A Study on the Relationship between Perceived Teacher Support and Learning Adaptation of Chinese Six-year Normal Students: Taking Locus of Conterol as Mediator and Hardiness as Moderator

By

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ABSTRACT

This study explores the perception of the specific group free six-year normal students from junior high schools of China's Hunan province of the influence of teachers support (TS) on learning adaptation (LA) , mediator of locus of control (LOC) and the moderator of hardiness for them. Six-year government-sponsored normal students from junior high schools in Hunan, China were taken as the research object, 1147 questionnaires were distributed in the way of convenience sampling, after finishing the questionnaires, 9 invalid questionnaires were excluded, 1138 valid questionnaires were collected, and the collection rate is 99.2%. Therefore, 1138 valid formal samples were sampled for this study. Data analysis was carried out for the valid questionnaires with SPSS and AMOS. Specifically, the problems involved are as follows:

1: Different background variables (sex, grade, only child or not, school locus of controlation and origin of students) have significant differences in teacher support, locus of control, hardiness and learninsenior adaptation .

2: The perception of teacher support of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on learning adaptation .

3: The perception of teacher support of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on locus of control .

4: The locus of control of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on learning adaptation .

5: The locus of control of students in free six-year normal universities from junior high schools in Hunan, China plays a mediator role in the effect of teacher support on learning adaptation.

6: The hardiness of students in free six-year normal universities from junior high schools in Hunan, China plays a moderator role in the effect ofteacher support on learning adaptation.

Keywords: Teacher Support; Locus of Control; Hardiness; Learning Adaption

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CHAPTER 1
INTRODUCTION

Students in the public-funded directional training program of six-year rural primary school teachers from junior high schools, share such common characteristics as free normal students and many minority students from needy families and non-only children as well as have other characteristics (including young entrance age and long school time). The students in such training program shall return to the registered permanent residence to serve for 10 years after graduation, so the characteristics of learning motivation of these college students during the school time are worthy of attention (Hu, Wei & Shen, 2013). This study aims at studying the influences of TS on learning adaptation of students in free six-year normal universities from junior high schools in Hunan Province, China, knowing the mediator effect of LOC of students in free six-year normal universities in the relationship between TS and LA, moderatorof students in free six-year normal universities in the relationship between TS and learning adaptation, as well as puts forward discussion and suggestions based on empirical analysis result according to the requirement of improve psychological quality and LA of existing students in free six-yea rfree normal universities. This part consists of six sections, including research background, research purpose, research questions, term explanation , research significance and research innovation.

1.1 Research Background

In the rural areas and remote mountainous regions of Hunan, the teaching facilities of rural schools are poor and the teacher resources are rare due to poor economic conditions. To change this situation, the government improves teaching levels of rural areas, retains the teachers to serve rural areas and their homeland, and the government has also declared the recruitment policy of students in free six-year normal universities from junior high school. The education of students for cultivation of primary school teachers is a new pedagogical education training model (Chen, Wu & Qin, 2014). The reform policy benefits the employment channels for rural junior high school graduates and the stability of rural teachers, as well as improves the rural teaching quality. However, the age and psychological characteristics of the free normal students who enter the university after their graduation from junior high school and study the same contents for six-years attract more and more attention of the scholars of psychology and pedagogy (Chen, *et al*., 2014).

Due to negative events frequently happening to college students in recent years, people pay more attention to related issues, such as college students' mental health, sound personality and school adaptation. At university, students will face many new challenges, including adaptation to campus life, interpersonal relationship, emotional distress and career planning and choice. In addition, the corresponding attention fails to be paid to mental health and personality development of students under the examination-oriented education system for a long time and they lack the ability to live independently and self-management skills. Above-mentioned reality factors and objective constraints may disturb and restrict college students to properly solve various developmental problems faced at university and LA problems that are worthy to be studied by us have arisen. As shown by the research data, although the schools investigated are different, the problem of learning adaptation remains to be improved is prevalent. Zhang *et al*. (2001) carried out research from the perspective of learning psychology and found that freshmen who came to the psychological counseling center for consultation due to learning problems accounts for 27.8% of the total number of students, which tops the list of all kinds of consulting problems. The survey result of Ge and Yu (2005) indicated that 36.3% of college students can't adapt to learning in university; the research results of Dang (2009) indicated that 55.5% of freshmen have ambiguous learning objectives and 45% of freshmen complete their learning tasks passively; Huang and Tian (2013) found that about 26.4% of freshmen can't adapt to study in university well 4 ~ 5 months after enrollment and 19.74% of freshmen said that they are lack of learning objective. The survey on freshmen by Su (2017) showed that the adaptation scale scores of 82.6% of the freshmen are at intermediate level, and the learning adaptabilities 8.4% of freshmen are at a relatively low level.

The research studies indicate that the learning adaptation problem of college students does account for a considerable proportion, and has drawn more attention.

The primary cause is that related issues regarding LA of college students in China are becoming more and more serious in recent years, and have attracted the attention of scholars. Wherein, the negative mentality of the students in free six-year normal universities from junior high schools, such as inadaptation of learning, is a topic that should be focused on by the industry and society. Relevant studies found that, compared students in free six-year normal universities from junior high schools and non-free normal students and senior high school students, though there is nohave no distinct difference between students in free six-year normal universities and other two types of students in LA, but students in free six-year normal universities are easier to have negative motions, and they have lower achievability of study and LA. Besides, students in free six-year normal universities and senior high school students are more negative about whether they are able to complete current learning tasks and objective evaluation. Zhang (2010) thought that some students had insufficient motivation and pressure to learn obviously and low learning initiative to compare with other non-free normal students.

The enrollment targets of six-year pedagogical education are junior high school students from rural areas, they leave the rural area and live in city.The long distance may lead to inadaptability, so will their inadaptation of learning be affected? Whether the students in free six-year normal universities are with good adaptability is not only closely related to their personal physical and psychological health and career development, but also affects the quality of the elementary education in China's rural areas (He & Hu , 2017).

From the perspective of school management and talent cultivation, the study on college students' LA is conducted to provide scientific and reliable theoretical basis and reference for workers in colleges and universities, who devote themselves to education cultivating qualified college students with high quality and strong ability.Above research also has important significance on leading college students to deepen self-knowledge from their own point of view, inspiring their potential for independent growth as well as helping them to better adapt to the university life, treat their studies positively, seize key opportunities for personal growth and realize the balanced and sustainable development of mind and ability.

1.2. Research Purpose

On the basis of literatrue review, the shortcomings and blanks of the current research were sorted out in this dissertation. In order to enrich the further study about LA of students in free six-year normal universities from junior high schools at undergraduate level. There are six purposes in this study:

A. To explore the students from three typical undergraduate universities in Hunan Province, China, to check the differences of demographic statistic variables (sex, grade, only child or not, school locus of controlation and origin of students) in the aspects of teachers support, learning adaptation , locus of control and hardiness.

B. To explore the impacts relation between teachers support and learning adaptation among students in free six-year normal universities at undergraduate level.

C. To explore the impacts relation between teachers support and locus of control among students in free six-year normal universities at undergraduate level.

