, 15, and 21; see Table 2) with the highest means (4.06, 4.14, and 3.90 respectively) intended to measure identified regulation - the most autonomous extrinsic motivational orientation. The result revealed that a majority in this sample of Chinese high school students possessed a strong self-determined motivational orientation in learning English.
Table 2
*Descriptive Statistics for English Language Learning Motivational Orientations*

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>95% CI</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. For the pleasure I experience when surpassing myself in my English studies.</td>
<td>3.42 (1.24)</td>
<td>[3.30, 3.55]</td>
<td>-0.32</td>
<td>-0.89</td>
</tr>
<tr>
<td>2. For the “high” I feel when hearing English spoken.</td>
<td>3.18 (1.22)</td>
<td>[3.06, 3.30]</td>
<td>-0.06</td>
<td>-0.88</td>
</tr>
<tr>
<td>3. In order to get a more prestigious job later on.</td>
<td>3.60 (1.15)</td>
<td>[3.48, 3.71]</td>
<td>-0.46</td>
<td>-0.61</td>
</tr>
<tr>
<td>4. Because I have the impression that it is expected of me, e.g., from my teachers and my parents.</td>
<td>2.85 (1.21)</td>
<td>[2.73, 2.97]</td>
<td>0.13</td>
<td>-0.90</td>
</tr>
<tr>
<td>5. I don’t know; I can’t come to understand what I am doing studying English.</td>
<td>1.59 (1.02)</td>
<td>[1.49, 1.69]</td>
<td>1.93</td>
<td>3.10</td>
</tr>
<tr>
<td>6. Because I would feel ashamed if I couldn’t speak to my friends from the English community in their native tongue.</td>
<td>2.94 (1.28)</td>
<td>[2.82, 3.07]</td>
<td>-0.03</td>
<td>-1.06</td>
</tr>
<tr>
<td>7. Because I choose to be the kind of person who can speak English.</td>
<td>4.06 (1.09)</td>
<td>[3.96, 4.17]</td>
<td>-1.12</td>
<td>0.57</td>
</tr>
<tr>
<td>8. For the “high” feeling that I experience while speaking English.</td>
<td>3.19 (1.19)</td>
<td>[3.07, 3.31]</td>
<td>-0.08</td>
<td>-0.78</td>
</tr>
<tr>
<td>9. For the enjoyment I experience when I grasp a difficult construct in English.</td>
<td>3.34 (1.20)</td>
<td>[3.22, 3.46]</td>
<td>-0.26</td>
<td>-0.78</td>
</tr>
<tr>
<td>10. In order to have a better salary later on.</td>
<td>3.39 (1.24)</td>
<td>[3.26, 3.51]</td>
<td>-0.30</td>
<td>-0.86</td>
</tr>
<tr>
<td>11. For the pleasure I get from hearing English spoken by native English speakers.</td>
<td>2.96 (1.27)</td>
<td>[2.83, 3.08]</td>
<td>0.08</td>
<td>-1.01</td>
</tr>
<tr>
<td>12. Because I would feel guilty if I didn’t know the language of English.</td>
<td>2.49 (1.26)</td>
<td>[2.36, 2.62]</td>
<td>0.46</td>
<td>-0.83</td>
</tr>
<tr>
<td>13. Honestly, I don’t know; I truly have the impression of wasting my time in studying English.</td>
<td>1.39 (0.83)</td>
<td>[1.31, 1.48]</td>
<td>2.48</td>
<td>6.21</td>
</tr>
<tr>
<td>14. For the satisfaction I feel when I am in the process of accomplishing difficult exercises in English.</td>
<td>3.29 (1.16)</td>
<td>[3.18, 3.41]</td>
<td>-0.14</td>
<td>-0.73</td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Mean</td>
<td>CI</td>
<td>t</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>------</td>
<td>-------------</td>
<td>-----</td>
</tr>
<tr>
<td>15.</td>
<td>Because I think it is good for my personal development.</td>
<td>4.14</td>
<td>[4.05, 4.23]</td>
<td>-.80</td>
</tr>
<tr>
<td>16.</td>
<td>I cannot come to see why I study English, and frankly, I don’t give a damn.</td>
<td>1.49</td>
<td>[1.41, 1.58]</td>
<td>1.96</td>
</tr>
<tr>
<td>17.</td>
<td>For the satisfied feeling I get in finding out new things in the process of learning English.</td>
<td>3.06</td>
<td>[2.95, 3.17]</td>
<td>-.01</td>
</tr>
<tr>
<td>18.</td>
<td>To show myself that I am a good student because I can speak English.</td>
<td>2.46</td>
<td>[2.35, 2.58]</td>
<td>.44</td>
</tr>
<tr>
<td>19.</td>
<td>For the pleasure I experience in knowing more about the literature of the English group.</td>
<td>2.54</td>
<td>[2.42, 2.66]</td>
<td>.50</td>
</tr>
<tr>
<td>20.</td>
<td>Because I enjoy the feeling of acquiring knowledge about the English community and their way of life.</td>
<td>2.96</td>
<td>[2.83, 3.09]</td>
<td>.12</td>
</tr>
<tr>
<td>21.</td>
<td>Because I choose to be the kind of person who can speak more than one language.</td>
<td>3.90</td>
<td>[3.79, 4.01]</td>
<td>-.85</td>
</tr>
</tbody>
</table>
Learning engagement. As for English learning engagement (see Table 3), Items 2, 7, and 9 displayed the highest means (3.03, 3.33, and 3.13 respectively) among the engagement items. These three items were all positively worded items tapping the effort put in learning English, which indicated that the participants invested a large amount of time and energy engaged in their English study. On the other hand, the lowest means (1.82 and 1.78 for Items 5 and 6 respectively) occurred to negatively worded items detecting to what extent students pay attention to their English teacher’s instruction and feedback. The result suggested that these students attached much importance to teachers’ classroom instruction and feedback in assignments.
Table 3
Descriptive Statistics for English Language Learning Engagement

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>95% CI</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I don’t pay too much attention to the feedback I receive in my English class.</td>
<td>2.36 (1.05)</td>
<td>[2.25, 2.46]</td>
<td>.48</td>
<td>-.30</td>
</tr>
<tr>
<td>2. I really work hard to learn English.</td>
<td>3.03 (1.03)</td>
<td>[2.93, 3.13]</td>
<td>.10</td>
<td>-.31</td>
</tr>
<tr>
<td>3. When I have a problem understanding something we are learning in my English class, I always ask the instructor for help.</td>
<td>2.76 (1.12)</td>
<td>[2.65, 2.88]</td>
<td>.24</td>
<td>-.58</td>
</tr>
<tr>
<td>4. I can’t be bothered trying to understand the more complex aspects of English.</td>
<td>2.13 (1.08)</td>
<td>[2.02, 2.24]</td>
<td>.82</td>
<td>.07</td>
</tr>
<tr>
<td>5. I don’t bother checking my corrected assignments in my English courses.</td>
<td>1.82 (1.05)</td>
<td>[1.72, 1.93]</td>
<td>1.38</td>
<td>1.42</td>
</tr>
<tr>
<td>6. I have a tendency to give up when our English instructor goes off on a tangent.</td>
<td>1.78 (1.13)</td>
<td>[1.67, 1.89]</td>
<td>1.50</td>
<td>1.43</td>
</tr>
<tr>
<td>7. I make a point of trying to understand all the English I see and hear.</td>
<td>3.33 (1.12)</td>
<td>[3.22, 3.45]</td>
<td>-.17</td>
<td>-.70</td>
</tr>
<tr>
<td>8. When I am studying English, I ignore distractions and stick to the job at hand.</td>
<td>2.88 (1.10)</td>
<td>[2.78, 2.99]</td>
<td>.08</td>
<td>-.55</td>
</tr>
<tr>
<td>9. I keep up to date with English by working on it almost every day.</td>
<td>3.13 (1.11)</td>
<td>[3.02, 3.24]</td>
<td>-.01</td>
<td>-.75</td>
</tr>
<tr>
<td>10. I tend to approach my English homework in a random and unplanned manner.</td>
<td>2.37 (1.21)</td>
<td>[2.25, 2.49]</td>
<td>.70</td>
<td>-.36</td>
</tr>
</tbody>
</table>
Factor Analyses

Factor analyses using the principal axis factoring (PAF) analysis extraction method and direct oblimin rotation were conducted on the items of: English language learning motivational orientation (Items 1-21 in Section 2), English language learning engagement (Items 1-10 in Section 3), and the self-evaluation for English language proficiency (Items 1-5 in Section 4). The purpose of factor analyses in the present study was not merely to reduce the number of variables but to understand their structures while allowing that all the variables were correlated in some way, which is commonly seen in second language learning research (Loewen & Gonulal, 2015). Therefore, the principal axis factoring (PAF) extraction method with oblique rotation was an optimal factor analysis technique to achieve the above purpose (Field, 2009). Kaiser’s criterion, cumulative percentage of explained variance, and scree plots (See Appendix E) were used to assist with the decision regarding the number of factors to retain. The results are presented in Table 4, Table 5, and Table 6. The internal consistency (Cronbach’s alpha) for each factor was also calculated.

Twenty-one items of English language learning motivational orientations were analyzed. In the preliminary test, the data was tested for the appropriateness of factor analyses with a Kaiser-Meyer-Olkin (KMO) value of 0.87, which exceeds the recommended value of 0.6 (Kaiser, 1970; 1974). The Bartlett’s Test of Sphericity also indicated statistical significance (p < .05). The criteria for retaining factors include the eigenvalue above 1.0, the cumulative percentage of explained variance approximately 60%, and visually examining the scree plot (Fabrigar & Wegener, 2012; Fabrigar et al., 1999; Field, 2009; Loewen & Gonulal, 2015).

