Investigating L2 Motivation Self System and Autonomous English Learning Ability of Senior High School EFL Chinese Students

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Abstract

This research explored the relationship between Senior High School EFL Chinese students' second language motivational self-system (L2MSS) and autonomous English learning ability. The researcher collected quantitative data from 134 students and conducted semi-structured interviews with six students to obtain qualitative data to supplement the results of the quantitative data. These data were analyzed quantitatively and qualitatively using descriptive analysis, Pearson correlation, and thematic analysis methods. The results of the study showed that, first of all, in terms of L2MSS levels, high school students' overall L2MSS was at the medium level (M=3.6). Secondly, in terms of the level of autonomous English learning ability of high school students, the overall autonomous learning ability was moderate (M=3.2). Thirdly, the L2MSS levels and autonomous English learning ability levels of EFL Chinese senior high school studying in the Liberal Arts and Science program were significantly different. Science students' L2MSS and autonomous English learning ability levels were higher than those of Liberal Arts students. Fourthly, the Pearson correlation test showed that L2MSS was moderately positively related to autonomous English learning ability among high school students. The qualitative findings based on the semi-structured interviews provided more evidence to support the quantitative data for the connection of the L2MSS and autonomous English learning ability. Finally, this article suggests teachers can improve English autonomous learning ability of high school students through their second language motivational self-system in the process of English learning.

Keywords : L2 motivational self system, Ideal L2 self, Ought-to L2 self, L2 learning experience

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1. Introduction

Motivation theory has always been concern in the research field of second language teaching, and it has also been the research focus of experts and scholars in China and other countries. In foreign language teaching. Motivation is also of great research value and has a certain impact on the achievements of foreign language education. On the other hand, it

is also the source of foreign language learning and a continuous driving force in the process of foreign language leaning.

In 1986, Markus & Nurius proposed the "possible-selves theory". It holds that learners have three "possible selves": (1) the self that individuals want to achieve in the future; (2) The self that individuals think they can achieve in the future; (3) The individual is afraid and does not want to be himself. In 1987, Higgins proposed "Self-discrepancy Theory". The theory believes that individual self-discrepancy is constructed from three elements: "ideal self", "ought self", and "actual self".

In 2005, Dörnyei based on the "Possible Selves Theory" and "Self-discrepancy Theory" in social psychology, created a new motivation theory for second language learning, namely the "L2 Motivational Self System" theory (hereinafter referred to as L2MSS) (Lashari, Umrani & Buriro, 2021). The theory holds that L2MSS consists of the following three elements: "ideal L2 self", "ought-to L2 self" and "L2 learning experience".

The concept of autonomous learning has gradually emerged since the 1960s. The main schools are Garden & Miller (1990), Holec (1981), Jeffries (1910), etc. The concept of autonomous learning is relatively complex and formed early. So far, there is still no unified definition. In the field of foreign language teaching, Holec (1981) took the lead in defining autonomous learning as "the ability of learners to be responsible for their own learning" (Lou, 2021). That is, learners can deeply understand learning objectives, actively choose learning materials and methods suitable for themselves, and can evaluate and monitor. His theory mainly covers learning objectives, learning contents, learning methods, learning process and learning effect (Yildiz & Yucedal, 2020).

After Holec put forward his relevant concepts, some scholars have devoted themselves to exploring the factors that affect autonomous learning at the empirical level, such as those shown in Figure 1: i.e., learner beliefs, self-efficacy, motivation, etc. Among them, learning motivation has always been the focus of research in the field of autonomous learning, and is also considered to be one of the important affective factors affecting language learning.
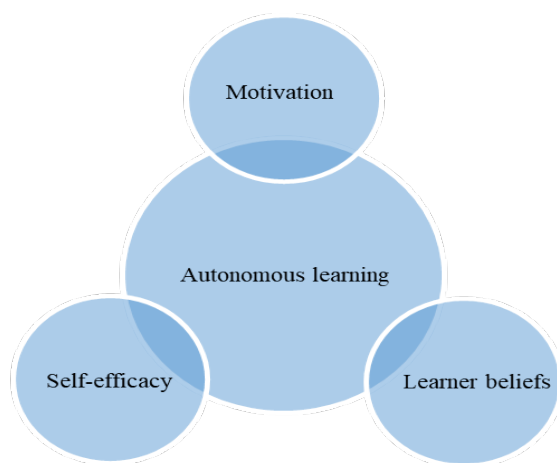

Figure 1. Influencing Factors of Autonomous Learning (Aripova, 2021)

It can be seen that second language motivation and autonomous learning are both popular topics in second language learning research in recent years (Aripova, 2021). Although a lot of research has been carried out and outstanding results have been achieved in these two aspects (Chalupa & ter Haseborg, 2014), in actual research, most of them are studies on the impact of motivation on autonomous learning, but the research on the impact of specific dimensions is not accurate enough (Keskin, 2019). At the same time, a large number of studies mainly focus on the impact of motivation on learning autonomy, however, there is a lack of research on the relationship between second language motivation and the latest theory of second language motivation and students' learning autonomy (Alamer, 2022). And the relevant research in China and other countries also failed to reach conclusive agreement on the concepts (Bozavli, 2021). In addition, many studies were also carried out around college students and graduate students, and there were fewer documents conducted to explore comprehensive analysis of autonomous English learning combined with L2MSS of senior high school EFL Chinese students (SWATEVACHARKUL, 2021). Therefore, it is necessary to carry out more research on the relationship between L2MSS and autonomous English learning ability of Chinese high school students.

2. Research Objectives

2.1 To explore the levels of learners' L2 motivational self system and autonomous English learning ability of senior high school EFL Chinese students.

2.2 To explore the differences of the Learners' L2 Motivational Self System and autonomous English learning ability of senior high school EFL Chinese students studying Liberal Arts and Science program.

2.3 To explore the correlation between L2MSS and autonomous English learning ability of senior high school EFL Chinese students.

3. Research Questions

3.1 What are the levels of Learners' L2 Motivational Self System of senior high school EFL Chinese students?

3.2 What are the levels of autonomous English learning ability of senior high school EFL Chinese students?

3.3 Are there any differences between the Learners' L2 Motivational Self System and autonomous English learning ability of senior high school EFL Chinese students studying Liberal Arts and Science program?