D. To expiore the impacts between locus of control and learning adaptation among students in free six-year normal universities at undergraduate level.

E. To explore the mediator mechanism of locus of control of students in free six-year normal universities at undergraduate level from junior high schools between teachers support and learning adaptation.

F. To explore the moderator mechanism of hardiness of students in free six-year normal universities at undergraduate level from junior high schools between teachers support and learning adaptation .

1.3. Research Questions

The college time is a period during which students receive more systematic and professional, scientific and cultural knowledge, and develop their psychological status rapidly. During this period, teachers have a significant and continuous

influence on the growth and development of students. Teachers' expectations will affect their attitude and learning ways, while TS behavior perceived by students will affect their self-efficacy, the development of learning, and their adaptability to college life. Specifically, this research includes the following six questions:

A.Whether there are differences among teachers support, learning adaptation, locus of control and hardinessin the discussion of background variables (sex, grade, only child or not, school locus of controlation and origin of students) for students in free six-year normal universities from junior high schools?

B. Does teachers support have impacts on learning adaptation of students in free six-year normal universities from junior high schools?

C. Does teachers support have impacts on locus of control of students in free six-year normal universities from junior high schools?

D. Does locus of control have impacts on learning adaptation of students in free six-year normal universities from junior high schools?

E. Does locus of control plays a mediator in teachers support and learning adaptation of students in free six-year normal universities from junior high schools?

F. Does hardiness plays a moderator role between teachers support and learning adaptation of students in free six-year normal universities from junior high schools?

1.4 Term Explanation

This study aims at discussing the relations of TS, locus of control, hardiness and LA of students in free six-year normal universities from junior high schools. In order to make the definitions of the major variables clear, some terms are explained as follows:

1.4.1 The Education of Students in Free Six-year Normal Universities from Junior High Schools

The education of students in free six-year normal universities from junior high schools (at the age of 13-16 years old) at the undergraduate level for cultivation of primary school teachers is a new pedagogical education training model .

1.4.2 Teacher Support

Teacher support refers to establish close relations between students and teachers. The teachers may improve students' self-efficacy in the aspects of teaching strategies so as to improve the achievements of the students .

1.4.3 Locus of Control

Locus of control refers to people's general views on the behaviors and event results in life .

1.4.4 Hardiness

Hardiness refers to the courage and motivation of a person owned for interaction with the world to change the stressful environment into opportunities and challenges from potential disasters .

1.4.5 Learning Adaptation

Learning adaptation refers to the psychological and behavior process of a subject in accordance with the environment and the demands of learning, to adjust itself with efforts to achieve balance with learning environment .

1.5 Research Significance

1.5.1 Academical Significance:

Firstly, the study on LA of six-year undergraduate and junior college students from junior high schools is helpful to understand the current situation of school adaptation of such college students more deeply and comprehensively, especially provides the empirical support for the interrelated theory concerning LA of six-year undergraduate and junior college students from junior high schools and lays a foundation for further perfection of related theories. Cultivation of primary school teachers from students in free six-year normal universities education from junior high schools at the undergraduate level for is a new pedagogical education training model (Chen, *et al*., 2014).

Secondly, locus of control, TS and hardiness have been important parts of comprehensive health psychology research by scholars in different fields. Rich research achievement accumulated and foundation laid are helpful to the research by later generations (Liu , Shi , Xing & Peng 2018); Zhou & Guo (2006); Cobb, (1976); Russell, Benedek, Naifeh, Fullerton, Benevides, Ursano, & Cacciopo (2016). Thirdly, the exploration and further verification about the moderator of the hardiness between TS, LOC and college students' LA provide the theoretical support for the research of exploring the hardiness as a regulatory mechanism.

1.5.2 Practical Significance

Firstly, based on the same starting point and different university levels, the achievement of the study on students' LA can provide teaching staff with theoretical support of teaching practice and management activities and such teaching staff can adopt appropriate methods to ensure smooth development of teaching activities and school management. Secondly, the deep understanding about TS, locus of control, hardiness and college students' LA can help teachers to better understand teaching activities and students to better carry out learning activities, develop a positive learning attitude and get massive academic achievements. Thirdly, college students' learning adaptation is an important factor affecting their physical and psychological health as well as the study on college students' psychological factors can promote their physical and mental health and comprehensive development.

1.6 Research Innovation

1.6.1 Innovation in the Combination of Study Variables

This study mainly involves the discussion about influence and effect of TS on LA of six-year normal university students from junior high schools. On the basis of previous studies, scholars, such as Clinciu (2013), Soares, Francischetto and Miranda and Dutra (2013), carry out plenty of researches about the relationship between TS felt by students and LOC and LA as well as the relationship between hardiness and students' LA with some achievements made, but there are few researches about the relationship between them, without direct studies among four variables. In this study, it's deemed that TS, LOC and hardiness are main influence factors of college students' LA. Although the influence of TS on college students' LA was studied, it wasn't precise, especially that the TS was listed in the perceptionof social support. Among the current key documents, such as core journals at home and abroad consulted, there are only three documents involving the study on LOC as medium and five documents on hardiness as a regulatory mechanism, so this study is prospective and innovative.

1.6.2 Innovation on Research Objects

The study on LA of students in free six-year normal universities from junior high school in China just commences and the students from junior high schools also need to change exam-orientated study habit developed in the middle school and adapt to new courses and requirements of the normal school anew. Besides, students in free six-year normal universities also need to take part in art learning and club activity during the freshman year. As a result, some students become self-abased and even weary of learning due to the gap between them and other students (Chen, *et al.*, 2015). A new topic is proposed to teaching staff with attention of the department in charge of education aroused.

To sum up, the research background of LA (including realistic research background and theoretical research background) is mainly introduced, the deficiency and vacancy of previous researches are sorted out and the necessity of studying LA of students in free six-year normal universities from junior high school in the TS field is pointed out to put forward purposes and questions of this study. The research significance of this paper (including theoretical significance and practical significance) is analyzed, the innovation point and the research innovation students from objects-specific undergraduatesreplacing primary and secondary school and social adults or common college students are introduced. As for the variable innovation, the new mediator variable-LOC and other novel regulatory variables are mainly introduced to the research field of LA to finally confirm how four variables-TS, locus of control, hardiness and LA interact and how the LA are influenced in this chapter.

CHAPTER 2
LITERATURE REVIEW

This part further discusses in accordance with the collected variables and relevant literatures and the contents include TS, LA, LOC and hardiness, etc. Besides, this part takes "social cognitive thory" of Bandura as the theoretical basis of this study after synthesizing relevant literatures. This part consists of six sections. Section I is the theoretical of this study, Section II to Section V are relevant studies of TS, locus of control, hardiness and LA, respectively. Section VI is the study of the interaction effects of TS,LOC, hardiness and LA.