Exploratory factor analyses in this study extracted five motivation factors with the eigenvalues above 1.0 and 63.7% of explained variance (see Table 4). However, among the five
identified motivation factors, the correlation among the two subtypes of intrinsic motivation factors was too high ($r = 0.56$), so additional analyses were conducted among the items of intrinsic motivation. The result indicated that all the intrinsic motivation items loaded on one factor, explaining 50.2% of the total variance. Hence I collapsed the two subtypes of intrinsic motivation and kept the original intrinsic motivation construct as one factor. All items displayed loadings on their correspondent factors above the recommended cutoff value of $.30$ (Field, 2009), except for Items 7 and 21. As their loadings are very close to $.30$, eliminating Items 7 and 21 could significantly affect factor reliabilities. Therefore, all 21 items were retained in the factor solution. The rationale for keeping variables on each factor was also in reference to the Self-Determination theoretical framework. For example, Item 18 is potentially cross-loaded on the factors of intrinsic motivation, introjected regulation, and amotivation. The decision to retain this item on the introjected regulation factor was based on its original purpose to measure the construct of introjected regulation in Language Learning Orientation Scale- Intrinsic Motivation, Extrinsic Motivation, and Amotivation Subscales (LLOS-IEA; Noels et al., 2000), in addition to its loading value of $.38$ on the factor of introjected regulation. This item retention strategy was used to ensure the factor analysis result conceptually consistent with the empirically supported theoretical scale. As a result, I identified four types of motivational orientations among these Chinese high school students: amotivation (3 items, Cronbach’s $\alpha = .86$), extrinsic motivation (EM)-external regulation (3 items, Cronbach’s $\alpha = .74$), extrinsic motivation(EM)-introjected regulation (5 items, Cronbach’s $\alpha = .67$), and intrinsic motivation (10 items, Cronbach’s $\alpha = .89$).
Table 4  
*Factor Loadings of English Language Learning Motivational Orientation Scale*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pattern matrix</th>
<th>Communalities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intrinsic Motivation-Subtype I</td>
<td>Amotivation</td>
</tr>
<tr>
<td>1. For the pleasure I experience when surpassing myself in my English studies.</td>
<td>.06</td>
<td>-.08</td>
</tr>
<tr>
<td>2. For the “high” I feel when hearing English spoken.</td>
<td><strong>.68</strong></td>
<td>-.02</td>
</tr>
<tr>
<td>3. In order to get a more prestigious job later on.</td>
<td>.02</td>
<td>.01</td>
</tr>
<tr>
<td>4. Because I have the impression that it is expected of me, e.g., from my teachers and my parents.</td>
<td>-.00</td>
<td>.23</td>
</tr>
<tr>
<td>5. I don’t know; I can’t come to understand what I am doing studying English.</td>
<td>-.06</td>
<td><strong>.75</strong></td>
</tr>
<tr>
<td>6. Because I would feel ashamed if I couldn’t speak to my friends from the English community in their native tongue.</td>
<td>.04</td>
<td>-.12</td>
</tr>
<tr>
<td>7. Because I choose to be the kind of person who can speak English.</td>
<td><strong>.23</strong></td>
<td>-.34</td>
</tr>
</tbody>
</table>
8. For the “high” feeling that I experience while speaking English.  
9. For the enjoyment I experience when I grasp a difficult construct in English.  
10. In order to have a better salary later on.  
11. For the pleasure I get from hearing English spoken by native English speakers.  
12. Because I would feel guilty if I didn’t know the language of English.  
13. Honestly, I don’t know; I truly have the impression of wasting my time in studying English.  
14. For the satisfaction I feel when I am in the process of accomplishing difficult exercises in English.  
15. Because I think it is good for my personal development.  
16. I cannot come to see why I study English, and frankly, I don’t give a damn.  
17. For the satisfied feeling I get in finding out new things in the process of learning English.
<p>| | | | | | |</p>
<table>
<thead>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18. To show myself that I am a good student because I can speak English.</td>
<td>-.11</td>
<td>.28</td>
<td>-.07</td>
<td>-.38</td>
<td>.32</td>
</tr>
<tr>
<td>19. For the pleasure I experience in knowing more about the literature of the English group.</td>
<td>.51</td>
<td>.06</td>
<td>-.07</td>
<td>.00</td>
<td>.18</td>
</tr>
<tr>
<td>20. Because I enjoy the feeling of acquiring knowledge about the English community and their way of life.</td>
<td>.63</td>
<td>-.05</td>
<td>.03</td>
<td>-.29</td>
<td>-.05</td>
</tr>
<tr>
<td>21. Because I choose to be the kind of person who can speak more than one language.</td>
<td>.27</td>
<td>-.21</td>
<td>-.24</td>
<td>-.23</td>
<td>.04</td>
</tr>
</tbody>
</table>
By examining the reliabilities for each identified factor in the motivation scale, all the factors demonstrated acceptable Cronbach’s Alpha (Fabrigar & Wegener, 2012; Fabrigar et al., 1999). Introjected regulation had a little lower internal consistency, compared to the other three factors, with a Cronbach’s Alpha of 0.67. However, introjected regulation accounted for 6.43% of the total variance, very close to external regulation (7.49%) in the psychological constructs. In conclusion, factor analyses on the scale of English language learning motivational orientations yielded a four-factor solution for the following analyses: intrinsic motivation, introjected regulation, external regulation, and amotivation. Factor scores were computed by means of regression.

Factors of English language learning engagement (Items 1-10 in Section 3) were analyzed together. The Kaiser-Meyer-Olkin (KMO) value was 0.81 and the Bartlett’s Test of Sphericity reached statistical significance. The scree plot revealed a clear break after the second factor. The total variance explained by these two factors reached 51.1%. All positively coded items loaded on one factor while all negatively coded items loaded on the other, regardless whether or not reversing scores of the negative-worded items (see Table 5). Unexpectedly, this result was inconsistent with the original design of the Motivational Intensity Scale (Gardner, Tremblay, & Masgoret, 1997), which demonstrated that 10 items loaded on a single factor named motivational intensity. However, the result confirmed the fact that Chinese students have difficulties responding to reverse-worded items, as recognized in previous research (Rao & Sachs, 1999; Yan, 2014).

The most prevalent conceptualization in the literature suggests that learning engagement consists of three distinct, yet interrelated classifications: behavioral, emotional, and cognitive engagement (Fredricks et al., 2004). All the ten items in the English language learning
engagement scale of this study are pertaining to behavioral engagement, which is defined in terms of involvement in academic and class-based activities, presence of positive conduct, and absence of disruptive behavior (Fredricks et al., 2004). Previous survey studies have measured positive behavioral engagement with the subscales of attention, participation, concentration, effort, homework completion, and adherence to classroom rules. Negative behavioral engagement has been measured by the subscales of behavioral disaffection and trouble avoidance (Fredricks & McColskey, 2012).

By examining the themes of items loading high on each factor of learning engagement in the present study, I named the two factors “ongoing effort” (Cronbach’s $\alpha = .79$) and “trouble avoidance” (Cronbach’s $\alpha = .69$) respectively for the following analyses. Since the negatively worded items were all loading on the negative behavioral learning engagement factor of “trouble avoidance”, there was no need to reverse the scores of these items for the following analyses.
<table>
<thead>
<tr>
<th>Scale</th>
<th>Pattern matrix</th>
<th>Communalities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ongoing Effort</td>
<td>Trouble Avoidance</td>
</tr>
<tr>
<td></td>
<td>(positive)</td>
<td>(negative)</td>
</tr>
<tr>
<td>1. I don't pay too much attention to the feedback I receive in my</td>
<td>.00</td>
<td>.50</td>
</tr>
<tr>
<td>English class.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I really work hard to learn English.</td>
<td>.66</td>
<td>.04</td>
</tr>
<tr>
<td>3. When I have a problem understanding something we are learning in</td>
<td>.57</td>
<td>-.14</td>
</tr>
<tr>
<td>my English class, I always ask the instructor for help.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I can't be bothered trying to understand the more complex aspects</td>
<td>-.07</td>
<td>.70</td>
</tr>
<tr>
<td>of English.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I don't bother checking my corrected assignments in my English</td>
<td>.00</td>
<td>.78</td>
</tr>
<tr>
<td>courses.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I have a tendency to give up when our English instructor goes</td>
<td>.07</td>
<td>.34</td>
</tr>
<tr>
<td>off on a tangent.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I make a point of trying to understand all the English I see and</td>
<td>.62</td>
<td>.05</td>
</tr>
<tr>
<td>hear.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. When I am studying English, I ignore distractions and stick to</td>
<td>.75</td>
<td>-.03</td>
</tr>
<tr>
<td>the job at hand.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I keep up to date with English by working on it almost every day.</td>
<td>.67</td>
<td>.01</td>
</tr>
<tr>
<td>10. I tend to approach my English homework in a random and unplanned</td>
<td>-.20</td>
<td>.45</td>
</tr>
<tr>
<td>manner.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The items of self-perceived English language proficiency (Items 1-5 in Section 4) were investigated using exploratory factor analysis. All the five items loaded on a single factor with a total explained variance of 59.2% and a good internal consistency (Cronbach’s Alpha = 0.82), as is shown in Table 6. This result is consistent with previous research on Chinese students’ self-perceived English proficiency (Yan, 2014).

Table 6
Factor Loadings of Self-perceived English Language Proficiency

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pattern matrix</th>
<th>Communalities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>English</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proficiency</td>
</tr>
<tr>
<td>1. Self-perceived Reading</td>
<td>.65</td>
<td>.43</td>
</tr>
<tr>
<td>2. Self-perceived Writing</td>
<td>.62</td>
<td>.39</td>
</tr>
<tr>
<td>3. Self-perceived Listening</td>
<td>.64</td>
<td>.41</td>
</tr>
<tr>
<td>4. Self-perceived Speaking</td>
<td>.66</td>
<td>.44</td>
</tr>
<tr>
<td>5. Self-perceived Overall</td>
<td>.93</td>
<td>.86</td>
</tr>
</tbody>
</table>

Correlation Analyses

In order to explore Chinese high school English learners’ motivation patterns on the self-determination continuum, Pearson correlation coefficients were calculated on the scores of each of the identified motivational orientations. In addition, correlations among motivational orientation, learning engagement, and language achievement variables were performed to investigate their bivariate relationships (see Table 7). Based on the general benchmarks for interpreting the effect size of correlations (Plonsky, 2015), small, medium, and large correlations were defined as .25, .40, and .60.
Intrinsic motivation was significantly correlated with the other three motivation subscales, including amotivation, external regulation, and introjected regulation. These correlations were all negative with the highest to amotivation ($r = -0.45$) followed by introjected regulation ($r = -0.40$) and external regulation ($r = -0.38$). This result indicated that students reporting more intrinsic motivation tend to be less extrinsically motivated and less amotivated, and vice versa. Introjected regulation and external regulation had significantly positive correlation ($r = 0.45$), which suggested that students reporting one type of extrinsic motivation are likely to possess the other type of extrinsic motivation as well. These correlations were all medium in effect size.

All the identified motivational orientations were significantly correlated with ongoing effort subscale of learning engagement while only amotivation and intrinsic motivation were found significantly correlated with trouble avoidance subscale of learning engagement. Intrinsic motivation, in particular, displayed high correlation ($r = 0.62, p < .01$) with ongoing effort. On the other hand, amotivation demonstrated moderately high correlation ($r = 0.55, p < .01$) with trouble avoidance. These results indicated that students reporting more intrinsic motivation are likely to invest more effort when engaged in English learning activities. Students who showed no motivation in learning English tend to avoid or give up more easily when dealing with academic challenges.