3.4 Is there any relationship between Learners' L2 Motivational Self System and autonomous English learning ability of senior high school EFL Chinese students?

4. Literature Review

This section focuses on research on L2MSS and autonomous learning in China and other countries, and the correlation between L2MSS and autonomous learning.

4.1 The research on L2MSS in China and other countries

The L2MSS comprises three components: ideal L2 self, ought-to L2 self, and L2 learning experience (Dörnyei, 2005).

(1) The ideal L2 self refers to the ideal second language state and level that learners strive to pursue and hope to achieve in the future. Dörnyei believes that the traditional integrative motivation stems from learners' recognition of the target language cultural environment and hopes to integrate into the target language community (Ghanizadeh & Rostami, 2015). However, under the background that English has become an international language, the defects of integrative motivation are increasingly obvious, which can no longer explain learners' motivation in foreign language environment. Most learners do not integrate into the target language community, but are only interested in the target language culture, or hope to achieve some success with the help of the target language. At this time, learners' learning motivation is an internalized instrumental motivation, also known as Promotion Instrumentality (Gardner, 2001). Therefore, the theory holds that the ideal second language self is influenced by both integrative motivation and instrumental motivation.

(2) Ought-to L2 Self refers to some characteristics that learners think they should have in their second language learning based on their responsibilities and obligations to meet their social environment, such as the expectations and requirements of their family, friends and teachers, or to avoid some negative results. Among them, parents are the most important influencing factors. Learners hope to master the second language skillfully, just to meet the expectations and requirements of others and passively fulfill their own responsibilities and obligations. At this time, the main motivation of learners is external instrumental motivation, also known as prevention instrumentality (Ametova, 2020).

(3) L2 Learning Experience refers to the learners' current learning experience, which is mainly related to their previous learning experience, and the influence of the past on the present, and is related to their past second language learning experience and learning environment, such as their past successful or unsuccessful second language learning experience. Successful second language learning experience give learners a strong sense of self-efficacy, thus strengthening their confidence in second language learning. However, the failure of learning experience will seriously affect the students' self-confidence, fear and anxiety about second language learning. Therefore, learning self-confidence, learning anxiety and fear are important factors that affect motivation related to second language learning experience (Dörnyei, 2019). To sum up, the model of the theoretical hypothesis of L2 motivational self-system is shown in Figure 2.
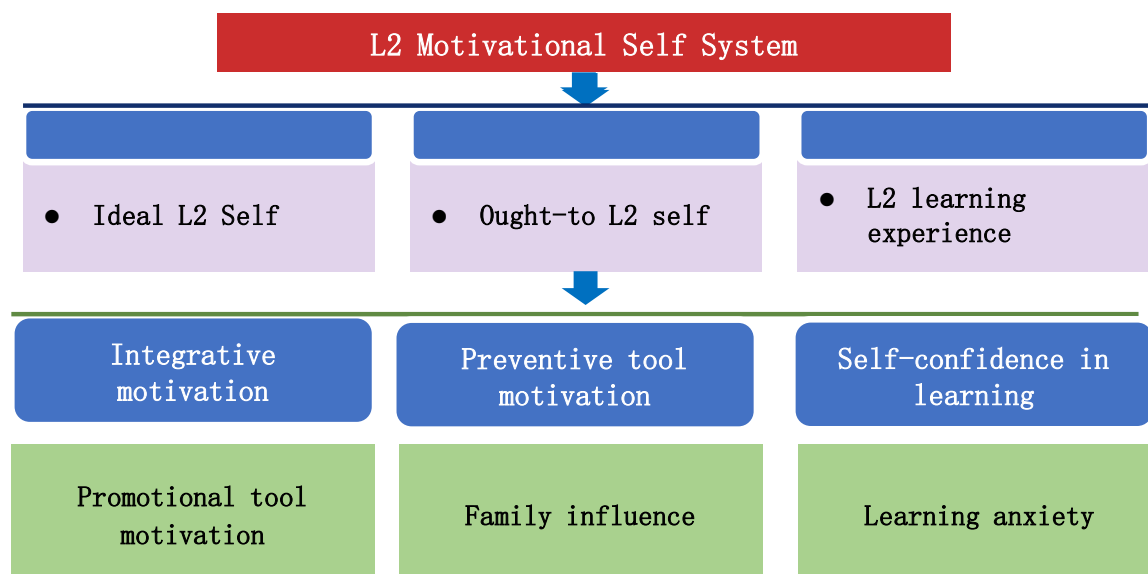
Figure 2. L2 motivational self-system Hypothetical Model (Martin, 2022)

L2MSS theory makes up for the shortcomings of traditional integrative motivation and instrumental motivation, emphasizes the dynamic, complex and situational nature of motivation, and comprehensively explains the essence of motivation. This theory holds that "integrative motivation" is only applicable to relevant research in the target language environment, that is, the second language learning environment (Alzubaidi, Aldridge & Khine, 2016). The "ideal L2 self" is more suitable for the relevant research in the sociolinguistic environment, that is, the foreign language learning environment (Wight, 2015). Under the background that English has gradually become the universal language in the world, the empirical research based on L2MSS has become the focus of motivation research.