2.1 Research Theoretical Basis and Framework design

In China, the undergraduate normal students are senior high school students who have reached the minimum passing marks for admission in the national entrance examination for colleges and universities. They will study in their universities for 4 years and enter the society to become teachers after obtaining the teacher certificates issued by the Ministry of Education. However, the objects in this study are outstanding students who take the general examination for graduation from junior high schools, so they should take specific additional examination subjects. The students who have been admitted after signing the contract of serving the rural education with the county-level education sector, will study in the undergraduate universities for six years, with two stages. They will accept the basic subject study in the first two years. The students who get poor grades in the examination will be eliminated, and the outstanding students will enter the second stage of a 4-year undergraduate study. The students eliminated will be granted the secondary diplomas and choose a job by themselves. Based on the particularity of the object and needs of the education reform, the study carries out the empirical study on the basis of Bandura's Social Learning Theory.

In this research, the pedagogy and psychology are combined on the basis of relevant theories and empirical researches to perform academic research with strong practical significance in relation to problems in the reform practice of normal university education. Theoretical basis of this research sprang from Bandura "Triarchic theory of learning"; it is a learning theory proposed by Bandura for the sake of fighting against the view points of environmental determinism presented by B. F. Skinner. As Bandura (1977) pointed out, environmental factors alone cannot determine people's learning behavior; in addition to environmental factors, one's own cognition of people, things and things in the environment are much more important factors in the formation of learning behavior. In the learning environment, the environmental factors, the individual's cognition of the environment and the individual's behavior mutually interact with each other to determine the behavior learned. Therefore, people are influenced and affected by other people, events and things in the environment, and people can also influence and affect people, events and things in the environment. This theory has been widely applied in the fields, such as education system, human resources, career planning, organizational management, clinical nursing, psychological health etc. (Fang , 2013; Zhang , 2015; Zhou , Guo , 2006; Zhang, , Ören, Madey, & Sierhuis, 2012).

Social Cognitive Theory

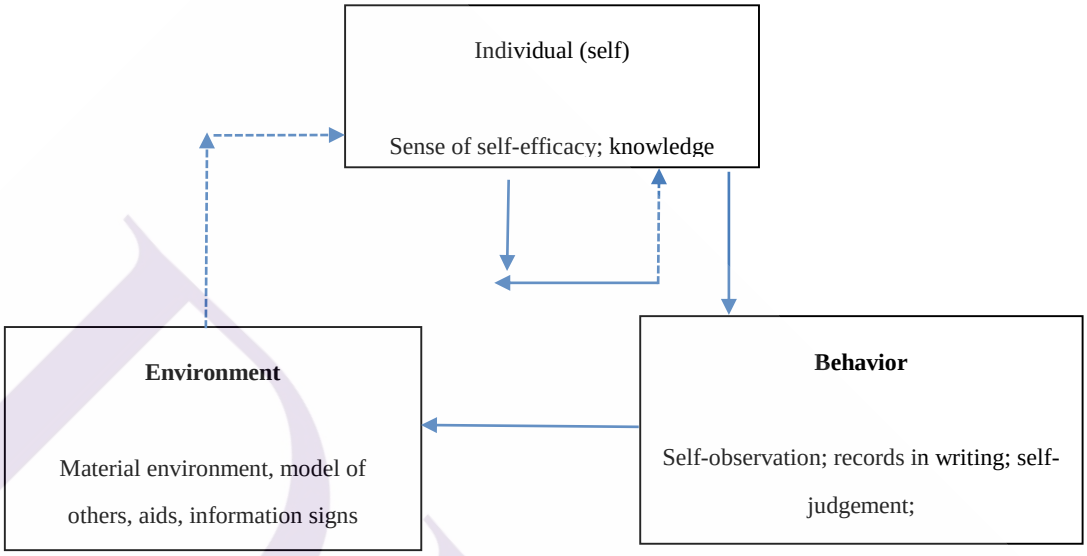


Figure 2.1 Source of Data: Bandura (1977,1986)

Bandura (1986) believed in his social interaction determinism that, from the perspective of social cognitive, psychological function constitutes of continuous interaction among three dimensions, which includes the individual's environment, the person and his behavior. Any one of which is affected by amother two factors and the mutual influence among three factors may occur simultaneously. The behavior is also the result of interaction of individual determinants and environmental determinants. In other words, the environment which an individual is involved in will interact with the individual's cognition, and as a result will influence the process of psychological behavior (Yang, 2006). Bandura (1977,1986) pointed out in his analysis of the source of personal self-efficacy in Social Persuasion: The surrounding social system, including people of great importance for the individual to complete the task, can serve as a variety of incentives or praises for higher self-efficacy, which makes the individual more likely exert more efforts and perseverance to persist in the face of difficulties, especially when the individuals are struggling or doubt himself in the process of completing the task. At this time, the social organization system effect of persuasion is more obvious. The self-efficacy interacts with the support of people around and it constantly enhances individual confidence, so a positive state of mind is established. Therefore, in the process of completing individual learning tasks, frequent verbal encouragement and support from important individuals (family members, teachers or classmates, etc.) are more conducive to strengthening students' determination to successfully continue in the face of learning difficulties (Zhou & Guo, 2006). The study of Phillips and Gully (1997) indicated that LOCsources are positively correlated with self-efficacy, and internal controllers have a stronger feeling of self-efficacy than external controllers.

When summarizing the studies of the predecessors, Bandura found that, the research emphasis of traditional learning theories main focuses on behavior abilities and the learning process of knowledge or the motivational process of behavior occurrence, while the mediate process of knowledge and skills converting into behavior and motivation is omitted (Zhou, *et al*., 2006). LOC is a mature theory on the basis of self-efficacy, whether its mediator mechanism and self-efficacy are in the same level is the starting point of this study. On the researches of Bandura and other scholars, the study that takes LOCas the mediatorto embed it into the model of "triadic theory of learning" of Bandura is significant.

On this basis, during the learning of individuals, external environments (TS) will generate interactive results of LOC of the individuals, and LOC of individuals will affect the psychological behaviors (LA) of the individuals. Therefore, this study establishes a study structure for the mediator of LOC of individuals on TS and LA of individuals.

2.2 Conception and Related Studies of Teacher Support

2.2.1 Conception of Teacher Support

In the early time, Cobb (1976) and Schwitzer, Alan, Chris (1999) believed that TS refers to social support from teachers. It is a message that students feel from teachers' concern, respect, affirmation and attention. TS for students includes responsibility, care, fairness, good teacher-student relationship and so on. Two Scholars, Deci and Ryan (1985) put forward the concept of teachers' autonomous support behavior on the basis of cognitive psychology, which means that teachers can fully respect students, allow them to express their personal opinions freely and determine their individual actions autonomously. For example, with the independent support of teachers, students can make free choices, reasonably explain the problems raised by teachers. In this way, the wishes and views of these students can be supported and recognized by teachers. The connotation of TS can be attributed to the help of teachers to students, which can be emotional or informative (Helms-Lorenz & Uchenna, 2015; Irnidayanti & Grift, 2016; Maulana & Sharma, 2016).

From the researches above, the concept of TS can be generally comprehended. Besides, in the research development and classification, the context and classification shall be mastered.

A. In terms of the TS theory, in its early time, Cobb (1976) mainly tended tointerpret it as the teacher's unilateral help to students in various aspects, which only made basic and directional contribution to the TS theory.