Motivational orientations and learning engagement variables had no significant correlation with students’ previous years of learning English as a language achievement indicator. However, most motivational orientations and learning engagement variables were significantly correlated with students’ self-perceived English proficiency and English test score. Specifically, intrinsic motivation and two engagement subscales were found to have medium
correlation with self-perceived English proficiency. Intrinsic motivation, introjected regulation, and learning engagement variables demonstrated significantly correlated with students’ English test score, with a smaller effect size though. Amotivation was consistently found to be negatively correlated with language achievement, including self-perceived English proficiency and English test score. These results revealed that students reporting to be more motivated and more actively engaged in learning English tend to perceive themselves with higher English proficiency and to score higher in English test. In contrast, students, with no motivation in learning English and negatively engaged, are more likely to believe that they have low English proficiency, and tend to score lower on the English test.

Correlations among all potential independent variables were also examined. The correlations varied to a maximum of .62 (intrinsic motivation and diligent concentration). The correlations were generally small to medium, indicating these variables could be independently used in subsequent regression analyses (Allison, 1998; Tabachnick & Fidell, 2013).
Table 7
Correlations among Motivational Orientations, Learning Engagement Variables, and Language Achievement Variables

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Amotivation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. External regulation</td>
<td>.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Introjected regulation</td>
<td>-.05</td>
<td>.45**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Intrinsic motivation</td>
<td>-.45**</td>
<td>-.38**</td>
<td>-.40**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Ongoing effort</td>
<td>-.32**</td>
<td>-.19**</td>
<td>-.23**</td>
<td>.62**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Trouble avoidance</td>
<td>.55**</td>
<td>-.07</td>
<td>-.08</td>
<td>-.28**</td>
<td>-.39**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Previous years of learning English</td>
<td>-.01</td>
<td>.04</td>
<td>.05</td>
<td>.03</td>
<td>.06</td>
<td>-.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Self-perceived English proficiency</td>
<td>-.38**</td>
<td>-.07</td>
<td>-.08</td>
<td>.47**</td>
<td>.46**</td>
<td>-.36**</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>9. English test score</td>
<td>-.29**</td>
<td>-.04</td>
<td>.13**</td>
<td>.24**</td>
<td>.20**</td>
<td>-.30**</td>
<td>.06</td>
<td>.33**</td>
</tr>
</tbody>
</table>

*Note: **p < .01*
Regression Analyses

I conducted standard and hierarchical multiple regression analyses to answer the second and third research questions. In the first regression model, standard regression analyses were conducted with the motivational orientations and learning engagement variables, to address the second research question. The four identified motivational orientations entered the regression as independent variables with two learning engagement indicators, i.e., ongoing effort and trouble avoidance, as the dependent variables respectively. Considering the rigor of standard multiple regression, the results of standard multiple regressions were analyzed by referring to the overall correlation results when necessary, as suggested by Tabachnick and Fidell (2012). The results of standard regression analyses are shown in Table 8 and 9.

Table 8

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>p</th>
<th>95% CI for B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amotivation</td>
<td>-.05</td>
<td>-97</td>
<td>.33</td>
<td>[-.13, .05]</td>
</tr>
<tr>
<td>External regulation</td>
<td>.04</td>
<td>.77</td>
<td>.44</td>
<td>[-.06, .13]</td>
</tr>
<tr>
<td>Introjected regulation</td>
<td>.001</td>
<td>.03</td>
<td>.98</td>
<td>[-.10, .10]</td>
</tr>
<tr>
<td>Intrinsic motivation</td>
<td>.61**</td>
<td>11.54</td>
<td>.000</td>
<td>[.48, .68]</td>
</tr>
</tbody>
</table>

Note: **p < .01

As is shown in Table 8, motivational orientations together explained 38% of variance in the positive engagement of ongoing effort, with intrinsic motivation as the only significant predictor (β = .61, p < .01) among the four identified motivational subscales. On the other hand, motivational orientations explained approximately 30% of variance in the regression model with
trouble avoidance as the dependent variable. Amotivation was a significant strong predictor among motivational subtypes (see Table 9). Though external regulation ($\beta = -.10, p = .05$) and intrinsic motivation ($\beta = -.11, p = .05$) both appeared to be slightly predictive, only intrinsic motivation was confirmed to be a minor predictor by referring to its significant correlation ($r = -.28, p < .01$) with trouble avoidance. The results indicated that motivational orientations contributed approximately one third of variance to English language learning engagement. Students reporting more intrinsic motivation are more likely to invest constant effort and less likely to avoid trouble when engaged in learning the language. Students without motivation demonstrated a strong trouble avoidance tendency.

Table 9

| Standard Regression Analysis of Students’ English Learning Engagement- Trouble Avoidance |
|-----------------------------------------------|-----------------|-----------------|-----------------|-----------------|
| $R^2$ | Adjusted $R^2$ | $F$ (df1, df2) | Variable | Standardized Coefficients $\beta$ | $t$ | $p$ | 95% CI for B |
| .311 | .304 | 43.49** (4, 385) | Amotivation | .50** | 9.99 | .000 | [.38, .56] |
| | | | External regulation | -1.10* | -1.98 | .05 | [-.19, -.00] |
| | | | Introjected regulation | -.05 | -1.04 | .30 | [-.16, .05] |
| | | | Intrinsic motivation | -1.11* | -1.96 | .05 | [-.20, .00] |

Note: **$p < .01$, *$p \leq .05$

In the second regression model, standard regression analyses were conducted with students’ self-perceived English proficiency and English test score as dependent variables respectively in order to address the third research question. Motivational orientations and learning engagement variables respectively entered into the regression as independent variables.
Students’ previous years of learning English was excluded from the dependent variables because no significant correlations were found between the potential independent variables and students’ previous learning years. The results of multiple regression analyses are displayed in Table 10 through Table 13.

Table 10
*Standard Regression Analysis of Students’ Self-perceived English Proficiency with Motivational Orientation as Independent Variables*

<table>
<thead>
<tr>
<th>R²</th>
<th>Adjusted R²</th>
<th>F (df₁, df₂)</th>
<th>Variable</th>
<th>Standardized Coefficients (β)</th>
<th>t</th>
<th>p</th>
<th>95% CI for B</th>
</tr>
</thead>
<tbody>
<tr>
<td>.265</td>
<td>.257</td>
<td>34.69** (4, 385)</td>
<td>Amotivation</td>
<td>-.17**</td>
<td>-3.40</td>
<td>.001</td>
<td>[-.28, -.08]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>External regulation</td>
<td>.08</td>
<td>1.57</td>
<td>.12</td>
<td>[-.02, .19]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Introjected regulation</td>
<td>.06</td>
<td>1.06</td>
<td>.29</td>
<td>[-.05, .17]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Intrinsic motivation</td>
<td>.44**</td>
<td>7.72</td>
<td>.000</td>
<td>[.33, .56]</td>
</tr>
</tbody>
</table>

*Note: **p < .01*
Table 11
*Standard Regression Analysis of Students’ English Test Score with Motivational Orientation as Independent Variables*

<table>
<thead>
<tr>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>$F$ (df$_1$, df$_2$)</th>
<th>Variable</th>
<th>Standardized Coefficients $\beta$</th>
<th>$t$</th>
<th>$p$</th>
<th>95% CI for B</th>
</tr>
</thead>
<tbody>
<tr>
<td>.140</td>
<td>.131</td>
<td>15.72** (4, 385)</td>
<td>Amotivation</td>
<td>-.17**</td>
<td>-3.03</td>
<td>.003</td>
<td>[-4.17, -.89]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>External regulation</td>
<td>-.06</td>
<td>-1.06</td>
<td>.29</td>
<td>[-2.59, .77]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Introjected regulation</td>
<td>.25**</td>
<td>4.31</td>
<td>.000</td>
<td>[2.15, 5.76]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Intrinsic motivation</td>
<td>.24**</td>
<td>3.85</td>
<td>.000</td>
<td>[1.73, 5.35]</td>
</tr>
</tbody>
</table>

*Note: **$p < .01$*

In terms of the contribution of motivational orientations to English language achievement (See Table 10 and 11), motivational orientations explained 25.7% of variance to students’ self-perceived English proficiency and 13.1% of variance to students’ English test score. These results revealed that students’ motivational orientations contributed more to their English proficiency in self-evaluation than to that assessed in the English test. Intrinsic motivation and amotivation were significant predictors to self-perceived English proficiency. Intrinsic motivation, introjected regulation, and amotivation were all significant predictors to English test score. In addition, introjected regulation comes to play a role in predicting the outcome when students’ language proficiency is assessed in the English test. However, considering its low correlation ($r = .13, p < .01$) with test score and its little overlap with the other independent variables, introjected regulation was a minor predictor, compared to intrinsic motivation, regardless of its magnitude ($\beta = .25, p < .01$) in the regression model. In general, these results suggested that, no matter in the self-evaluation of English proficiency or in the English test,
students reporting more intrinsic motivation tend to score high, whereas those reporting no motivation tend to score low. Students who reported more introjected regulation tend to score high in the English test as well.

Table 12
*Standard Regression Analysis of Students’ Self-perceived English Proficiency with Learning Engagement as Independent Variables*

<table>
<thead>
<tr>
<th>R²</th>
<th>Adjusted R²</th>
<th>F</th>
<th>(df₁, df₂)</th>
<th>Variable</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>p</th>
<th>95% CI for (\beta)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.253</td>
<td>.249</td>
<td>65.56**</td>
<td>(2, 387)</td>
<td>Ongoing effort</td>
<td>.38**</td>
<td>7.93</td>
<td>.000</td>
<td>[.30, .50]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Trouble avoidance</td>
<td>-.22**</td>
<td>-4.53</td>
<td>.000</td>
<td>[-.33, -.13]</td>
</tr>
</tbody>
</table>

*Note: **p < .01

Table 13
*Standard Regression Analysis of Students’ English Test Score with Learning Engagement as Independent Variables*

<table>
<thead>
<tr>
<th>R²</th>
<th>Adjusted R²</th>
<th>F</th>
<th>(df₁, df₂)</th>
<th>Variable</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>p</th>
<th>95% CI for (\beta)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.096</td>
<td>.091</td>
<td>20.57**</td>
<td>(2, 387)</td>
<td>Ongoing effort</td>
<td>.10*</td>
<td>1.96</td>
<td>.05</td>
<td>[-.00, 3.21]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Trouble avoidance</td>
<td>-.26**</td>
<td>-4.86</td>
<td>.000</td>
<td>[-5.7, -2.4]</td>
</tr>
</tbody>
</table>

*Note: **p < .01, *p ≤ .05

In terms of learning engagement’s contribution to English language achievement (See Table 12 and 13), students’ learning engagement explained 24.9% of variance to self-perceived English proficiency and 9.1% of variance to their English test score. Both subtypes of learning engagement were significant predictors to self-perceived English proficiency. Trouble avoidance negatively predicted students’ English test score. Ongoing effort seemed to be a minor predictor
(\(\beta = .10, p = .05\)) to English test score, but given its significant correlation \((r = .20, p < .01)\) with test score and with the other independent variable, trouble avoidance \((r = - .39, p < .01)\), ongoing effort was viewed to possess the same predictive power as the other engagement subtype. The results suggested that students reporting more positive learning engagement tend to score high in self-evaluated English proficiency as well as in the English test. However, students with more negative engagement tend to score low on both measures.