4.2 The research on Autonomous learning in China and other countries

As for the concept knowledge of autonomous learning ability, interesting research outputs have been initiated by educational researchers in China and other countries have given different opinions. Take for example, figure 3 has been conceptualized for autonomous learning to associate with level of active learning, spontaneous learning, self-education, self-regulated learning, self-supervised learning, self-evaluation and reflection, etc.
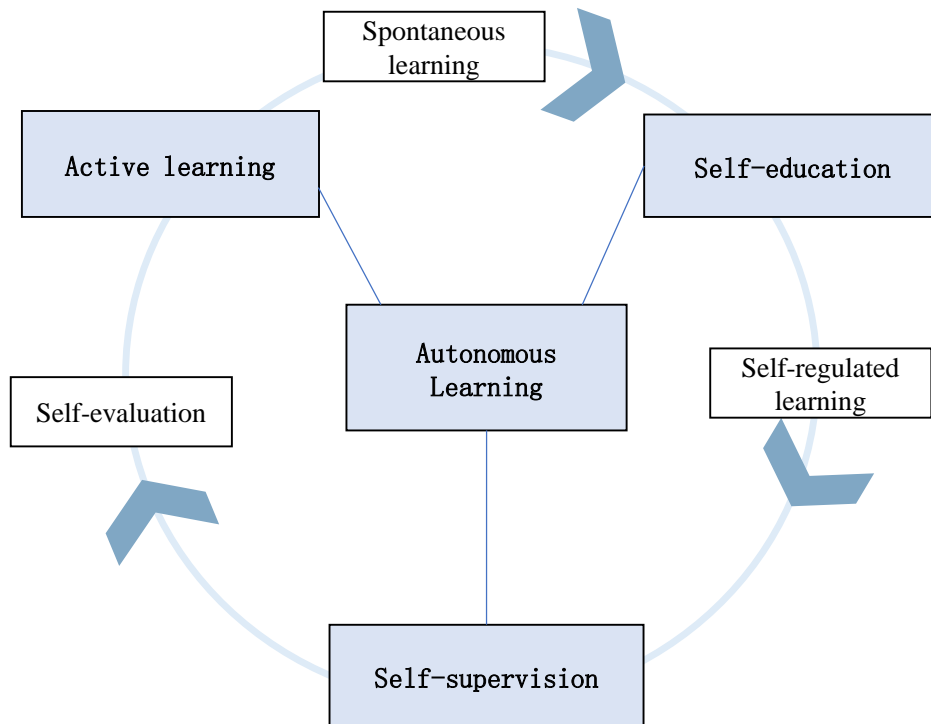
Figure 3. The Conceptual framework of Autonomous Learning (Cullen, 2019)

Dickinson (1993) pointed out that autonomous learning is both an attitude to language learning and an ability to learn independently. Learners can set their own learning goals and monitor their own learning strategies. Nunan (1995) believed that autonomous learners should have the ability to determine their own learning goals and create learning opportunities based on these goals, and stressed the importance of setting self-goals in autonomous learning.

Clifford (1999) believed that autonomous learning is a potential self-learning behavior. The study pointed out that if we want to encourage autonomous learning in universities, staff need to develop new teaching concepts and new skills, because they change from the role of knowledge experts to the role of facilitators, and students need to develop new learning strategies, from passive learners to autonomous learners. Pemberton & Pierson (1996), and Masouleh & Jooneghani, (2012) also defined the concept of autonomous learning from different perspectives. They viewed autonomous learning as a form of unrestrained learning, and in the field of language teaching, teachers used various strategies to provide a framework for students' independent learning to help them develop autonomy.

Under the continuous influence of foreign excellent scholars' research in this field, many excellent Chinese scholars have also begun to make a lot of investigations and analysis on the theory of autonomous learning. The proposal of "autonomous learning" in China, on the one hand, reflects the new achievements of the study of China's learning field, on the other hand, it raises a series of new and fundamental issues for the current education and teaching reform in China.

As a global language, English is one of the compulsory subjects for the college entrance examination in China, and its score is relatively high (Davey & Higgins, 2007). It is a necessary skill for senior high school students to develop in the future, therefore, the requirements for senior high school students' English learning are becoming higher and higher, senior high school students' English learning motivation is becoming stronger and stronger. The English knowledge taught by teachers in class is limited (Dudeney & Hockly, 2007), so students are required to have stronger autonomous learning ability. Moreover, the issue of "autonomous learning" has been established as an important research content by the national educational science "Ninth Five-Year Plan", which shows its importance and its broad consensus in the theoretical circle (Zhou, 2020). Therefore, it is necessary to cultivate the habit of autonomous English learning, deepen its research, and clarify its connotation, position and significance in the process of education.

For example, Chinese scholar Lai and Wang (2012) believed that autonomous learning includes attitude, ability and environment. Therefore, autonomous learning is a long-term and dynamic development process, not a static one. Once autonomous learning achieves its goal, it will continue to develop forever. Du (2020) proposed that autonomous learning behavior is that students can make their own summary, analysis and management of learning plans in the process of learning analysis and management. In this learning process, learners can make corresponding changes to their learning attitudes and psychological conditions according to their learning objectives and learning plans. In this whole process, learners have autonomy, initiative and consciousness for learning.

Yang and Cheng (2019) believed that "autonomous learning" is a positive construction process of self-design, self-management, self-regulation, self-test, self-evaluation and self-transformation in the aspects of learning objectives, processes and effects.

In China, Pang (2001) summarized and put forward the systematic concept of autonomous learning behavior ability. In his theoretical research, the definition of autonomous learning is mainly divided into horizontal and vertical aspects. More specifically, learners can formulate learning plans and learning objectives according to the learning content before learning, and in this process, they can make specific changes and adjustments to learning methods and learning plans according to the specific learning content (Liu, 2016).

At the same time, after reading and analyzing the research of scholars in China and other countries, it can be seen that the scholars seem to have different opinions and differences on the accurate concept of autonomous learning behavior ability. Whether scholars define autonomous learning as ability, behavior or attitude, scholars agree that the definition of autonomous learning behavior is almost from learning content, learning method, learning process, self-monitoring and self-evaluation are analyzed and studied. This study adopts Xu's point of view. She believes that autonomous learning, especially English autonomous learning, means that learners consciously transform teachers' teaching goals into their own learning goals, including short-term goals and long-term goals. Then learners make corresponding learning plans according to their learning objectives, use multiple learning strategies in the learning process, monitor the use of learning strategies,

and finally comprehensively monitor and evaluate their English learning process (Xu & Liu, 2019).

4.3 The Correlation between L2MSS and Autonomous Learning

L2 motivation, as an important factor affecting learner autonomy, has been fully explored in relevant studies in China and other countries. On the relationship between the two, scholars' conclusions are controversial.

Due to the outbreak of the COVID-19, the Ministry of Education of China immediately studied and judged the situation and made a decisive decision. On February 4, 2020, it issued the Guiding Opinions on Doing a Good Job in the Organization and Management of Online Teaching in Ordinary High Schools during the Period of Epidemic Prevention and Control, and decided to fully implement online teaching in high schools. With the support of emerging technologies, China's education mode is also changing, and learning mode has become more autonomous and informal. Various online resources have promoted autonomous learning. As early as 2016, some researchers mentioned that when using online resources, it is very important to first understand the motivation of autonomous learners. The research results show that when helping learners understand how to use online learning resources, learners' motivation factors and the autonomous learning aspects of informal learning are improved (Song, 2016).