B. On the basis of previous studies, the concept of teachers' autonomous support behavior focusing on teachers' respect for students and understanding teachers support is put forward from the perspective of cognitive psychology (Deci *et al.*, 1985; Lee & Bierman, 2015; Sharma, 2016).

C. However, the concept of TS is explained from the perspective of self-determination motivation theory, which focuses on the perception of TS from the starting point of students' motivation inside and outside of themselves (Mugeau *et al.*, 2003; Williams & Deci, 1998).

D. Among the viewpoints of these researchers, TS is explained from the perspective of close teacher-student relationship establishment, and advocated that teachers can improve their achievements with some teaching strategies by enhancing students' self-efficacy. (Deiro,2005; Filak & Sheldon, 2008; Harper & Sovran, 2012; Joo & Kim, 2016; Mihalas, Witherspoon, Marachi, Astor & Benbenishty, 2007; Opdenakker, 2015; Wium & Louw, 2011; Wu, 2018). Nonetheless, based on the research of above scholars, this study holds that although each scholar puts forward the interpretation and definition of TS based on different theories or perspectives, it is not comprehensive. Besides, different theories and perspectives should be combined to fully understand and perfect the concept of TS. After that, combined with the definition of TS by various scholars, this study points out that teachers should fully respect the students, actively use various educational strategies to improve students' sense of self-efficacy, thus establishing a good teacher-student relationship, attaching importance to the influence of students' self-perception on TS, encouraging students to express their personal opinions freely, deciding their own actions independently, and finally achieving their many goals. In this study, definition of Deiro (2005) is selected, and the operational definition is TS.

2.2.2 Related Theories of Teacher Support

Social support was officially proposed as a terminology of a science in 1970s. At the beginning of 1970s, the literatures introduced the concept of social support and the methods of quantitative assessments of sociology and medicine were adopted to carry out masses of studies for the relationship between social support and physical and psychological health (Hu, 1996). The scholars at that time understood the basic meanings of social support from two aspects: From the point of functions, the social support is the mental and material supports obtained by individuals from their owned social relations. From the point of operation, the social support is a quantitative characteristic of the social relations owned by the individuals. Cassel (1976) thought that, individuals may obtain more social supports and finally obtain more social opportunities by taking the family, School or other primary groups as the center; Thoit (1986) thought that, social support meant when the individuals were under special pressure or dilemma, they obtained the emotional support, cognitive support, substantial support, companionship support and other types of support timely given by important persons (such as spouse, parents, relatives, friends or teachers, etc.) to assist them to obtain accommodation or assimilative physical, mental and phycological balance from interaction with environment. In 1980s, Xiao (1987) introduced the concept of social support to China. In his study, he summarized the definition of social support by three items of contents, i.e., objective support of social support (the material or direct service supports), subjective support (emotion support of awarded by individuals) and availability of individuals on social support. Qiu , *et al*.(1999), thought that, social support is not only an one-way support, and it is a social exchange under most circumstances. Zhang and Ruan (1999) said, social support generally meant the helps that people got from others in society. Ruan (2000) said, sociologically, social support was a free selective social behavior of a certain special network by a certain material and mental means for the weak of the society. From the perspective of social network, it was pointed out that, social support meant the person was helped to obtain the social network supported by various resources (such as money, emotion and friendship, etc.) from social support to solve the problems and crisis in daily life and maintain the normal operation (He , 2001).

After that, Goodwin, Costa and Adonu (2004) defined social support as a social interaction or relationship which might provide actual help or emotional dependency for individuals from the perspective of social relations.

The objects of social support mean the receptors of social support, so do the objects of social support include on earth? There are two schools for this question: one party thinks that, the objects of social support are selective, they are mainly the socially disadvantaged groups. They have pointed that social support is not universal, so its support objects are not all persons in society, but socially disadvantaged groups (Zheng, 1996). Social support is selective social behaviors for giving free help to the social disadvantaged groups (Chen, 2000). Social support is general social behaviors. In daily life, every individual

can be the object of social support (Cai, *et al*., 1997; He, 2001; Li, 1998). Generally, seeing from the existing studies in China, most of the scholars defined the objects of social support as the socially disadvantaged groups.

Therefore, from the definition of Thoit (1986) and the studies of other scholars, TS is a part of social support, it acts on its objects, which means, the objects enhance their LA with the help of others (such as TS) by interacting learning, their own cognition, thinking and organizing, etc.

2.2.3 Measuring Tool of Teacher Support

At present, questionnaires are mainly used to measure the TS perceived by the students, and most of the studies focus on the situation where the support behavior and attitude provided by teachers are perceived by students. Williams and Deci (1998) had such scales as the teacher's autonomous support scale, single dimension and teacher autonomous support scale in learning situation. Assor, Kaplan and Roth (2002) divided TS into two dimensions: autonomy support and autonomy control of teacher, compiling teachers' autonomous support behavior perceived by students. The scale has 34 items, which is the mainstream of measuring TS at home and abroad. Based on (Assor, *et al*., 2002; Ouyang 2005), the questionnaire of TS behavior perceived by students are compiled by using three basic dimensions: emotional support, ability support and learning support, with a total of 19 items. Song (2017) divided TS into six dimensions, emotional support, intimacy, value affirmation, information support, help and companionship, with a total of 27 items.

This study will adopt the dimension division of TS by Ouyang (2005), including emotional support, ability support and learning support, with a total of 19 items.

2.2.4 Related Studies of Teacher Support

A. Correlational research from the perspective of population variables

By analysis of information retrieval, this study finds that, the studies related to the populations of TS are Marachi, Astor and Benbenishty (2007), with different TS levels felt in the aspect of sex, different TS levels felt in the aspect of culture and similar TS levels felt from school type; Lentillon, Cog érino and Kaestner (2006), with different TS levels felt by poor students, Lee and Bierman (2015), different TS level felt by the students of the family with different income levels, Terhoeven (2009) dropping out, Uchenna and Onuoha (2015), with different TS levels felt in the aspect of age and Kuhns (2008) with different TS levels felt by different ethnicities, etc.

B. Relevant studies from the perspective of learning

Many scholars widely focused on and worked on studies related to TS, and there have been many achievements. However, the studies about influence factors mainly focused on learning, such as Klem and Connell (2004), Cox and Williams (2008), Koomen, Leeuwen and Lei (2004), forecasting the students' learning engagement, learning motivation, learning behavior, learning attitude, Sharma (2016), learning achievements and learning results, etc.

In conclusion, in the scholars' studies , different background variables were analyzed and studied as the factors affecting TS, and not all the obtained results were the same. This study takes students in free six-year normal universities from junior high schools as the research objects. Considering the particularity of such group and on the basis of the reading and reference enlightenment of the above literatures, this study tries to take different background variables of the college students into the studies related to TS. The sex, grade, original of the students and the location of the schools will be emphatically analyzed to obtain the verification of relevant effects.