According to Gardner (2001), motivational orientations are presumed to be causally prior to learning engagement. Based on this theoretical consideration, a hierarchical regression model was set up to detect how much learning engagement contributes additionally to English language achievement (Tabachnick & Fidell, 2013). In this regression model, hierarchical regression analyses were conducted with students’ self-perceived English proficiency and English test score as dependent variables respectively. The results of multiple regression analyses are displayed in Table 14 and 15.

As is shown in Table 14, motivational orientation variables entered first in the hierarchical regression with students’ self-perceived English proficiency as dependent variable. Then learning engagement variables were added. The total variance explained by the whole model was 30.8%, with engagement variables accounting for additional 5.1% variance. Intrinsic motivation, amotivation, and two types of learning engagement were all found significant contributors to self-perceived English proficiency.
Table 14
Hierarchical Regression Analysis of Students’ Self-perceived English Proficiency

<table>
<thead>
<tr>
<th>Step</th>
<th>Adjusted $R^2$</th>
<th>F change</th>
<th>Variable</th>
<th>Standardized Coefficients $\beta$</th>
<th>t</th>
<th>p</th>
<th>95% CI for B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.257</td>
<td>34.69**</td>
<td>Amotivation</td>
<td>-.17**</td>
<td>-3.40</td>
<td>.001</td>
<td>[-.28, -.08]</td>
</tr>
<tr>
<td></td>
<td>(4,385)</td>
<td>(df1, df2)</td>
<td>External regulation</td>
<td>.08</td>
<td>1.57</td>
<td>.12</td>
<td>[-.02, .19]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Introjected regulation</td>
<td>.06</td>
<td>1.06</td>
<td>.29</td>
<td>[-.05, .17]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Intrinsic motivation</td>
<td>.44**</td>
<td>7.72</td>
<td>.000</td>
<td>[.33, .56]</td>
</tr>
<tr>
<td>2</td>
<td>.308</td>
<td>29.82**</td>
<td>Ongoing effort</td>
<td>.22**</td>
<td>3.87</td>
<td>.000</td>
<td>[.11, .35]</td>
</tr>
<tr>
<td></td>
<td>(6,383)</td>
<td></td>
<td>Trouble avoidance</td>
<td>-.14*</td>
<td>-2.56</td>
<td>.01</td>
<td>[-.26, -.03]</td>
</tr>
</tbody>
</table>

Note: **p < .01, *p < .05

Similarly, motivational orientation variables entered first in the regression model with English test score as dependent variable, followed by learning engagement variables in the second step. As is shown in Table 15, 14.9% of total variance was explained in this model. Learning engagement represented 1.8% extra variance. All the entered motivational orientation variables, except external regulation, and the engagement variable of trouble avoidance significantly contributed to students’ English test achievement. The results of hierarchical regression indicated that learning engagement explained a very small additional proportion (1.8 - 5.1%) in students’ English language achievement, compared to motivational orientations.
Table 15
Hierarchical Regression Analysis of Students’ English Test Score

<table>
<thead>
<tr>
<th>Step</th>
<th>Adjusted R²</th>
<th>F change (df₁, df₂)</th>
<th>Variable</th>
<th>Standardized Coefficients β</th>
<th>t</th>
<th>p</th>
<th>95% CI for B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.131</td>
<td>15.72** (4, 385)</td>
<td>Amotivation</td>
<td>-.17**</td>
<td>-3.03</td>
<td>.003</td>
<td>[-4.17, -.89]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>External regulation</td>
<td>-.06</td>
<td>-1.06</td>
<td>.29</td>
<td>[-2.59, .77]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Introjected regulation</td>
<td>.25**</td>
<td>4.31</td>
<td>.000</td>
<td>[2.15, 5.76]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Intrinsic motivation</td>
<td>.24**</td>
<td>3.85</td>
<td>.000</td>
<td>[1.73, 5.35]</td>
</tr>
<tr>
<td>2</td>
<td>.149</td>
<td>12.37* (6, 383)</td>
<td>Ongoing effort</td>
<td>.02</td>
<td>.29</td>
<td>.77</td>
<td>[-1.62, 2.20]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Trouble avoidance</td>
<td>-.17**</td>
<td>-2.92</td>
<td>.004</td>
<td>[-4.60, -.90]</td>
</tr>
</tbody>
</table>

Note: **p < .01, *p <.05

By examining all the regression results, intrinsic motivation was consistently a strong predictor for active learning engagement and high language achievement while amotivation remained to be a significant predictor for negative language learning outcomes. Regarding the extrinsic dimension of motivational orientations, introjected regulation functioned similarly as intrinsic motivation in predicting high test score, but in a smaller effect size. Effort investment positively contributed to self-perceived English proficiency and English test score. The negative engagement of trouble avoidance, in contrast, exhibited its significant predictive power to low language achievement. Learning engagement accounted for an additional but extremely small proportion of explained variance to English language achievement. In general, comparing the correlation and regression results between motivational and engagement components, SDT
motivational orientations remained to be strong and unique determinants in contribution to English language achievement.
Chapter 5 Discussion and Conclusion

This research addressed three research questions concerning the relationships among Chinese high school English learners’ motivational orientations as measured by Self-Determination Theory (SDT), English language learning engagement, and their English language achievement. As a result, four basic motivational orientations, including intrinsic motivation, introjected regulation, external regulation, and amotivation, were confirmed. Intrinsic motivation was found to be an effective predictor for active learning engagement and high level of language achievement. Introjected regulation of the extrinsic dimension was noted to have a moderate effect on Chinese high school students’ language test score. Compared to learning engagement, identified as effort and trouble avoidance in the present study, SDT motivational orientations remain to be significantly strong determinants in contribution to EFL learning achievement.

This chapter addresses the research questions and discusses the results in research and education contexts. First, the Self-Determined motivational orientations of the participants are discussed along with their motivational pattern in relation to the empirically tested theoretical Self-Determination Theory (SDT) continuum (Noels et al, 2000) and the English language learning engagement (Gardner, Trembley, & Masgoret, 1997). Second, the relationship between the motivational orientations and learning engagement are discussed. Next, the contribution of SDT motivational orientations and learning engagement to English language achievement is discussed. Finally, the limitations and future research are also discussed, followed by conclusions and implications.
Chinese High School English Learners’ Motivational Orientations as Measured by Self-Determination Theory and Learning Engagement

The first research question was: “What are the motivational orientations as measured by Self-Determination Theory and the learning engagement of Chinese high school students in the English classroom?” Findings specifically revealed four SDT motivational orientations including intrinsic motivation, extrinsic motivation-introjected regulation, extrinsic motivation-external regulation, and amotivation as proposed in Self-Determination Theory (SDT; Deci & Ryan, 1985). Two learning engagement factors, namely ongoing effort and trouble avoidance, were detected in this sample of Chinese high school English learners. Compared to earlier studies (Gardner, Trembley, & Masgoret, 1997; Noels at al., 2000), inconsistency mainly existed in the number of identified motivational orientations and learning engagement factors, as well as the inter-correlation among these motivational subtypes.

Chinese high school students’ SDT motivational orientations in the English classroom. 390 high school students participated in this study. Based on the descriptive analysis on motivational orientations, these students generally demonstrated high level of self-determination with the highest means ranging from 3.90 to 4.14 out of 5, intended to measure identified regulation – the most self-determined extrinsic dimension. This could be the result of using a sample from one of the top secondary schools in a capital city, where students are mostly of high academic profile and thus tend to be more motivated in learning.

The factor analyses in this study identified four subtypes of SDT motivational orientations among these students: intrinsic motivation (IM), extrinsic motivation–introjected regulation (EM-IR), extrinsic motivation-external regulation (EM-ER), and amotivation (AM). Notably in my study, the presence of a distinct factor for identified regulation was not found,
which existed in the original scale (Noels et al., 2000). The intrinsic motivation scale did not split into three subscales as indicated in Noels et al.’s (2000) research. These researchers suggested a seven-dimension motivational orientation solution based on their research among Anglo-Canadian learners of French in a French-English bilingual university, ages ranging between 18 and 50. However, findings in this study were consistent with Cheng et al.’s (2014) research, who conducted a study among test-takers of three English proficiency tests in Canada, China, and Taiwan. Similar to my study, Cheng and colleagues adapted the Language Learning Orientation Scale (Noels et al., 2000) and discovered four motivational orientations as measured by Self-Determination Theory: intrinsic motivation, introjected regulation, external regulation, and amotivation.

**Chinese high school students’ SDT motivational orientation pattern on the theoretical continuum.** As proposed by SDT theorists (Deci & Ryan, 2002), all the types of motivation are arranged along a continuum of self-determination based on the extent to which self-regulated behaviours are autonomous. Motivational orientations on the continuum range from the most self-determined (intrinsic motivation) to the least self-determined (external regulation) motivational orientations, with adjacent subscales having stronger positive correlations than distant ones. Amotivation is believed to be at the other end of the SDT continuum, opposite to both intrinsic and extrinsic motivational orientations. This theoretical proposal was empirically supported in some earlier research (Noels et al., 2000; Vallerand et al., 1992, 1993). According to Noels et al. (2000), three subtypes of intrinsic motivation shared the strongest correlations. Intrinsic motivation demonstrated positive but decreasing correlations with extrinsic motivational orientations with the degree of self-determination going down. The intrinsic and extrinsic motivational orientations were all negatively correlated with amotivation.
In the present study with Chinese high school English learners, the theoretically neighboring motivational subtypes displayed strongest positive correlations, which align with previous findings in the literature (Noels et al., 2000; Vallerand et al., 1992, 1993). The three intrinsic subtypes loaded on one factor (Cronbach’s $\alpha = .89$). Introjected regulation and external regulation also had moderately high correlation ($r = .45$). However, a major discrepancy from earlier research (Noels et al., 2000) existed in the relationships among the three basic motivational orientations including intrinsic motivation, extrinsic motivation, and amotivation. In this study, intrinsic motivation was found not only negatively correlated with amotivation ($r = -.45$) as expected, but also with the two identified extrinsic motivational subtypes including introjected regulation ($r = -.40$) and external regulation ($r = -.38$). In addition, neither of the two identified extrinsic motivational orientations were correlated with amotivation. The intercorrelations among SDT motivational orientations in this study suggested a pattern with extrinsic motivational orientations (introjected regulation and external regulation) polarized to a third end opposite to intrinsic motivation but also apart from amotivation. Therefore, findings in my study on Chinese high school English learners generally rejected this empirically supported theoretical SDT continuum.