Zhou (2018), Aripova (2021), Spratt (2002) and other scholars believed that motivation could affect autonomous English learning. Dickinson (1995), Chalupa and Haseborg (2014) and other scholars believed that autonomous English learning could affect motivation, it is inevitable that there is a correlation between them.

Pollard (2015) explored how to cultivate learner autonomy from the perspective of stimulating learning motivation. This study focused on the Web 2.0 portal for language learners. The portal discussed is Lang-8, which is similar to the blog platform and also provides functions similar to social networking services. The research results showed that the use of Lang-8 had a positive impact on the motivation level of the participants. Through receiving different corrective feedback, they obtained a positive experience and contacted a portal that allowed participants to learn autonomously.

In summary, there were many studies on second language motivation and autonomous learning, but most studies on motivation and autonomous learning were separate. In addition, many studies also focused on college and graduate students, and there was little literature exploring the comprehensive analysis of autonomous learning and L2MSS among Chinese high school students. Therefore, it was necessary to conduct more research on the relationship between L2MSS and autonomous learning of Chinese high school students.

5. Research Methodology

5.1 Population and Sample

The population of this main research were 1,418 third grade of senior high students. The sample of this main study were 134 students from class 12, class 13, class 17, and calculated based on the appropriate sample size set up the degree of error at the level of 0.05 and set a goal of achieving 0.95 Power (1-β err prob) suggested by G Power software as in Figure 4.
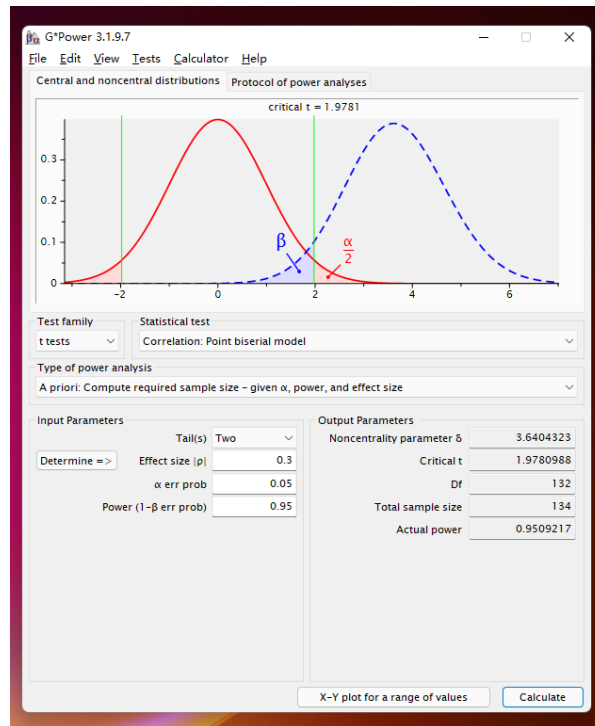

Figure 4. Sample Quantity Calculation using G-Power

5.2 Research Design

This study took the form of non-experimental correlational study and used questionnaires for quantitative data analysis and semi-structured interviews for qualitative data analysis. First of all, the questionnaire was distributed to 134 students from Senior High School. After that, a total of 6 students were selected to participate in semi-structured interviews based on their high, medium, and low scores in the mid-term English exam. To answer the research questions, quantitative data were analyzed using descriptive analysis and Pearson correlation based on the SPSS 26 program, while qualitative data were analyzed using thematic analysis.

5.3 Research Instruments

Questionnaire: The L2MSS questionnaire contains 25 items, including 6 items of ideal L2 self; There were 11 items in ought-to L2 self; The L2 learning experience consisted of 8 items. The questionnaire on autonomous English learning ability has 30 items: The understanding of teaching objectives and requirements included 3 items (1, 2, 3); The

formulation of learning objectives and plans included 5 items (4, 5, 6, 7, 8); Effective use of learning strategies included 5 items (9, 10, 11, 12, 13); Monitoring the use of learning strategies included 7 items (14, 15, 16, 17, 18, 19, 20); Learning process management included 10 items (21, 22, 23, 24, 25, 26, 27, 28, 29, 30). A total of 134 questionnaires were distributed from Class 12, 13, and 17 of a high school in China.

Semi-structured Interview: There were five interview questions in total. Then, the interview information was translated from Chinese to English, and another colleague verified the accuracy of the translation.

5.4 Validity and Reliability

The research instruments were considered valid after the questionnaires and interview questions were sent to three experts from China for Item Objective Congruence (IOC). Report the value of the content validity. In order to ensure the reliability, the questionnaire was sent to 40 Chinese high school students to pilot test the instruments.

Table 1
Reliability Analysis

	Cronbach's Alpha	Items
L2MSS	0.915	25
Autonomous English Learning Ability	0.937	30

As shown in Table 1, the Cronbach's Alpha value of L2MSS was 0.915, and the Cronbach's Alpha value of autonomous English learning ability was 0.937. The reliability of both scales above 0.9 indicates that both scales were very reliable and could be used for the research.

To ensure the reliability of semi-structured interviews, the interview content was evaluated by two raters, who were English teachers with over 5 years of experience in English teaching. Based on the internal code of the interview content keywords, the coded data was analyzed, with results of 0.91 and 0.93 respectively, it indicated that the interview content had good reliability and could be used for the research.

5.5 Data Collection

After being approved by High School, the students signed a consent form and participated in the study. 134 participants completed a questionnaire in the classroom. After analyzing the results of the questionnaire for half a month, a total of six participants were selected to conduct semi-structured interviews during extracurricular time at school based on their high, medium, and low English scores in the mid-term exam. For ethical reasons, participants were informed that this questionnaire and interview had no impact on their course scores and that their names would be kept confidential, so that they could honestly

provide answers in the questionnaire and interview. Thereby ensuring the authenticity and reliability of the collected data.

5.6 Data Analysis

To analyze the participants' L2MSS and autonomous English learning abilities, quantitative data were used to calculate mean and standard deviation (SD) scores for each questionnaire component via SPSS 26. The researcher utilized Creswell's six steps of data analysis in qualitative research (Creswell, 2012).