2.3 Conception and Related Studies of Locus of Control.

2.3.1 Conception of Locus of Control

LOC was originated from Watson, founder of behavioral school in 1913, and was developed from the Social Learning Theory of American Social psychologist Rotter (1975) in 1984. It matured from Bandura (1977) "self-efficacy"and Wiener (1975) "Attribution Theory", which explained the relationship between control and emotion and social adaptation from different angles. Generally speaking, according to the above psychologists and theories, it is believed that the uncontrollable cognition of events will affect people's emotion and feeling, thus inflicting a great impact on people's psychology, and affecting

his / her health. Psychologists have studied the concept of “locus of control” since its advent from different angles. Glover believed that LOC refers to a place where a person feels he / she succeeds or fails----either internal or external. Heider (1958) pointed out that the concept of locus of control is based on an assumption that the way of our action is strongly influenced by our own sense of responsibility for the causes between ourselves and the environment. (Heider,1958; Mccarty, Shrum, 2001; Ng, Sorensen & Eby, 2006). Heider held that the concept of LOC is based on the assumption that the behavior of the individual is affected by the individual's own factors and environmental factors. Individual will take the initiative to analyze the causality of the event in his life and make general use of it (Levenson, 1973; Paulhus, 1983; Seligman, 1975) , they defined the internal control and external control respectively: internal control is a universal belief that an individual thinks that the outcome of an event or behavior is consistent with his own efforts, while an external control is a universal belief that an individual deems as the result of an event or behavior having nothing to do with his / her own efforts. Rotter proposed the theory of LOC, which can also be called as internal-external LOC theory. If individuals think that the results of events are caused by their own behaviors or relatively long-lasting features (such as ability and property, etc.), and can be controlled or forecast by the individuals, it can be called as Belief in Internal Control, and it is referred to as internal control. If individuals think that the occurrence of enhanced events is not the results of their behaviors, but caused by fortune, occasion or destiny, or determined by other authorities, or the individuals think that the surrounding environment is so complex that they fail to forecast the results of the event, it can be called as Belief in External Control, and it is referred to as external control.

Glover thought that, LOC means a person feeling his position of success or failure - internal or external. Heider (1958) pointed out that the concept of LOC was established on the assumption that our behavior method was on the basis of responsibility consciousness between ourselves and environment. The concept of LOC was established on the basis that the behaviors of the individuals were affected by the personal factors of the individuals and the environmental factors, the individuals would analyze the causes and effects of the events actively and they would also summarize for utilization (Heider, 1958; Mccarty & Shrum, 2001; Sorensen & Eby, 2006). The following scholars defined internal control and external control of LOC: internal control is the general belief that the individuals think as the results of events or behaviors, which arethe same with their efforts; the external control is the general belief that the individuals think as the results of event or behaviors, which are not related to their efforts (Paulhus, 1983; Levenson, 1973; Seligman, 1975). Glove and Sautter (1976) thought LOCmeant that the individuals thought their success or failure was controlled by internal positions or external positions. LOC means the general view of persons for the results of the behaviors or events in daily life (Rotter, 1990; Pitzer, Jennifer Skinner & Ellen, 2016;Spector, Cooper, Sanchez, O'Driscoll, Sparks & Bernin, 2002; Spector & O'Connell, 2011). LOC is with individual differences between internal control and external control. The internal controllers believe that everything depends on themselves, they think that success is brought by their efforts or abilities, and failure is caused by their negligence or inadequate capability. Such persons are responsible for their own behaviors, and they regard themselves as the persons controlling their own destiny; while the external controllers think that nothing depends on them, they think that the success is a kind of fortune, and failure is brought by external factors, such as luck, society, background or others.

For students in free six-year normal universities, this study uses LOC of Rotter (1990) to refer to the general view of the results of behaviors or events in daily life.

2.3.2 Related Theories of Locus of Control

A. Self-efficacy

Bandura (1986, 1997) defined self-efficacy as the comprehensive judgment and consciousness for personal ability when individuals need to execute a certain task in accordance with their personal and surrounding environment factors. It was a personal subjective judgment on their self-competence. Pintrich (2002) defined self-efficacy applied in learning scenario of students as academic self-efficacy. He pointed that, academic self-efficacy meant the evlation of their performance and ability for completing learning tasks for students when they were learning and when they need to complete learning tasks in class or after school. Huang (2012) defined it from the perspective of cognition, he thought that, academic self-efficacy is a capability

evaluation, judgment and forecast of an individual to own actions and completion of specific performance. Hong , Huang and Qiu (2014) defined academic self-efficacy as the ability and belief of individuals for self-management of their equipped knowledge, skills and abilities, etc. to achieve a certain task.

Self-efficacy mainly has three characteristic dimensions, including level, strength and ductility:

I. Change of self-efficacy in level means the complexity of a person to complete special targets and behaviors he/she thinks. The difference in this dimension makes different individuals choose the tasks with different difficulties.

II. Change of self-efficacy in strength means how confident a person is for achievement of his specific targets. Weak self-efficacy is easy to be affected by inconsistent experience so as to be denied. Strong self-efficacy will not lead to self-doubt due to temporary failure, and the person with strong self-efficacy will believe that the final success can be achieved. Therefore, the person will not give up even facing numerous difficulties.

III. Ductility (or breadth) of self-efficacy means how much the intensity of self-efficacy within a certain field will affect the self-efficacy in other fields. Someone only judges that there are with available efficacies, while some other people think they are with good self-efficacy in many activities and situations.

B. Attribution theory

Heider (1958) firstly proposed the attribution theory. Heider divided behavior results into two types, personality factor and environmental factor. Personality factor includes personal power and effort or motivation, and it is caused by individual effort or ability. Therefore, it is also called as internal attribution, while the environmental factor means task difficulty and luck and it is caused by external situation. Therefore, it is also called as behavioral outcome attribution. Ordinary people attribute their failure to environmental factors.

While internal LOC and external LOC correspond to the personality and environment of attribution theory. Attribution theory of success or failure discusses the reasons of the success or failure of a person, analyzes how results affect the motivation of study, and it describes the arousing of behavior by results. The theory of Weiner is relatively complete. The self-attribution theory or theories proposed by Weiner (1985) refer to causal attribution of achievement-related behavior from the views of cognition. Weiner proposed eight attributions of ability, effort, task ease or difficulty, luck, mood, fatigue, illness and others, wherein, ability, effort, task ease or difficulty and luck are four main factors for the individuals to summarize whether their actions are succedded or failed. The eight attributions can be discussed in three dimensions (Weiner, 1985; Zhang, 1996).

I. Internal dimension and external dimension refer to the resource of the factors by which individuals think their success or failure is affected. Internal dimension is based on personal conditions, and external dimension is based on environment. If the reasons of behavior attribution are from the internal factors of the individuals, such as ability, effector and physical and psychological status, etc., they are internal dimension. If the reasons are from external factors of the individuals, such as luck, interference of others and job difficulties, etc., they are external dimension.

II. Stability dimension refers to whether the factors affecting success or failure are stabile in nature, or whether they are consistent under the same situation. Some reasons are relatively stable, for example, ability and object difficulties, etc. will not change at any time; while some reasons are relatively unstable, such as effort, luck and emotion, etc., they can change at any time.