An attempt to interpreting the inconsistency on the SDT motivational orientation results. The factor of age should be taken into consideration when explaining the inconsistency between the present study and earlier research (Noels et al., 2000) on detecting motivational orientations. The sample age could, to a large extent, affect the pattern of motivational orientations. The distinction in responses suggested that intrinsic motivational subtypes may have been viewed as an identical construct by adolescent learners (Vandergrift, 2005). Adults, compared to their younger counterparts, tend to be more capable to self-endorse the value in their
actions and hence possess more consciously internalized motivational orientations (Deci & Ryan, 2002). These tendencies might lead to the instable presence of intrinsic motivational subscales, and identified regulation, the most internalized extrinsic motivational dimension, among pre-college language students. Compared to the ages (ranging from 18 to 50) of the university sample in Noels et al.’s (2000) research, the high school participants in this study had a younger and narrower age range from 15 to 18. In another study among pre-college English learners, Ardasheve, Tong, and Tretter (2012), by employing exploratory and confirmative factor analyses, only identified intrinsic motivation, introjected regulation, and external regulation in their sample.

The age of the participants in the current study may also affect the distinctions in relationships among SDT motivational orientations. In this study using a sample of high school students, the results demonstrated different relationships among the SDT motivational orientations from previous discovery among university students (Noels et al., 2000). Similarly, the discrepancy from the original theoretical proposal was observed in previous research among adolescent learners. Caleon et al. (2015) found that introjected regulation, rather than identified regulation, the most autonomous type of extrinsic dimensions, displayed the highest positive strength with intrinsic motivation, in a sample of secondary school students, ages ranging from 11 to 14. In another study, Vandergrift (2005) noted that the SDT motivational subscales failed to represent gradually changing strength in correlations among adolescent learners of French.

**Chinese high school students’ English learning engagement.** English learning engagement among Chinese high school learners was measured by the Motivational Intensity Scale (Gardner, Trembly, & Masgoret, 1997). This scale was originally developed in a sample of 102 university students enrolled in introductory French. One factor (Cronbach’s α = .76) of
motivational intensity was represented with five positively coded items and five negatively coded items. This scale was widely adopted to measure learning engagement in previous language learning motivation literature (Comanaru & Noels, 2009; Noels, 2001; Pae, 2008). In a study on 145 Canadian language learners of Chinese (Comanaru & Noels, 2009), 10 items on this scale loaded on a single factor (Cronbach’s $\alpha = .80$) named “learning engagement.” In another study on 315 Korean university EFL learners (Pae, 2008), this scale was also adopted to measure the single construct of motivational intensity. However, this one-factor scale split into two factors unexpectedly in my study of Chinese high school English learners, with positively coded items loading on one (ongoing effort; Cronbach’s $\alpha = .79$) and negatively coded items loading on the other (trouble avoidance; Cronbach’s $\alpha = .69$). This result may be associated with the fact that Chinese students have difficulties responding to reverse-worded items, as recognized in previous research (Rao & Sachs, 1999; Yan, 2014).

SDT Motivational Orientations in Relation with Learning Engagement

This section addresses the second research question in the present study: “To what extent are students’ SDT motivational orientations related to their English learning engagement?” Given that the adopted learning engagement scale failed to load on a single factor in my study, Chinese high school students’ English learning engagement specifically refers to the positive engagement of “ongoing effort” and the negative engagement of “trouble avoidance”. These two subtypes of learning engagement are both included in student behavioral engagement (Fredricks, Blumenfeld, & Paris, 2004; Fredricks & McColskey, 2012). Findings in my study confirmed that intrinsic motivation (IM) was a significant strong predictor for more investment of effort and less trouble avoidance tendency, whereas less self-determined motivational orientations, including introjected regulation, external regulation, and amotivation, generally undermined learning
engagement, as suggested in previous literature (Chen & Kraklow, 2015; Comanaru & Noels, 2009; Noels, 2001; Patall, Cooper, & Robinson, 2008; Russell, 2011).

The predictive power of intrinsic motivation for positive learning engagement.

According to Self-Determination Theory, intrinsic motivation, as the most autonomous or self-determined type of motivation, is able to promote vitality and well-being in human activities. Consistent with this theoretical proposal, intrinsic motivation in my study was highly correlated with the positive engagement factor of ongoing effort ($r = .61, p < .01$) and a significant strong predictor for students’ effort investment ($\beta = .61, p < .01$). Intrinsic motivation was associated with less negative engagement of trouble avoidance ($r = -.28, p < .01$). These results echo empirical research findings adopting the same engagement instrument. Comanaru and Noels (2009), in their study of Canadian university-level heritage/foreign language learners of Chinese, suggested that the correlation between intrinsic motivation and learning engagement (i.e., motivational intensity) was significantly positive ($r = .46, p < .01$). Similarly, in the study of American university learners of Spanish (Noels, 2001), after controlling the integrative orientation in the first step of hierarchical regression, intrinsic motivation was significant in predicting increased learning engagement (i.e., motivational intensity; $\beta = .38, p < .05$).

In addition to the research above, the result in my study corresponded with another study using a different learning engagement instrument but a similar sample of Asian students. Chen and Kraklow (2015) noted that intrinsic motivation was a strong predictor ($\beta = .625, p < .01$) for students’ attention and effort in learning English among Taiwanese university students. The predictive power of intrinsic motivation for learning engagement confirmed in the present study is also aligned with a meta-analysis of 41 studies (Patall, Cooper, & Robinson, 2008) supporting
the effect of intrinsic motivation on learning outcomes in a variety of settings with both child and adult samples.

**The relationship between less self-determined motivational orientations and learning engagement.** As SDT theorists believed, less self-determined motivational orientations, including introjected regulation, external regulation, and amotivation, are not able to give rise to actions on the basis of autonomous choice. In my study, amotivation was negatively associated with students’ effort investment in learning English \( (r = -.32, p < .01) \), and in particular, a strong predictor for the negative engagement of trouble avoidance \( (\beta = .50, p < .01) \). Extrinsic motivational orientations, including introjected regulation and external regulation, also demonstrated minor associations \( (r = -.19 \sim -.23, p < .01) \) or no relation with English learning engagement. Similarly, amotivation was noted negatively associated with active learning engagement \( (r = -.39, p < .01; \text{Comanaru & Noels, 2009}) \) and predicted decreased learning engagement \( (\beta = -.34, p < .05; \text{Noels, 2001}) \) in earlier studies using the same engagement scale.

However, in Chen and Kraklow’s (2015) study of Taiwanese university students, external regulation was found to function as a significant minor predictor \( (\beta = .137, p < .05) \) of students’ attention in learning English. These researchers believed it as a result of Chinese educational tradition and culture. Interestingly, such a positive effect of extrinsic motivation on learning engagement was not found in my study with a Chinese sample. The unique role of extrinsic motivational orientations among Chinese students will be discussed in detail when addressing the third research question.

**SDT motivational orientations and beyond.** In summary, the results of multiple regression suggested that students’ SDT motivational orientations significantly predicted their
English language learning engagement. On one hand, intrinsic motivation was found to be a significant predictor for students to engage in English learning; on the other, extrinsic motivation and amotivation implied a strong power preventing students from investing more effort in learning English, as was also indicated by other researchers (Chen & Kraklow, 2015; Comanaru & Noels, 2009; Noels, 2001; Patall, Cooper, & Robinson, 2008; Russell, 2011).

The adjusted $R^2$ in multiple regression results of the present study indicated that the contribution of SDT motivational orientations explained approximately one third of variance (30.4% ~ 37.5%) in learning engagement. This is not a small portion but implying that over 60% of the variance in learning engagement remains to be unexplained. In addition to SDT motivational orientations, factors such as students’ self-efficacy, cognitive strategy use, self-regulation (Pintrich, Roeser, & De Groot, 1994), and student-teacher relationship and institutional support (Russell, 2011) all predict student classroom experience and engagement. Noels' (2001) study implied that teachers’ communication style in feedback might also indirectly influence students’ autonomous engagement in learning an additional language. Moreover, students may exert more intended effort in learning English as a result of the English interaction in and out of the class and the desire to prepare oneself for an ought-to self, such as a global citizen with competent language abilities, as recently suggested in the framework of L2 Motivational Self System (Dörnyei, 2005; Dörnyei & Chan, 2013).

The Contribution of SDT Motivational Orientations and Learning Engagement to Language Achievement

The third research question in the present study addresses the contributive power of students’ SDT motivational orientations and English learning engagement to their English language achievement. Given that the previous years of learning English, as one of the
achievement indicators, was excluded from regression analyses due to its lack of association with any of the variables in this study, English language achievement was only indicated by two variables: self-perceived English proficiency and English test score. In general, intrinsic motivation, the most self-determined motivational orientation, along with active behavioral learning engagement, was confirmed to significantly predict high level of English language achievement, as noted in earlier literature (Cheng et al., 2014; Joe, Hiver, & Al-Hoorie, 2017; Kang, 2001; Van de gaer et al., 2009; Wang, 2008; Wen, 1997; Wang & Holcombe, 2010). Extrinsic motivational orientation, specifically introjected regulation in the present study, marginally predicted students’ successful performance in their English test score, subject to contextual influences as claimed in previous studies (Kang, 2001; Rubenfeld et al., 2007; Wen, 1997; Warden & Lin, 2000). Moreover, the contributive degrees of motivational orientations and learning engagement were compared with reference to earlier motivation assumptions in the end of this section.

**Intrinsic motivation’s contribution to language achievement.** This study confirmed the statistically significant contribution of intrinsic motivation to language achievement in terms of self-perceived language proficiency ($\beta = .44, p < .01$) and language test score ($\beta = .24, p < .01$), though its contributive power seemed to be small in effect size to objective teacher-rated test score. This result is consistent with the findings in earlier studies regarding the associations between more self-determined motivational orientations and second/foreign language achievement (Cheng et al., 2014; Joe, Hiver, & Al-Hoorie, 2017; Kang, 2001; Wang, 2008; Wen, 1997). In Wang’s (2008) study among Chinese university students of English, intrinsic motivation for knowledge was a strong predictor ($\beta = .47, p < .01$) for high achievement in final English examination. Cheng et al. (2014) also noted that students reporting higher levels of
intrinsic motivation obtained high English test score with age and gender controlled across the three contexts of Canada, China, and Taiwan ($\beta = .10 \sim .16$, $p < .05$). However, their study discovered that intrinsic motivation was a negative predictor of high achievement in listening test in China. Since my study only employed the total test score of an English course test, the potential relationship between intrinsic motivation and English listening proficiency was not investigated. Future research could tap into this interesting dimension of motivational effects on language subskill test achievement.