Table 2 shows the categories of the semi-structured interviews, and the key words used in the coding process.

Table 2
Categories of semi-structured interview findings

Category	Coded Keywords
Ideal L2 self	Strong motivation for L2 learning; Ideal L2 self learning reaches the level I often imagine; The goal to be achieved in Ideal L2 self level; Desiring to pursue an ideal L2 self state;
Ought-to L2 self	Some characteristics that learners think they should have; In order to achieve the Ought-to L2 proficiency; The expectations and requirements of parents, teachers and friends; Influence of external environment;
L2 learning experience	Successful L2 Learning Experience; Unsuccessful L2 Learning Experience; Positive L2 Learning Experience; Negative L2 Learning Experience;
Autonomous English learning	Understanding teaching objectives; Clear learning objectives; Effective learning strategies; Learning strategy monitoring; Learning process management;

6. Results and Discussion
6.1 Data Analysis for the First Research Question

6.1.1 Analysis the Situation of L2MSS among Chinese High School Students

Table 3

Overall Descriptive Statistics of L2MSS

Descriptive Statistics					
	N	Minimum	Maximum	M	S.D.
Ideal L2 self	134	1.0	6.0	3.7	1.4
Ought-to L2 self	134	1.0	5.8	3.3	.9
L2 learning experience	134	1.0	6.0	3.1	1.2
L2MSS	134	1.0	5.4	3.6	.7
Valid N (List Status)	134				

Table 4

L2MSS Level Distribution

		Frequency	Percentage	Effective percentage	Cum. Pct
Different levels	Low-level	26	19.4	19.4	19.4
	Medium-level	42	31.3	31.3	50.7
	High-level	66	49.3	49.3	100.0
	Total	134	100.0	100.0	

According to Table 3, it can be clearly seen that the mean value of L2MSS reaches 3.6, which is higher than 3.5, indicating that the overall performance of L2MSS is at a moderate level, this result is consistent with Zhou's research findings, and all three dimensions of L2MSS are at a moderate level (Zhou, 2022). Table 4 shows the distribution of L2MSS among 134 subjects at low, medium, and high levels. Among them, high-level learners are the majority, accounting for 49.3%, while low-level learners are the least, accounting for only 19.4%.

6.1.2 Analysis of semi-structured interview results

Related interview theme 1: Ideal L2 self

Strong motivation for L2 learning

"I usually enjoy watching English short videos, listening to English songs, and watching English movies. I think learning English is very interesting." (Interviewee 1)

"I believe that learning English can help me learn foreign customs and cultures, and I have a great passion for learning English." (Interviewee 2)

The goal to be achieved in Ideal L2 self level

"I hope to achieve better results in the college entrance examination with English, in order to enter a better university." (Interviewee 4)

Ideal L2 self learning reaches the level I often imagine

Many participants chose to learn English because it is a globally recognized international language, and if they travel, they can better communicate with local people. English plays a crucial role in students' future career choices. In China, many companies are foreign and multinational, allowing for better communication with colleagues.

"There are no obstacles to communicating with others when traveling abroad alone." (Interviewee 2)

"The need for future work, as many companies are now multinational corporations." (Interviewee 6)

Desiring to pursue an ideal L2 self state

The interviewee said he was interested in learning programming and found that almost all of them were "English words". "I hope that learning English will be helpful for me in learning programming."

"It may be helpful for me to learn programming in the future." (Interviewee 5)

Related interview theme 2: Ought-to L2 self

Some characteristics that learners think they should have

"I hope to achieve certain achievements in my future university studies and work with the help of English." (Interviewee 4)

Influence of external environment

"English is very important for future university studies, graduate exams, or work." (Interviewee 3)

"To cope with the college entrance examination." (Interviewee 5)

"English accounts for a higher proportion of points in the college entrance examination." (Interviewee 1)

"The overall score of the college entrance examination is closely related and deeply affects their future academic." (Interviewee 3)

"I hope to achieve better results in the college entrance examination with English, in order to enter a better university." (Interviewee 4)

In order to achieve the Ought-to L2 proficiency

"The need for future work, as many companies are now multinational corporations." (Interviewee 6)

"Learning English well is to surpass my classmates in English grades." (Interviewee 4)

The expectations and requirements of parents, teachers and friends

"My parents' expectations are the main driving force for me to learn English." (Interviewee 1)

"Learning English well is to receive praise from the teacher." (Interviewee 3)

Related interview theme 3: L2 learning experience

Successful L2 Learning Experience

"Enhance my confidence in English learning, it can better understand our native language." (Interviewee 6)

Unsuccessful L2 Learning Experience

"The expectations of others will bring some pressure and trouble to my English learning." (Interviewee 5)

Positive L2 Learning Experience

"Learning English has made my logical thinking ability more rigorous." (Interviewee 4)

Negative L2 Learning Experience

"High school English courses are more complex, and I have some language learning anxiety.' (Interviewee 5)

6.2 Data Analysis for the Second Research Question

6.2.1 Analysis the situation of Chinese high school students' autonomous English learning ability.

Table 5

Overall status of autonomous English learning ability

	N	Minimum	Maximum	Mean	S.D.
Understanding teaching objectives	134	1.0	5.0	3.3	0.9
Setting learning objectives	134	1.0	5.0	3.0	0.9
Learning strategy use	134	1.0	5.0	3.4	0.8

Learning Strategy Monitoring	134	1.1	5.0	3.2	0.8
Learning Process Management	134	1.0	4.7	3.1	0.8
Autonomous English learning ability	134	1.1	4.6	3.2	0.7
Valid N (list status)	134				

Table 6

Distribution of autonomous English learning ability levels

		Frequency	Percentage	Effective percentage	Cum. Pct
Different levels	Low-level	15	11.2	11.2	11.2
	Medium-level	73	54.5	54.5	65.7
	High-level	46	34.3	34.3	100.0
	Total	134	100.0	100.0	

According to Table 5, it is clear that the mean of all dimensions of Chinese high school students' autonomous English learning ability is higher than 2.5, and the overall mean of autonomous English learning ability reaches 3.2, which is lower than 3.4. Table 6 shows the distribution of 134 Chinese high school students' autonomous English learning ability in the low, medium and high levels. The majority of them are of medium level, reaching 54.5%, and the least of them are of low level, accounting for only 11.2%. Therefore, a comprehensive analysis of the results leads to the conclusion that the overall performance of Chinese high school students' autonomous English learning ability is moderate.