III. Controllability dimension refers to whether the factors affecting success or failure are determined by personal willingness in nature. Some factors, such as effect and attention, etc. can be controlled by personal willingness, while some reasons, such as ability, job difficulties, luck, physical or psychological status, etc. cannot be controlled by personal willingness.

Weiner found that, the persons with different motivations are with different ways of interpretation for success or failure. For the persons hoping for success, they generally attribute failure to the factors of effort, and such attribution will make the individuals feel ashamed so that they will expect to be successful and strive to make progress; while the persons avoiding failure attribute failure to the factors of ability, so that the individuals can be free from undertaking the responsibilities of failure. Such persons do not have high expectation to success, so they are easy to give up.

In fact, the studies of different schools for LOCand the process of formation of theories are affected by space-time environment to a certain extent. Excepting for the limit of the reality factors, technological development and research instruments, from the point of the study scope, different historical backgrounds may also be based on the characteristics of political and economic environment to lead the mainstream and key points of studies, so that the obtained results may differ from each other. Even so, the main purpose of the studies is to promote the well-being of humans.

Therefore, no matter how the differences of the relevant theories of LOCof different schools are, how to understand the essence and characteristics of LOC so as to actually apply the study results to life and work remains to be the most important topic of the studies of locus of control.

2.3.3 Measuring Tools of Locus of Control

From the scales of locus of control, the study found that:

A. The Internal and External LOC scale (I - E)

This scale has only one dimension, and is compiled by Rotter (1966), measuring the general tendency. He believed that LOCrefers to people's general view of behavior or outcome of an event. If LOC is regarded as a continuous spectrum, one pole is internal control and the another pole is the external control. People with strong internal control would deem that the outcome of the event is mainly determined by internal factors, such as individual ability, personal efforts, and personality and so on. People with strong external control hold that the results of events are mainly affected by external factors, such as luck, external environment, and difficultis of tasks, and so on.

B. IPC Scale

According to the results of Levenson (1973) and other researchers, the orientation external control from LOC is further distinguished. Hence, the LOC scale is developed, that is, IPC scale. The group of scales reflects three different components of locus of control, each of which can be regarded as independent one, to describe the views of some subjects on causality. It means that LOCis composed of three parts: (I) Internal control, which measures the extent to which people believe that they can dominate their own life, and (P) powerful people, which measures the extent to which people believe that others can control their own lives; opportunity (C): which measures the extent to which people believe that opportunity can affect their life experiences. IPC covers the items of Rotter (1966).

I -E scale are specially designed to assess locus of control. Each sub-scale includes 8 items, and the whole scale has 24 items.

C. SOC Scale

Pauthus (1983) designed a three-dimensional Control Circle scale (SOC scale), the three components of which are individual strength, interpersonal control and sociopolitical control. Each component contains a set of entries, with 10 entries in each group.

Among these three scales, and pursuant to the relevant literature and correlation analysis, the IPC scale of Levenson (1973) was used to measure the locus of controlus of Contol.

2.3.4 Related Stuides of Locus of Control

There are few studies about the variables of personal background related to locus of control, as shown below:

Zeng (2001) thought that LOCconstantly changed as the increase of age. When the children were at early school age, they would attribute their success and failure to external factors, so there were external controls. With the increase of age, they would gradually stress internal power, and attribute their success and failure to internal abilities and responsibilities. There were also studies indicating that, the children of 4-5 years old were with higher plasticity in attribution training. At the same time, the LOC of children was developed from child'sself-efficacy and the performance of self-agency.

The studies of Zhang (2004) also indicated that, LOCaffected the interpersonal relationship of students. Findley and Cooper (1983) investigated the relationship between internal and external control and scholastic achievements by literature review. They found that, compared with women, men were with more significant relations. Wu (1975) found that, for male students, internal LOC was a motivative factor that was easier to help school works. The studies carried out in workplace also

showed that, the person with internal control personality, while the female students with overachievements intent to be with internal control personality (Wu, 1998). Lefcourt (1972) pointed out that, internal & external control personalities were affected by previous experiences and environmental interaction. The external environment includes social and family factors: As for social factors, there are social culture & status, sex factors and ethnic factors, etc.; while as for family factors, there are discipline attitudes and expectation of parents, and the internal and and external control personalities of parents. Different study objects represent different LOC trends due to different sex, age, family and social-economic levels.

However, He (1981) thought that, sex was irrelated to belief in internal and external control. Lai (2002) also pointed it out that in studies, sex, age, family and social-economic levels were not significantly different from locus of control.

In conclusion, in the studies of the scholars, different background variables were analyzed and studied as the factors affecting locus of control, and not all the obtained results were the same. This study takes students in free six-year normal universities from junior high schools as the research objects. Considering the particularity of such group, and on the basis of the reading and reference enlightenment of the above literatures, this study tries to take different background variables of the college students into the studies related to locus of control. The sex, grade, original of the students and the location of the schools will be emphatically analyzed to obtain the verification of relevant effects.

2.4 Conception and Related Studies of Hardiness

2.4.1 Conception of Hardiness

At present, hardiness falls into two categories: ability and attitude.

A. From the perspective of ability

In the past three decades, people have been very interested in the concept of "hardiness", which has been developed into a theory that Kobasa (1979) called as the hardiness theory. It is used to study why some people, even in case of stress, can deal with the problems well, and why some people without stress cannot deal with the problems in the first place. The word "hardiness" was first proposed by Kobasa (1979), who was to interpret a personal relationship with others and his / her goals, and ability to deal with problems. From the perspective of existentialist psychology, Kobasa, Maddi and Kahn (1982) further perfected the definition of hardness, which refers to an ability including three elements: commitment, control, and challenge. Commitment is defined as a person who is committed to his / her work or activity, each of which is meaningful and interesting to him or her. Control is defined as a person who believes that he / she can control or influence their life experience. Challenge is defined as a person who sees the world as an opportunity for development and as a good learner.

Kobasa and Puccetti (1983) interpreted hardiness as a set of personality characteristics, and as a flexible way of life and a resource in the face of challenge. Hardiness is considered to be a significant structure associated with personal elasticity. According to Maddi, Harvey, Khoshaba, Faazel and Resurreccion (2012) hardiness can help individuals transform stressful events from potential disasters and provide useful growth opportunities and health advantages.

Ferreira, Coetzee and Masenge (2013) explained the way hardiness works with a strong sense of responsibility, control and commitment, to mitigate the negative effects of stress. Abdollahi, Talib, Yaacob and Ismail (2015) considered hardiness as an elastic-related capacity, and the individual of hardiness tend to be blessed with a collection of personality characteristics that play a role in resisting resources in the event of a stressful life event. Hardiness is a kind of ability to recover from setbacks and move on in face of difficulties. Hardiness is the aggregation of individual potential that presents a strong sense of responsibility, a belief that can be controlled, and a resilient individual with a bright future.