Results in my study are also aligned with earlier discoveries in relevant areas. For example, students with high intrinsic motivation tend to show great interest in learning English, put more effort into English learning, and thus demonstrate a higher academic self-concept (Cokley et al., 2001) and higher self-efficacy (Pintrich, Roeser, & De Groot, 1994). Intrinsic motivation also influences academic achievement through the effects of learning strategies and self-confidence (Pae, 2008; Walker, Greene, & Mansell, 2006).

**Extrinsic motivations’ unique role in EFL context.** Extrinsic motivation, comparatively less self-determined motivational orientations, was contended to be a negative contributor or have no association with learning success, based on Self-Determination Theory. However, in my study for the sample of Chinese high school students, I noted that extrinsic motivation also moderately contributed to students’ English test score ($\beta = .25$, $p < .01$, for introjected regulation). This result is consistent with earlier research finding extrinsic motivational orientations also predict English language success in EFL contexts (Kang, 2001; Warden & Lin, 2000; Wen, 1997). First, this result could be explained by the extrinsically oriented learning goals in the high-stakes testing environment in China. Rubenfeld et al. (2007) suggested extrinsic motivation may play a more significant role than in Self-determination
Theory when language learners studying for extrinsically oriented goals, such as a rewarding test score. As noted earlier in this paper, high-stakes testing, such as the National College Entrance Exam (NCEE) and English proficiency tests, remains to play a gatekeeping role for Chinese high school students to make their way to post-secondary education. Therefore, it is inevitable for high school English learners to have extrinsically oriented goals in English language tests. Thus it is not difficult to understand why an extrinsic motivation subtype positively contributed to test score in the sample of Chinese high school English learners.

Second, this result could be affected by social collectivism in Chinese tradition and culture. There is a unique tendency in Chinese traditional culture that learning is not only a personal matter but also affects family honor in their community (Chen, 2016). Looking back at the factor analyses results of motivational orientations in my study, it is worth noting that the item for external expectation (“Because I have the impression that it is expected of me, e.g., from my teachers and my parents.”) loaded on the factor of introjected regulation, rather than external regulation as claimed in previous research (Chen & Kraklow, 2015; Noels et al., 2000). This means living up to social authority’s (i.e., teachers and parents) expectations was viewed closer to satisfying personal needs, i.e., intrinsic motivation or self-determination, in the Chinese high school sample. This tendency was as well confirmed in the congruence of general high levels of self-determined motivation and perceived parental expectation as reported in the descriptive data of the questionnaire. It seems that the contribution of introjected regulation to English test score might be a result of students’ inner drive to satisfy both personal academic needs and teacher/parents’ expectations. This result also corresponded with research findings based on goal orientation theory in Chinese cultural context. In a study of goal orientations and achievement among 1041 Chinese gifted students aged 9 to 17, Chan (2008) noted that, besides mastery
learning goals (a construct close to intrinsic motivation), social goals \((r = .30, p < .001)\) and performance approach goals \((r = .16, p < .001)\) were positively correlated with students’ academic subjects’ success. In another study, Chen (2016) revealed that filial piety among 336 Hong Kong university students, was significantly related with students’ goal orientations, which in turn contributed to academic achievement as reflected in their GPAs.

On the other hand, however, extrinsic motivational orientations did not display any relationship with students’ self-perceived English proficiency in the present study. One thing to note, in my study, is that students’ self-evaluation included listening and speaking proficiency other than reading and writing, whereas their English test score only reported assessment result of their reading and writing skills. This might lead students to view self-perceived English proficiency as a separate concept from their English test. Another potential cause for the evaluation discrepancy might be the limitation of Chinese students’ self-perceived English language proficiency. As Su (2005) noted, Chinese students’ self-perceived English proficiency might be largely affected by the Chinese culture’s value of modesty. As a result, students tend to rate their English proficiency around medium level (3), means 2.71 to 3.09 through all measured skills. Future research should be careful when adopting students’ self-perceived language proficiency and teachers’ test grade as language achievement indices in Chinese contexts. Additional investigation could be conducted to explore how Chinese students view self-rated and teacher-rated English language proficiency differently in multiple contexts.

**Learning engagement’s contribution to language achievement.** Learning engagement in this study specifically implies behavioral engagement. Functioning similar to more self-determined motivational orientations, students’ active behavioral learning engagement, as shown by the regression analyses result, significantly contribute to English language achievement in the
present study. The two subtypes of behavioral learning engagement measured in my study, exerted significant contribution to students self-perceived English proficiency ($\beta = .38, p < .01$, for ongoing effort; $\beta = -.22, p < .01$, for trouble avoidance) and English test score ($\beta = .10, p = .05$, for ongoing effort; $\beta = -.26, p < .01$, for trouble avoidance). This result is consistent with earlier studies on the relationship between learning engagement and academic achievement. Wang and Holcombe (2010) noted that active school participation was positively associated with secondary school students’ GPA ($\beta = .13, p < .05$) based on their study in the United States. Van de gaer et al. (2009) also found evidence for a positive longitudinal association between language achievement and school engagement in a cohort of 2,270 secondary students in Belgium.

Despite of its contribution to language achievement, students’ behavioral learning engagement did not contribute much as expected, compared to SDT motivational orientations. The additional variance in explaining language achievement was limited to approximately 2% to 5%. Therefore, based on the result in this study, direct behavioral learning engagement alone could barely mediate between SDT motivational orientations and English language achievement. Meanwhile, the present study indicated that more self-determined motivational orientations remained to be strong contributor to language achievement compared with learning engagement. This result rejected Gardner’s (2000) suggestion of viewing language learning motivational orientations as merely learning reasons, which has little direct relationship to language learning success. Admittedly, if taking behavioral learning engagement together with other engagement variables, such as cognitive and emotional engagement, as well as other psychological and contextual variables, such as test anxiety and prior achievement, they may explain more variance.
of language achievement beyond motivational orientations as noted in many empirical studies (Ardasheva, 2011; Bernaus & Gardner, 2008; Cheng et al., 2014; Pae, 2008).

Limitations and Recommendations for Future Research

This study revealed several significant findings on Chinese high school students’ SDT motivational orientations in relation with learning engagement and language achievement in learning English as a Foreign Language in China. However, there are a few limitations in the study. First, the sample is limited from one grade (Grade 11) of one school in a city of China due to limited research time and funding for a Master’s thesis. Hence findings of my study are limited to the present sample. Future researchers should seek to collect data in multiple Chinese high school contexts to confirm the results of the present study. Second, the learning engagement scale employed in this study only measures behavioral engagement. If more engagement variables (i.e., variables tapping emotional engagement and cognitive engagement) were introduced in the study, the relationship among motivational orientations, learning engagement, and language achievement could be examined to a further and finer extent. Also, the predictive power of motivational orientations to participants’ test score, as reported in the regression analyses, is only able to explain students’ past English language achievement in this study, rather than truly predict students’ future achievement. Unfortunately, I could only obtain their one test score before the questionnaire administration due to the limitation of accessibility to more test score results. Finally, the interpretation for the study results could be biased because of my previous occupation as a high school EFL teacher in China. To minimize this type of bias, I selected a sample in a different city from where I taught, randomized the survey questions, and discussed with my supervisor and my research colleagues in order to critically interpret the findings.
Based on the limitations in the present study, there remain several issues to be investigated in future research. First, as noted earlier in this chapter, ages and learning goals can affect motivational orientations and their predictive power for language learning outcomes to a large extent. In the stage of adolescence, particularly, high school students experience drastic changes physically and mentally, in transition to their adulthood. Therefore, we could hardly conclude that the eleventh graders can well represent high school learners with regard to motivational orientations. More empirical research should be conducted to compare English learners’ motivational orientations at multiple age levels to help understand how language learning motivational orientations are developed with age growth. Additionally, basic English language education in China demonstrates regional and institutional differences, as noted in Hu and his colleague’s studies (Hu, 2003; Hu & Mckay, 2012). Affected by social and economic gaps, pre-college students in cities as opposed to rural areas, and students in public schools as opposed to private educational institutions, may be faced with different situations in their English classrooms, and thus cast influences on students’ motivational orientations and learning outcomes. There remains a vast space to explore individual differences on pre-college students’ motivational orientations as well as their relationship with English learning outcomes in different regional and institutional contexts in China.

It is also necessary to consider the multifaceted nature of student engagement. The present study is restricted in exploring only a couple of direct behavioral engagement (i.e., ongoing effort and trouble avoidance). Limited effects of the behavioral learning engagement were detected on English language achievement. However, earlier engagement research in pre-college education, has indicated that student engagement are strong predictors for classroom performance and academic achievement (Hughes, Luo, Kwok, & Loyd, 2008; Prinrich &
DeGroot, 1990; Wang & Holcombe, 2010). In fact, the associations between student learning engagement and language achievement have been sparsely investigated in EFL education context. Additional research should be conducted to explore how different dimensions of student engagement, such as cognitive and emotional engagement, might influence students EFL learning success.

Lastly, the study suggests that researchers should take caution in choosing English language achievement indicators in the Chinese context. Previous years of learning English was noted in this study a non-significant achievement indicator due to the current China’s education policy, requiring students to begin English learning around the same age. Chinese students’ self-perceived English proficiency may be affected by the Chinese culture of modesty, and thus may not be a sensitive indicator of language achievement. Future researchers should be careful when adopting these language achievement variables above. In addition, one-time test score could also limit the interpretation of the study results. As suggested in Joe et al.’s (2017) research, motivational orientations may lose significant determinant role in predicting future language achievement. Future research should explore and establish a more effective language achievement indicator system for studying English learners in China.

Conclusions and Implications

This study investigated Chinese high school students’ motivational orientations based on Self-Determination Theory (SDT) and the relationship among SDT motivational orientations, learning engagement, and language achievement in English as a Foreign Language (EFL) classroom. Consistent with previous research, four basic motivational orientations, including intrinsic motivation, introjected regulation, external regulation, and amotivation, were identified in the sample of Chinese high school students. Intrinsic motivation was found to be an effective
predictor of active learning engagement and high level of language achievement. However, the intercorrelation among motivational orientations on the empirically supported theoretical continuum was rejected in this sample of Grade 11 students. The Chinese high school English learners demonstrated only two subtypes of extrinsic motivational orientations, namely introjected regulation and external regulation. Introjected regulation was noted to have a moderate positive effect on Chinese high school students’ language test score. Two engagement factors pertaining to effort and reaction to academic challenges were detected. Compared to learning engagement, particularly direct behavioral engagement in this study, SDT motivational orientations remain to be strong determinants in contribution to EFL learning achievement.