6.2.2 Analysis of semi-structured interview results

Related interview theme 2: Autonomous English learning

Understanding teaching objectives
"I will cultivate a good habit of previewing and focus on reviewing methods and understanding the teacher's teaching objectives. (Interviewee 2)

Clear learning objectives
"I will clarify my learning objectives and cultivate self-control ability." (Interviewee 3)

Effective learning strategies

Most participants hope to develop effective learning strategies by watching movies, listening to music, building confidence in English learning, and previewing knowledge points before class.

"I will cultivate my interest in learning English, such as watching more English movies and listening to more English songs." (Interviewee 1)

"I will preview new knowledge points before class." (Interviewee 5)

Learning strategy monitoring

One interviewee mentioned the need to constantly monitor his learning process and enhance his knowledge reserve ability.

"I will build confidence in English learning and formulate effective learning strategies." (Interviewee 4)

Learning process management

"I will supervise my learning process and promptly consult my teacher when encountering any knowledge points that I do not understand." (Interviewee 6)

6.3 Data Analysis for the Third Research Question

6.3.1 L2MSS levels among EFL Chinese high school students studying Liberal Arts and Science program

Table 7

L2MSS levels among EFL Chinese high school students studying Liberal Arts and Science program

	M		t-value	df	P
	Science (N=90)	Liberal Arts (N=44)			
Ideal L2 Self	4.0	2.9	-4.0	71.1	0.000*
Ought-to L2 Self	3.7	3.2	-2.6	68.6	0.011*
L2 Learning Experience	3.5	2.5	-4.6	132	0.000 *
L2MSS	3.7	2.9	-4.9	132	0.000*

As seen in Table 7 Independent samples t-test of L2MSS levels of high school students from different academic program backgrounds, there was a significant difference in L2MSS levels between Liberal Arts and Science subjects in terms of overall L2MSS

levels (t=-4.9, df=132, p=0.000 < 0.05). Specifically, L2MSS levels were significantly lower in the Liberal Arts than in the Sciences (MD=-0.8).

6.3.2 Autonomous English learning ability among Chinese high school students with different arts and science backgrounds

Table 8

Autonomous English learning ability among EFL Chinese high school students studying different academic program

	M		T-value	df	P
	Science (N=90)	Liberal Arts (N=44)			
Understanding teaching objectives	3.5	3.1	-2.8	132	0.006*
Setting learning objectives	3.2	2.6	-4.0	132	0.000*
Learning strategy use	3.5	3.2	-1.6	132	0.118
Learning Strategy Monitoring	3.3	2.9	-2.3	132	0.021*
Learning Process Management	3.2	2.8	-2.2	132	0.026*
Autonomous English learning ability	3.3	2.9	-3.1	132	0.002*

According to the results of autonomous English learning ability t-test, the significance of learning strategy use was 0.118, which was higher than 0.05 but did not reach the significance level. The significance of all other dimensions is lower than 0.05, therefore, we can infer that there is a significant difference in the level of autonomous English learning ability between EFL Chinese high school students of different Liberal Arts and Science programs, except for the use of learning strategies, and Liberal Arts students are lower than those Science students (see Table 8).

6.3.3 Analysis of semi-structured interview results

Related interview theme 1: Ideal L2 self

Strong motivation for L2 learning
"I usually enjoy watching English short videos, listening to English songs, and watching English movies. I think learning English is very interesting." (Interviewee 1 Arts student)

"Learning English has made my logical thinking ability more rigorous." (Interviewee 4 Science student)

The goal to be achieved in Ideal L2 self level

"I want to choose an English major in college and work in English related fields in the future." (Interviewee 1 Arts student)

"I hope to achieve certain achievements in my future university studies and work with the help of English." (Interviewee 4 Science student)

Ideal L2 self learning reaches the level I often imagine

Some interviewees expressed the hope of using English for communication in the future, hoping to become proficient in English and travel abroad.

"I have a strong desire to communicate with foreigners in English in the future." (Interviewee 3 Science student)

"I hope to master English proficiently and travel to Europe." (Interviewee 5 Science student)

Related interview theme 2: Ought-to L2 Self

The expectations and requirements of parents, teachers and friends

Most respondents stated that the expectations of their parents, teachers, and friends are the driving force behind their English learning. In order not to disappoint or anger them, they will work harder to learn English. A respondent stated that these external factors can sometimes bring him some pressure and trouble, and he don't know how to learn English better.

"Yes. My parents' expectations are the main driving force for me to learn English." (Interviewee 1 Arts student)

"Yes. Learning English well is to receive praise from the teacher." (Interviewee 3 Science student)

"Yes. Learning English well is to surpass my classmates in English grades." (Interviewee 4 Science student)

Some characteristics that learners think they should have

A respondent stated that learning English is to gain her own recognition, not the expectations of others, hoping to enhance her own connotation and make herself better. Another interviewee expressed the hope that good English can provide better job opportunities for himself in future employment.

"I study English to gain my own recognition and make myself better." (Interviewee 2 Arts student)

"Learning English can provide me with more job opportunities." (Interviewee 6 Science student)

Related interview theme 3: L2 learning experience

Successful L2 Learning Experience
"In order to better understand our native language." (Interviewee 6 Science student)

Positive L2 Learning Experience
"L2 Learning Experience can help me understanding foreign customs and cultures." (Interviewee 2 Arts student)

Related interview theme 4: Autonomous English learning

Understanding teaching objectives
"Focus on reviewing methods and understanding the teacher's teaching objectives." (Interviewee 2 Arts student)
"I will clarify my learning goals and cultivate self-control ability." (Interviewee 3 Science student)

Clear learning objectives
"I will cultivate a good habit of previewing and focus on reviewing methods." (Interviewee 2 Arts student)
"I will preview new knowledge points before class." (Interviewee 5 Science student)

Effective learning strategies
"Watching more English movies and listening to more English songs." (Interviewee 1 Arts student)
"I will build confidence in English learning and formulate effective learning strategies." (Interviewee 4 Science student)

Learning Strategy Monitoring:
"When I watch English movies or listen to English songs, I will judge how many sentences I can understand." (Interviewee 1 Arts student)
"After class, I will consolidate my English knowledge." (Interviewee 4 Science student)

Learning Process Management:
"I will supervise my learning process and promptly consult my teacher when encountering any knowledge points that I do not understand." (Interviewee 6 Science student)
Liberal arts students unanimously believe that learning process assessment is the best method of learning process management.