B. From the perspective of attitude or belief construction

Maddi (1998) believed that this is an attitude or belief with which a person has courage and power in the interaction with the world, which is capable of transforming a stressful environment from a potential disaster to an opportunity. Maddi and Khoshaba (2005) held that people with hardinesspersonalitytend to interpret stresses and difficulties as something normal, which is of great interest and value. As a result, people of hardiness are regarded as positive and optimistic people. They focus on a glimmer of hope in any cases, and hardiness is considered to be one of the most significant factors in personal protection. According to Lyons, Schweitzer and Ng (2015) when a person's physical and mental health are undermined, hardiness becomes

the problem-solving ability and the fundamental element of the individual happiness (Chak & Leung, 2004;Coetzee & Masenge, 2013; Ferreira & Huang, 2015), A person's hardy character is unrestricted, which is able to cope with stress effectively. Hence, people with hardy characters have a strong sense of self-determination and self-efficacy. The ability to manage emotions is associated with problematic and disturbing solutions and personal emotions. Through commitment and adaptation to change, he / she would be able to control the feelings and behaviors, and even environment.

Liu (2003) suggested in the study of middle school that in a particular field, the higher sense of self-efficacy an individual has, the more confident he will be in his own ability, and the more controllable he feels for the impact of stress on himself, not to be afraid, and the less negative emotional experience he produces. Smith, Young and Lee (2004) also pointed out that a hardy individual should have "the ability to sustain physical and psychological pain, and the ability to resist stress, emergencies and difficulties, and the ability to exert power and influence, such as bravery, courage, and a sense of adventure". Besides, it is obvious that when the definition of a concept covers a wide range that it is difficult to understand the exact meaning of each researcher in using the definition, the scientific nature of the concept is thus questioned. The research on hardiness in the future must be more consistent with the problem of scientific definition, and further development can be realized. The model of the relationship between hardiness and health and performance proposed by Maddi (2002) presented the hardiness as an attitude. The hardy attitude is also called "3C" structure: commitment (seeking help rather than flinching), control (trying to exert influence rather than being powerless), challenging (trying to learn from positive and negative experiences rather than feeling threatened).

To sum up, in view of the research of students in six-year normal universities from junior high schools, the research tends to support the definition of hardiness proposed by Maddi (2002), and the hardiness is the courage and power of a person in the interaction with the world, through which the pressure-sensitive environment is transformed from potential disasters to opportunities and challenges.

2.4.2 Related Theories of Hardiness

Theories of psychological resilience:

Rutter, *et al*., (1972) found that in their studies, if children underwent same negative environment in the life of childhood, the developmental level of the psychological behavior abilities of the children was not the same, and the damage levels of individual ability were significantly different. Rutter *et al*. defined this phenomenon as psychological resilience. Wemer (1995) thought psychological resilience was individuals' hardiness when facing destructiveness and the characteristics or the ability to reduce misconduct as much as possible. Lazarus (1993) thought that, psychological resilience is individuals' resilience to successfully answer negative events and positively adapt to complex external environment. Psychological resilience is an emerging study, and it focuses on individuals' developing model and pressure dealing model. The theories of psychological resilience are with the same foundation of psychology. Psychological resilience believes that people are with potential, and people are able to positively face the adversity, which are very different from the negative ideas of psychopathology. At the initial stage of study, the scholars thought that psychological resilience was a stable personal characteristic which made the individuals remain to keep positive psychology and appropriate response behavior under adverse environment; later, scholars regarded psychological resilience in the light of dynamic development. Psychological resilience is more intent to be a psychological process where the individuals overcome the adverse factors in environment to obtain good development; individuals were with good adaptation under continuous life pressure; individuals' reasonable adjustment and recovery after psychic trauma were the specific performances of psychological resilience. Psychological resilience model of Richardson (2002) refers to that individuals achieve balance status which adept external environment, psychological resilience is the common effects of various protective factors and fatalness factors coming from inside and outside of the individuals. In this model, whether the individual system will be unbalanced is controlled by the interaction of dangerous life events and protective factors. If protective factors fail to defend the impacts of dangerous life events, the system will be unbalanced. Richardson thought that, psychological resilience had four recombination forms: I. Recombination of psychological resilience; II. Recombination of recursion; III. Recombination of deficiency; IV. Recombination of malfunction.

Generally, the study process of psychological resilience can be divided into three stages. In the first stage, the main work of the researches is evaluation and the developmental status of the study objects is evaluated to determine the hazardous factors formed due to psychological resilience and hazard rating. The researchers purely regard psychological resilience as a result of psychological development. The main study objects in the second stage are children. The researchers explain the psychological resilience from the perspective of individual psychological development. Children's consciousness to the effects of social environment, explanation to their experience, children's cognition and style of emotional processing are the research topics in this stage. In the third stage, researchers focus on how to interfere psychological resilience and explore the effective pathways for promotion of psychological resilience. Such works are under explosion at present.

Scholars commonly think that psychological resilience is a natural potential. Internal protective factors and external protective factors jointly promote the development of individual psychological resilience. The internal protective factors of psychological resilience are psychological needs, such as safety, love, affiliation, respect, control, talent and value, etc. External protective factors come from school, family, society and peer group, this is because that during teenagers' psychological development, affinity, high expectations and active involvement can be obtained from such factors. The characteristics of psychological resilience include cooperation, empathy, problem solving, ego, self-consciousness, self-awareness, target and ambition, etc., which can be improved after the development needs of the teenagers are satisfied.

Therefore, the theories of psychological resilience think that the characteristics of psychological resilience can promote the smooth development of teenagers in the aspects of school works, health and social performance. In addition, psychological resilience is an important dimension of the hardiness studies of Lu, *et al*., (2008), the theories of psychological resilience are much similar to hardiness.

2.4.3 Measuring Tools of Hardiness

Kobasa (1982) defined the model of hardiness as three attitudes, namely, commitment, control and challenge, a total of 27 items. Commitment enables individuals to see potential stress as meaningful. More interestingly, you may think of stress as something that can be changed (controlled), and you may see change as a normal feature of life (challenge). A. Commitment: Abdollahi *et al*.,(2015) defined commitment as an individual dedication to work, sports, academic activities, etc., his religion or hobby. For a person considered to be meaningful and interesting, commitment is an incentive to remain involved. B. Control: According to Abdollahi, *et al*., (2015), control refers to the beliefs of individuals which can influence their life experiences. C. Challenge: Huang (2015) defined challenge as an individual perception of the world. As a good learner, a strong individual has an opportunity for development. Maddi, *et al.*, (2012) believed that challenging stress is normal, and is an opportunity to grow rather than shrink.

PVS111-R Scale authorization provided by Maddi (2006) is selected and applied in this study, and translated by Lu and Liang (2008). After multiple Chinese-English inter-translation and comparison, the Chinese version of the questionnaire is formed with the original author's nod approval. Lu， *et al*.,(2008) conducted several measurement studies for Chinese college students and wrote the paper The Relationship of Hardiness, Stress and Psychological Symptoms of Undergraduates, which was published in the Chinese core journal Chinese Journal of Behavioral Medical Science, and Development of Hardiness Scale, which was published in the Chinese core journal Studies of Psychology and Behavior. The study found that under the Chinese culture, hardiness contains four dimensions instead of three dimensions. The revised and compiled Chinese version of Psychological Resilience Scale includes 27 questions and four dimensions, which is divided into A. Control (a total of 8 questions), B. Challenge (a total of 7 questions), C.Investment (a total of 6 questions) and D. Resilience (a total of 6 questions), and this version is applied to carry on the research.