The findings of this study have a number of implications to research. The well-researched SDT motivational orientation pattern was challenged by the number and relationship among the identified motivational orientations of Chinese high school students in the English classroom. It is worth noting that the sample in this study was only from one grade in one school, and thus the findings should not be generalized for all the high school students in China or in other EFL contexts elsewhere. This means motivational orientations as measured by Self-Determination Theory could be further detected with different age groups and in multiple EFL contexts for future research. Intrinsic motivation was confirmed a strong factor in predicting EFL learning achievement in this study. Therefore, more research is needed to understand how to support the development of intrinsic motivation in EFL education. As the introjected regulation was found to go beyond its traditional role, more research could be conducted to explore its unique role in other Asian contexts. In addition, two learning engagement factors, ongoing effort and trouble avoidance, were identified from an originally one-construct instrument in this study. The unexpected divergence suggested an interpretation issue among Chinese students when adopting
instruments developed in the Western context. This finding also implies a large space in learning engagement classification and measurement studies in Chinese EFL context.

The findings of the study also have implications for education practice. This study highlighted the vital role of language learners’ self-determined motivation in EFL classroom education. First, intrinsic motivation, as the most self-determined form of motivation, was confirmed to predict EFL learning engagement and English language achievement. This finding implies that teachers should seek ways to support for the development of students’ intrinsic motivation in EFL classroom. According to the Self-Determination Theory (Deci & Ryan, 1985), motivational orientations are influenced by learners’ satisfaction of fundamental psychological needs for autonomy, competence, and relatedness. Social environment fulfilling the basic needs for autonomy, competence, and relatedness promotes self-determined forms of motivation, whereas social environment that undermines these needs lead to less self-determined motivation and amotivation. Chinese high school students have demonstrated a desire for learning autonomy in the progress of EFL educational reform (Halstead & Zhu, 2009). However, a majority of Chinese high school EFL teachers are still affected by the traditional education values, focusing on language drills, classroom control and teacher authority (Zhang & Liu, 2014), which, to an extent, undermine learner autonomy and self-confidence. As Reeve (1996, p. 28) stated, “the first step in supporting students’ autonomy is to minimize the use of superfluous social controls.” Future teacher training should put more effort on helping EFL teachers shift roles from knowledge disseminators to classroom facilitators for language learning. In the role of a classroom facilitator, EFL teachers should encourage students’ involvement in learning task design and give students freedom in choosing learning contents and methods, in order to foster a sense of responsibility and ownership in the learning process. In addition, art and music activities
in language classroom was found to enhance students’ perceptions of autonomy and competence (Jones et al., 2009). Although classroom activities could be limited by economic conditions at local schools, EFL teachers should strive to provide students maximal exposure to the linguistic beauty and the cultural diversity of English as a world language, by means of creative classroom activities, such as singing songs, poster design, and drama play.

Besides the importance of intrinsic motivation in EFL education, the unique role of introjected motivation is another finding of pedagogical significance in this study. Introjected motivation was noted to tap into teacher/parent expectations and to be a moderate contributor to language achievement of English test score. This finding means that Chinese culture-specific factors, such as respect for teachers and filial piety, could be used to help students set up relatedness in English lessons and academic success. Teachers should develop genuine interpersonal relationship with students by showing interest in students, respecting students’ ideas, and dedicating their time to students. This implication also echoes an ancient Chinese saying that only when students get close to their teacher are they willing to follow the teacher’s teaching. In addition to improving classroom teaching, EFL education should involve parents in students’ language learning process as well. Schools could launch extracurricular English learning activities, such as language-themed field trips, by involving students and their parents to work together. These activities may enable students to better understand their parents’ expectation on their language achievement, and eventually, to enhance self-determined motivation in English learning process.

There are multiple factors affecting students’ language learning achievement. Motivation is only one of the factors contributing to Chinese high school students’ EFL learning outcomes. This study addressed the research gap in the foreign language motivation literature by examining
SDT motivational orientations and its relationship with learning outcomes among a younger age group of high school students in Chinese EFL context. The findings contribute to a better understanding of the individual difference in motivation research and the important role of psychological factors in language education, particularly in the Chinese high school EFL education.
References


Deci, E. L., & Ryan, R. M. (2012). Motivation, personality, and development within embedded


Appendix A Letter of Approval from the General Research Ethics Board

September 07, 2017

Ms. Yaqi Hao
Master's Student
Faculty of Education
Queen's University
Kingston, ON, K7L 3N6

GREEF Ref #: GEDUC-865-17; TRAQ # 6821521
Title: "GEDUC-865-17 Investigating Chinese High School Students' Motivation, Learning Engagement, and Language Achievement in the English Classroom"

Dear Ms. Hao:

The General Research Ethics Board (GREB), by means of a delegated board review, has cleared your proposal entitled "GEDUC-865-17 Investigating Chinese High School Students' Motivation, Learning Engagement, and Language Achievement in the English Classroom" for ethical compliance with the Tri-Council Guidelines (TCPS 2 [2016]) and Queen's ethics policies. In accordance with the Tri-Council Guidelines (Article 6.14) and Standard Operating Procedures (405.001), your project has been cleared for one year. You are reminded of your obligation to submit an annual renewal form prior to the annual renewal due date (access this form at http://www.queensu.ca/traq/signon.html; click on "Events"; under "Create New Event" click on "General Research Ethics Board Annual Renewal/Closure Form for Cleared Studies"). Please note that when your research project is completed, you need to submit an Annual Renewal/Closure Form in Romeo/traq indicating that the project is 'completed' so that the file can be closed. This should be submitted at the time of completion; there is no need to wait until the annual renewal due date.

You are reminded of your obligation to advise the GREB of any adverse event(s) that occur during this one year period (access this form at http://www.queensu.ca/traq/signon.html; click on "Events"; under "Create New Event" click on "General Research Ethics Board Adverse Event Form"). An adverse event includes, but is not limited to, a complaint, a change or unexpected event that alters the level of risk for the researcher or participants or situation that requires a substantial change in approach to a participant(s). You are also advised that all adverse events must be reported to the GREB within 48 hours.

You are also reminded that all changes that might affect human participants must be cleared by the GREB. For example, you must report changes to the level of risk, applicant characteristics, and implementation of new procedures. To submit an amendment form, access the application by at http://www.queensu.ca/traq/signon.html; click on "Events"; under "Create New Event" click on "General Research Ethics Board Request for the Amendment of Approved Studies". Once submitted, these changes will automatically be sent to the Ethics Coordinator, Ms. Gail Irving, at the Office of Research Services for further review and clearance by the GREB or GREB Chair.

On behalf of the General Research Ethics Board, I wish you continued success in your research.

Sincerely,

Joan Stevenson, Ph.D.
Interim Chair
General Research Ethics Board

c: Dr. Lijing Cheng, Supervisor
Dr. Richard Reeve, Chair, Unit REB
Ms. Erin Rennie, Dept. Admin.
Appendix B Questionnaire (English)

Investigating Chinese High School Students’ Motivation, Learning Engagement, and Language Achievement in the English Classroom

This questionnaire is comprised of four sections, including demographic information, an English learning orientations scale, an English learning engagement scale, and a self-evaluation scale for English language proficiency. Please answer the questions as best as you can. Your responses will be used only in research but not in any way connected with your grades in the class. Thank you very much for your participation.

Section 1: Demographic Information

Please fill in each blank, or circle one answer for each question that best fits your situation.

1. Name: _____________
2. Student Number: _____________
3. Age: _____________
4. Sex:  
   a. Male  
   b. Female
5. When did you start learning English at school including in the classroom and in any English tutoring programs in or outside of your school?
   a. Kindergarten  
   b. Grade 1  
   c. Grade 2  
   d. Grade 3  
   e. Grade 4  
   f. Grade 5  
   g. Grade 6  
   h. Grade 7  
   i. Grade 8  
   j. Grade 9  
   k. Grade 10
6. How much time do you spend per day learning English after school (including independent study and study in after school English institutions)?
   a. 0-30 minutes
   b. More than 30 minutes up to 60 minutes
   c. More than 60 minutes up to 120 minutes
   d. More than 120 minutes
7. To what extent do you feel that your parent(s) set expectation on your English learning achievement?
   a. Not at all  
   b. Somewhat  
   c. High  
   d. Very high
Section 2: English Language Learning Motivational Orientations

This section contains a number of reasons why one might study the language of English. Beside each one of the following statements, circle the number from the scale which best indicates the degree to which the stated reason corresponds with one of your reasons for learning English. Remember that there are no right or wrong answers, since many people have different opinions.

1 = Does not correspond with me,
2 = Corresponds a little with me,
3 = Corresponds moderately with me,
4 = Corresponds a lot with me, and
5 = Corresponds exactly with me.

<table>
<thead>
<tr>
<th>I learn English ....</th>
<th>Does not correspond (1)</th>
<th>Corresponds a little (2)</th>
<th>Corresponds moderately (3)</th>
<th>Corresponds a lot (4)</th>
<th>Corresponds exactly (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. For the pleasure I experience when surpassing myself in my English studies.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. For the “high” I feel when hearing English spoken.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. In order to get a more prestigious job later on.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Because I have the impression that it is expected of me, e.g., from my teachers and my parents.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I don’t know; I can’t come to understand what I am doing studying English.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Because I would feel ashamed if I couldn’t speak to my friends from the English community in their native tongue.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Because I choose to be the kind of person who can speak English.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. For the “high” feeling that I experience while speaking English.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. For the enjoyment I experience when I grasp a difficult construct in English.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. In order to have a better salary later on.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. For the pleasure I get from hearing English spoken by native English speakers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. Because I would feel guilty if I didn’t know the language of English.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. Honestly, I don’t know; I truly have the impression of wasting my time in studying English.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
I learn English .... | Does not corres | Corrs exactly |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14. For the satisfaction I feel when I am in the process of accomplishing difficult exercises in English.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>15. Because I think it is good for my personal development.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>16. I cannot come to see why I study English, and frankly, I don’t give a damn.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>17. For the satisfied feeling I get in finding out new things in the process of learning English.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>18. To show myself that I am a good student because I can speak English.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>19. For the pleasure I experience in knowing more about the literature of the English group.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>20. Because I enjoy the feeling of acquiring knowledge about the English community and their way of life.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>21. Because I choose to be the kind of person who can speak more than one language.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

Section 3: English Language Learning Engagement

This section contains a number of statements describing behaviours that one might have in the process of learning English. Beside each one of the following statements, circle the number from the scale which best indicates the degree to which the stated behaviour corresponds with one of your behaviours in learning English.

1 = Does not correspond with me,
2 = Corresponds a little with me,
3 = Corresponds moderately with me,
4 = Corresponds a lot with me, and
5 = Corresponds exactly with me.