6.4 Data Analysis for the forth Research Question

6.4.1 Analysis of the overall correlation between L2MSS and autonomous English learning ability of EFL Chinese high school students

Table 9
Test for correlation between L2MSS and autonomous English learning ability of EFL Chinese high school students

Variables	Average	Pearson correlation	P
L2MSS	3.5	0.592**	0.000**
Autonomous English learning ability	3.2		

As shown in Table 9, the L2MSS of EFL Chinese high school students was significantly and moderately positively correlated with autonomous English learning ability (r= 0.592, p=0.000).

6.4.2 Analysis of semi-structured interview results

Related interview theme 2: Ought-to L2 self

The expectations and requirements of parents, teachers and friends
"The main driving force is to enhance my confidence in English learning and receive praise from my teachers." (Interviewee 6 Science student)

Influence of external environment
"English accounts for a higher proportion of points in the college entrance examination." (Interviewee 1 Arts student)
"The overall score of the college entrance examination is closely related and deeply affects their future academic." (Interviewee 3 Science student)

Related interview theme 4: Autonomous English learning

Effective learning strategies
"I will cultivate a good habit of previewing and focus on reviewing methods." (Interviewee 2 Arts student)

Learning process management

"I will supervise my learning process and promptly consult my teacher when encountering any knowledge points that I do not understand." (Interviewee 6 Science student)

Among the six students interviewed in the semi-structured interview, when asked about their English learning motivation, the respondents all stated that English accounts for a large proportion of the score in the college entrance examination, which is closely related to the overall score of the college entrance examination and deeply affects their future academic and work. This indicates that high school students hope to achieve better results in the college entrance examination through English, in order to enter better universities.

Meanwhile, parents, teachers, and friends still greatly influence the L2MSS of high school students, the influence of parents, teachers, and friends mainly corresponds to the learner's ought-to second language self.

Interviewee 5 mentioned multiple times that his English learning process is quite difficult, with negative English learning experiences, and a certain level of language learning anxiety and lack of confidence in English learning. Other respondents mentioned their relatively positive experiences in second language learning. We can conclude that there is a profound relationship between second language learning experience and the generation of learners' second language learning motivation.

7. Conclusion

Based on previous studies, this research conducted a questionnaire and semi-structured interviews with Chinese high school students. The corresponding conclusions were drawn in response to four research questions.

(1) It can be clearly seen that the mean value of L2MSS reaches 3.6, which is higher than 3.5, indicating that the overall performance of L2MSS is at a moderate level. This is similar to the L2MSS of high school students studied by Irgatoğlu (2021), which is at a moderate level. On each dimension, the ideal second language self is at the medium level (M=3.7), and the ought-to second language self is at the low level (M=3.3) and second language learning experience is at the low level (M=3.1).

From the semi-structured interviews, it can be concluded that most students chose to learn English because they liked it and were interested in foreign customs and cultures, and had a great passion for learning English.

(2) Chinese high school students' overall autonomous English learning ability is at a medium level (M=3.2). On each dimension, the mean value of learning strategy use is the highest, at a moderate level. (M=3.4). In order, the mean values of understanding teaching objectives (M=3.3), learning strategy monitoring (M=3.2), learning process management (M=3.1), and setting learning goals (M=3.0) were all at a moderate level.

From the semi-structured interviews, it can be concluded that the expectations of parents, teachers, and friends are the source of their motivation to learn English, and that learners will work harder to learn English in order not to disappoint or upset them. However, the influence of parents, teachers, and friends mainly corresponds to learners' ought-to L2 selves. In the previous findings, high school students' ought-to L2 selves were

low but moderately correlated with their autonomous English learning ability. Therefore, the cultivation of high school students' autonomous English learning ability can be achieved through the expectations and requirements of parents, teachers, and friends towards learners.

(3) According to Independent samples t-test of L2MSS levels of high school students from different arts and science backgrounds, there was a significant difference in L2MSS levels between arts and science subjects in terms of overall L2MSS levels (t=-4.9, df=132, p=0.000 < 0.05). Specifically, L2MSS levels were significantly lower in the arts than in the sciences (MD=-0.8).

From the qualitative analysis, it can be seen that Science students reported that they enjoyed learning English more than the Liberal arts students and were more interested in English courses, that interest profoundly influences high school students' L2MSS levels, especially at the ideal second language self level, and that learners with a higher interest in English have a facilitative instrumental motivation to learn English well.

(4) In terms of the relationship between L2MSS and autonomous English learning ability, pearson correlation analysis showed that Chinese high school students' L2MSS was moderately positively correlated with autonomous English learning ability (r= 0.592, p=0.000).

From the semi-structured interviews, it can be seen that Interviewee 5 made several references to negative English learning experiences, a certain amount of language learning anxiety, a lack of confidence in learning English, a low overall L2MSS and a low level of autonomous English learning ability. Interviewee 1, on the other hand, mentions a relatively positive experience of second language learning and has a high level of L2MSS overall and, correspondingly, a high level of autonomous English learning ability. It can be concluded that the level of L2MSS is closely related to the learner's ability to learn English autonomously.

7.1 Teaching Inspiration

It is clear that Chinese high school students have more positive L2MSS, but their ideal second language self and second language learning experiences are still relatively low compared to college and graduate students. Therefore, all three dimensions of the L2MSS need to be improved for high school students, especially the ideal second language self and second language learning experience.

Teachers should moderate their expectations and demands on learners, adopt appropriate and effective motivational strategies in their teaching practice, and consciously implement some interventions on the ought-to second language self. They should transform the learners' ought-to second language selves into positive ideal second language selves and continuously strengthen and internalize the learners' learning motivation.

English teachers should strengthen the training and guidance on learning strategies for high school students to help learners master more autonomous learning strategies and skills and enhance their autonomous learning ability.