<table>
<thead>
<tr>
<th>Does not corres</th>
<th>Corrs exactly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I don't pay too much attention to the feedback I receive in my English class.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. I really work hard to learn English.</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th></th>
<th>Does not correspond exactly</th>
<th>Corrs-pons</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. When I have a problem understanding something we are learning in my English class, I always ask the instructor for help.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4. I can't be bothered trying to understand the more complex aspects of English.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5. I don't bother checking my corrected assignments in my English courses.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6. I have a tendency to give up when our English instructor goes off on a tangent.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7. I make a point of trying to understand all the English I see and hear.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8. When I am studying English, I ignore distractions and stick to the job at hand.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9. I keep up to date with English by working on it almost every day.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10. I tend to approach my English homework in a random and unplanned manner.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

**Section 4: Self-Evaluation for English Language Proficiency**

In this section, please rate your English language proficiency on a scale of 1-5. Please circle a number from the scale which best indicates your overall English proficiency and that in each of the four modules of reading, writing, listening, and speaking.

1 = Not good at all,
2 = Not good,
3 = Medium,
4 = Good, and
5 = Exceptional.

<table>
<thead>
<tr>
<th></th>
<th>Not good at all</th>
<th>Not good</th>
<th>Medium</th>
<th>Good</th>
<th>Exceptional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reading</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Writing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Listening</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Speaking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Overall</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

*End of Questionnaire*

*Thank you very much for your participation.*
Appendix C Questionnaire (Chinese)

中国高中生英语学习动机、参与与成绩调查

本问卷调查包含四个部分：基本信息、英语学习动机、英语学习参与和英语学习成绩自评。请依据您的真实情况，认真回答每一个问题。本问卷数据仅用于研究，您的回答与您的学业成绩没有任何关系。非常感谢您的参与！

第一部分：基本信息

这一部分，请依据您的真实情况，在每一个问题后的横线上填空或在选项上圈选。

1. 姓名：_________________
2. 学号：_________________
3. 年龄：_________________
4. 性别： a. 男       b. 女
5. 你从何时开始学习英语（包括课堂学习和任何校内外的英语辅导学习）？
   b. 幼儿园       b. 小学一年级       c. 小学二年级       d. 小学三年级
   e. 小学四年级       f. 小学五年级       g. 小学六年级       h. 初中一年级
   i. 初中二年级       j. 初中三年级       k. 高中一年级
6. 你每天课后（包括自习时间和课后辅导机构的课程）花多长时间学习英语？
   a. 0 ～ 30 分钟
   b. 多于 30 分钟至 60 分钟
   c. 多于 60 分钟至 120 分钟
   d. 120 分钟以上
7. 你感觉你的父母（或父母中的一方）对你学好英语的期望有多高？
   a. 完全没有       b. 有一些       c. 比较高       d. 非常高
第二部分：英语学习动机

这一部分列出很多学习英语的原因。在下面的每种原因旁边，有 1～5 五个数字，反映这个原因可能符合你的情况的程度，**请圈选出一个最符合你的情况的数字**。注意此处答案没有正误，因为你可以持有不同的观点。

1 = 与我的情况完全不一致
2 = 与我的情况有点一致
3 = 与我的情况比较一致
4 = 与我的情况非常一致
5 = 与我的情况完全一致

<table>
<thead>
<tr>
<th>我学习英语是....</th>
<th>完全不一致</th>
<th>完全一致</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 因为当我学习英语过程中有超好表现时，我会感到快乐。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2. 因为我喜欢聆听英语。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3. 为了将来能找到一份更理想的工作。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4. 因为我感到周围其他人（例如，老师、父母）期望我学习英语。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5. 我不想学习英语，因为我不知道为什么要学习英语。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6. 因为如果我不能与来自英语国家的朋友用英语交流，我会觉得难为情。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7. 因为我想要成为一个会说英语的人。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8. 因为我喜欢说英语。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9. 因为当我理解了以英语表达的、有难度的某个话题时，我感到快乐。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10. 为了将来挣得更高的薪资。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11. 因为我喜欢聆听英语母语人士的英语交谈。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>12. 因为如果我不懂英文，我会感到内疚。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>13. 我不想学习英语，因为我觉得学习英语浪费我的时间。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>
我学习英语是...  | 完全 不 | 完全 一致 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14. 因为能用英语完成一项困难的任务，让我有成就感。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>15. 因为我认为学习英语有助于我个人发展。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>16. 我不想学习英语，因为我不了解学习英语的意义与目的何在。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>17. 因为英语学习对我来说是新鲜事物，在英语学习过程中，我获得满足感。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>18. 因为英语学得好能显示我是一个好学生。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>19. 因为我喜欢阅读英语文学作品。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>20. 因为当我了解英语为母语的人士和他们的生活方式时，我会感到快乐。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>21. 因为我想要会说一种以上的语言。</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

第三部分：英语学习参与
这一部分列出很多有关英语学习行为的描述。在下面的每种描述旁边，有 1～5 五个数字，反映这个行为可能符合你的情况的程度，请圈选出一个最符合你的情况的数字。

1 = 与我的情况完全不一致
2 = 与我的情况有点儿一致
3 = 与我的情况比较一致
4 = 与我的情况非常一致
5 = 与我的情况完全一致

| 完全 不 | 完全 一致 |
|------------------|----------|----------|
| 1. 我不太关注在英语课上得到的评价和反馈。 | 1 2 3 4 5 |
| 2. 我真的非常努力地在学英语。 | 1 2 3 4 5 |
| 3. 当英语课上遇到难以理解的问题，我都会向老师请教。 | 1 2 3 4 5 |
| 4. 我懒得努力理解英语学习中较难的内容。 | 1 2 3 4 5 |
| 5. 我懒得查看自己英语课被批改的作业。 | 1 2 3 4 5 |
完全  完全
不  一致
一致

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<tr>
<td>6. 当英语老师上课跑题，讲到主题之外的内容，我就不想学了。</td>
<td>1</td>
<td>2</td>
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<tr>
<td>7. 我很重视随时随地努力理解自己看到和听到的英语。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. 在我学习英语的时候，我不容易被分散注意力，并且可以专注于当下的学习。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. 通过每天坚持学习英语，我不断更新自己的知识。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. 我常常做英语作业没有条理，没有安排。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

第四部分：英语学习成绩自评
在这一部分，请你在 1～5 分的范围内给自己的英语流利程度评分。请从听、说、读、写和总体水平五个角度，分别圈选出一个最符合你的水平的分数。
1 = 一点儿也不好
2 = 不太好
3 = 中等
4 = 好
5 = 非常好

|   |   |   |   |   |   |
|---|---|---|---|---|
| 1. 阅读 | 1 | 2 | 3 | 4 | 5 |
| 2. 写作 | 1 | 2 | 3 | 4 | 5 |
| 3. 听力 | 1 | 2 | 3 | 4 | 5 |
| 4. 口语 | 1 | 2 | 3 | 4 | 5 |
| 5. 总体 | 1 | 2 | 3 | 4 | 5 |

问卷结束。感谢您的参与！
Appendix D Letter of Information and Consent Form (LOI/CF)

Study Title: Investigating Chinese High School Students’ Motivation, Learning Engagement, and Language Achievement in the English Classroom

Name of Researcher: Yaqi Hao, Master of Education candidate, Faculty of Education, Queen’s University

Name of Supervisor: Liying Cheng, Faculty of Education, Queen’s University

You are invited to participate in this research to investigate Chinese high school students’ motivational orientations toward learning English, and the extent to which motivation contributes to learning engagement and language achievement in the English classroom. In particular, I am interested in the reasons why Chinese high school students study English, and the relationship among these reasons, learning engagement, and language achievement in the English course.

The research will be conducted during your English class. You will be asked to fill in a paper-based questionnaire that collects your responses on (1) basic information, (2) why you learn English, (3) how you are engaged in learning English, and (4) a self-evaluation for English language proficiency. Your participation will not be in any way connected with your grades in the class. It will take you 10-15 minutes to complete. Those of you, who have decided not to participate in the questionnaire, will be instructed to do a class assignment as an alternative task to completing the questionnaire.

As part of your participation in the study, your most recent English course test score will be collected from your English teacher. I will link your test score to your questionnaire response to investigate the relationship among motivation, learning engagement, and language achievement in the English course.

There is minimal risk involved in this study. Your teacher will not be present in the classroom for the duration of the study, therefore they will not know if you have chosen to participate or not. This should remove any potential power dynamics between you and your teacher. I do not foresee any other risks in your participation in this research. Although you may not directly benefit from participating in the research, information from the research will contribute to our understanding of your reasons for studying English and how your opinions about studying English may influence your learning engagement and achievement. This information may guide your teacher for future classroom teaching improvement and lesson development.

There is no obligation for you to take part in this research. You don’t have to answer any questions you don’t want to. You can stop participating at any point during the questionnaire. If you wish to withdraw after the questionnaire, you may contact me at yaqi.hao@queensu.ca within two weeks after the data collection. Your data will be deleted from the dataset.
I will keep your data securely for five years. Your confidentiality will be protected to the extent possible by replacing your identifying information (i.e., name and student number) with an arbitrary identity code for all data and in all publications. The code list linking identifying information with identity codes will be stored separately and securely from the data. Other than me, only my supervisor Liying Cheng will have access to any of the data. I hope to publish the results of this research in my master’s thesis and academic journals and present them at conferences. However, the results will be reported without your identifying information.

You are eligible to receive a small gift of a chocolate bar (worth equivalent to about 25 Canadian cents/1.35 yuan in Chinese currency) whether you choose to complete the questionnaire or not, or if you choose to withdraw.

If you have any ethics concerns please contact the General Research Ethics Board (GREB) at 1-844-535-2988 (Toll free in North America) or chair.GREB@queensu.ca.

If you have any questions about the research, please contact me, Yaqi Hao, at yaqi.hao@queensu.ca or my supervisor Liying Cheng, at liying.cheng@queensu.ca or 1-613-533-6000 ext. 79556.

This Letter of Information provides you with the details to help you make an informed choice. All your questions should be answered to your satisfaction before you decide whether or not to participate in this research.

Keep one copy of the Letter of Information for your records and return one copy to the researcher, Yaqi Hao.

Consent Form

By signing below, I am verifying that: I have read the Letter of Information and all of my questions have been answered.

Participant’s Signature: _______________________________________________________

Date: _____________________________________________________________________
Appendix E Scree Plots for Exploratory Factor Analyses

Scree Plot for Exploratory Factor Analysis with Direct Oblimin Rotation of English Language Learning Motivational Orientation Scale (n=390)

Scree Plot for Exploratory Factor Analysis with Direct Oblimin Rotation of English Language Learning Engagement Scale (n=390)
Scree Plot for Exploratory Factor Analysis with Direct Oblimin Rotation of Self-perceived English Language Proficiency (n=390)