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10.References

Alamer, A. (2022). Basic psychological needs, motivational orientations, effort, and vocabulary knowledge: A comprehensive model. Studies in Second Language Acquisition, 44(1), 164-184.

Alzubaidi, E., Aldridge, J. M., & Khine, M. S. (2016). Learning English as a second language at the university level in Jordan: Motivation, self-regulation and learning environment perceptions. *Learning Environments Research, 19*(1), 133-152.

Ametova, O. (2020). The influence of integrative motivation and instrumental motivation on learning English as a Foreign Language. Science web academic papers collection, 15(8),687-698.

Aripova, S. (2021). Students' Motivation in Autonomous Learning. Turkish Journal of Computer and Mathematics Education (TURCOMAT), 12(4), 1095-1098.

Bozavli, E. (2021). Is foreign language teaching possible without school? Distance learning experiences of foreign language students at Ataturk University during the COVID-19 pandemic. Arab World English Journal (AWEJ) Volume, 12.

Chalupa, C., & ter Haseborg, H. (2014). Improving Student Motivation through Autonomous Learning Choices. NECTFL Review, 74, 53-85.

Clifford, V. A. (1999). The development of autonomous learners in a university setting. Higher Education Research & Development, 18(1), 115-128.

Creswell, J. W. (2012). Educational research: Planning, conducting, and evaluating quantitative and qualitative research. Pearson Education, Inc.

Cullen, B. (2019). A Brief Review of Humanistic Psychology.

Davey, G., De Lian, C., & Higgins, L. (2007). The university entrance examination system in China. Journal of further and Higher Education, 31(4), 385-396.

Dickinson, L. (1993). Talking shop: Aspects of autonomous learning. ELT journal, 47(4), 330-336.

Dickinson, L. (1995). Autonomy and motivation a literature review. System, 23(2), 165-174.

Dornyei, Z. (2005). The psychology of the language learner: Individual differences in second language acquisition. New Jersey: Mahwah.

Dörnyei, Z. (2019). Towards a better understanding of the L2 Learning Experience, the Cinderella of the L2 Motivational Self System. Studies in Second Language Learning and Teaching, 9(1).

Du, Y. (2020). Study on Cultivating College Students' English Autonomous Learning Ability under the Flipped Classroom Model. English Language Teaching, 13(6), 13-19.

Dudeney, G., & Hockly, N. (2007). How to teach English with technology.

Gardner, R. C. (2001). Integrative motivation and second language acquisition. Motivation and second language acquisition, 23(1), 1-19.

Ghanizadeh, A., & Rostami, S. (2015). A Dörnyei-inspired study on second language motivation: A cross-comparison analysis in public and private contexts. Psychological Studies, 60(3), 292-301.

Irgatoğlu, A. (2021). L2 Motivational Self System and Learning Approaches of High School Students. Education Quarterly Reviews, 4.

Keskin, S. (2019). Factors affecting students' preferences for online and blended learning: Motivational vs. cognitive. European Journal of Open, Distance and E-Learning (EURODL), 22(2), 72-86.

Lai, H. J., & Wang, C. Y. (2012). Examining public librarians' information literacy, self-directed learning readiness, and e-learning attitudes: A study from Taiwan. Malaysian Journal of Library & Information Science, 17(2), 101-115.

Lashari, A. A., Umrani, S., & Buriro, G. A. (2021). Learners' Self-regulation and Autonomy in Learning English.

Liu, G. (2016). A study on the autonomous learning validity of Chinese EFL students. Journal of Language Teaching and Research, 7(4), 738.

Lou, L. (2021). Cultivation of Students' Autonomous Learning Ability in Application-oriented Universities. Theory and Practice in Language Studies, 11(4), 422-429.

Martin, C. (2022). Modern foreign language learning: exploring the possible impact of parental experiences on student motivation. Innovation in Language Learning and Teaching, 1-19.

Masouleh, N. S., & Jooneghani, R. B. (2012). Autonomous learning: A teacher-less learning!. Procedia-Social and Behavioral Sciences, 55, 835-842.

Nunan, D. (1995). Closing the gap between learning and instruction. Tesol Quarterly, 29(1), 133-158.

Pemberton, R., Li, E. S., Or, W. W., & Pierson, H. D. (1996). Taking control: Autonomy in language learning (Vol. 1). Hong kong University press.

Pollard, A. (2015). Web-based journals in the classroom: Motivation and autonomous learning. Indonesian Journal of Applied Linguistics, 4(2), 20-31.

Song, D., & Bonk, C. J. (2016). Motivational factors in self-directed informal learning from online learning resources. Cogent Education, 3(1), 1205838.

Spratt, M., Humphreys, G., & Chan, V. (2002). Autonomy and motivation: Which comes first?. Language teaching research, 6(3), 245-266.

SWATEVACHARKUL, R. (2021). L2 Motivational Self System: A Case of Thai EFL Senior High School Students. 3L: Southeast Asian Journal of English Language Studies, 27(4).

Wight, M. C. S. (2015). Students with learning disabilities in the foreign language learning environment and the practice of exemption. Foreign Language Annals, 48(1), 39-55.

Xu J., & Liu, Y (2019). Review of Research on Cross-linguistic Influence in Third Language Acquisition. Journal of Beijing International Studies University, 41(3), 32.

Yang, S., Zhou, S., & Cheng, X. (2019). Why do college students continue to use mobile learning? Learning involvement and self-determination theory. British Journal of Educational Technology, 50(2), 626-637.

Yildiz, Y., & Yucedal, H. M. (2020). Learner autonomy: A central theme in language learning. International Journal of Social Sciences & Educational Studies, 7(3), 208-212.

Zhou, C. (2022). The Relationship Between Chinese EFL Learners' L2 Motivational Self System and Willingness to Communicate. Theory and Practice in Language Studies, 12(11), 2374-2380.

Zhou, L., Wu, S., Zhou, M., & Li, F. (2020). 'School's out, but class' on', the largest online education in the world today: Taking China's practical exploration during The COVID-19 epidemic prevention and control as an example. Best evid chin edu, 4(2), 501-519.

Zhou, R., & Bao, Y. (2018). The Impact of Achievement Motivation on Project-Based Autonomous Learning--" An Empirical Study on the 2017 NBEPC". English Language Teaching, 11(11), 31-43.