2.4.4 Related Studies of Hardiness

In many researches, the studies about the variables of personal background related to hardiness are few, as shown below:

The hardiness related to correlational studies on population are: Kobasa (1979) thought that sex was irrelated to hardiness level, while ethnic group and culture were related to hardiness level. Wiebe (1991) thought that sex was irrelated to

hardiness level. Sun and Fu (2016) thought that controlled sex, grade, specialty and original of student, etc. were irrelated to hardiness level. Soderstrom, Dolbier, Liferman, *et al*., (2000) found that sex was irrelated to hardiness level. Zhang , Bian and Xu (2008) found that male and female college students were with the same hardiness level. Sophomores were with high hardiness levels, while senior students were with low hardiness levels.

The hardiness related to correlational studies on health are: Chen and Guo (2007) found that students of different specialties were with the same heath hardiness. Hull, Van and Virnelli (1987) found that promise and control were positively correlated with health.

In conclusion, in the studies of the scholars, different background variables were analyzed and studied as the factors affecting hardiness, and not all the obtained results were the same. This study takes students in free six-year normal universities from junior high schools as the research objects. Considering the particularity of such group, and on the basis of the reading and reference enlightenment of the above literatures, this study tries to take different background variables of the college students into the studies related to hardiness. The sex, grade, original of the students and the location of the schools will be emphatically analyzed to obtain the verification of relevant effects.

2.5 Conception and Related Studies of Learning Adaptation

2.5.1 Conception of Learning Adaptation

Adaptation is a generalized and multidimensional concept, it comes from Latin "adaptare". Adaptability of human to environment is an important content of psychological education, psychological guidance and psychological counseling. As for the relevant studies of Chinese scholars to LA, most of them use the explanation of Test of LAedited by Zhou . It is thought that, LAis a trend where the individuals overcome diffcuilties to get good learning effects, i.e., learning adaptability. In addition, some scholars hold different opinions. Tian and Zhang (2004) thought that, LA was "changes of students during learning in accordance with learning conditions (learning attitude, learning method and learning environment, etc.), and abilities of students to actively adjust mind and body to achieve balanced internal and external learning environment which facilitates development." Feng and Lo (2002) thought that LA was the psychological and behavior process where the subjects according to environments and demands of learning make efforts to adjust themselves to achieve balance with learning environments. This definition has also been referred by some other scholars. There are also some scholars refer to the views of Xu and Zheng (2000), LA "refers to student individuals actively adjust themselves to comply with the requirements of learning environment, including three parts of students, learning environment and change." LA is a tendency that the individuals are able to overcome various difficulties, meet the demands, adapt to environment changes and obtain good scholastic achievements during learning (Chen, Wang & Cao, 2011; Liu, Coplan, Chen, Li, Ding, *et al*., 2014; Fan & Liu, 2007; Meng, Yang, *et al*., 2015).

Therefore, the views of Feng *et al*., (2002) that LAwas the psychological and behavior process where the subjects according to environments and demands of learning make efforts to adjust themselves to achieve balance with learning environments were set as the foundation.

2.5.2 Related Theories of Learning Adaptation

Piaget deems that the nature of wisdom is a biological adaptation. The organism balances with environment in the constant motion and variation. In case that the balance between the organism and the environment disappears, it's necessary to change the behavior to rebuild the balance. The dynamic change process is called as adaptation. Scholars in China explain the concept of adaptation in many ways. Zheng (1994) thought the adaptation was the mental adaptability (namely mental ability of achieving a balance by the individual positively reacting upon the ambient environment with certain behavior in the process of interaction with the ambient environment and interacting with surrounding people). Xu (2000) deemed that the adaptation was the ability of the individual forming the corresponding mentality-behavior model for the sake of completing one social life adaptation process. Zhang , Feng, Guo and Chen *et al.*,(2000) deemed that adaptation was the ability of the individual harmonizing oneself with the environment by changing oneself or the environment in the socialization process. Che (2001) pointed out the adaptation was the ability of the individual's survival function, development and goal achievement changing accordingly in the change of social organization system, group or cultural and economic factors in the book-Encyclopedia of

Psychological Counseling as the editor-in-chief. From the Chinese and overseas study literatures related to adaptation, psychologists have different views on the definition of adaptation. It can be said that, the theories and empirical studies verify that the problems of students' adaptation generally exist, which makes students' adaptation become an important research topic and focus. To truly solve the problems of students' adaptation practically, the concepts related to adaptation have to be mastered, after that, the independent studies can be carried out to the internal mechanism. For the concepts related to adaptation, this study shows that generalization can be carried out from the following perspectives.

From the perspective of socialization, the typical discussion comes from Professor Jia (2001). He thought that the contents of social adaptation should include the following items: the first item was the adaptation to social living environment, including the adaptation to different life conditions and methods; the second item was the adaptation to various social roles, including formation of role awareness and mastering of different role codes of conduct; the third one was the adaptation to social activities, including mastering to activity rules and formation of activity ability. There is also someone thinking that the adaptability refer to that individuals independently process daily life and undertake social responsibilities to realize the expectations of their ages and the social cultural conditions, i.e., the individual adaptation to natural and environmental effectiveness (Soares, Francischetto, Miranda & Dutra, 2013).

Yu (1997) summarized the intrinsic properties of adaptation from the perspective of psychology to propose the concept of mental adaptation. Some researchers think that, mental adaptation means the changing process of individuals and environment during interaction. Chen and He (2005) thought that, mental adaptation was a positive respond acted by subjects to the environment, and the process to establish a balanced relationship with environment. In fact, their descriptions of mental adaptation are not materially different. All of them stress the interaction of individuals and environment, and the appropriatenes of individuals during interaction. However, there is no discussion to the process. Mental adaptation is an internalized individual dynamic process, and it is the result of personality integration operated by individuals. Individuals make internal personality form organic and meaningful relations to individuals by direct or indirect experience. This process is that of mental adaptation. Some studies show that, the concept of adaptation should be understood from two dominant and recessive dimensions. Dominance of adaptation problems includes two aspects: A. Presentation of adaptation effective. Namely, the effectiveness of adaptation with environment interpersonal relationship and self-adaptation. Do you adapt to individuals, whether the standards for evaluation is the appropriateness of cognition, emotion and behavioral expression. B. Dynamics and practical relevance of adaptation process. Namely, the problems of adaptation generated from the dynamic procedure of individual physical and mental development, and generated from the emotional precipitation caused by special personality characteristics and accumulated real-time scenario in various activities. Recessiveness of adaptation problems refers to consciousness and openness of adaptive organization. Any individual will be with adaptation problems during development, however, not all the problems will cause negative results, which indicates that the internal adaptation mechanism of individuals are with self-adjustment, individuals are able to positively adjust internal balance. The dominant characteristics of adaptation mainly represent as adaptation of students to special environment, while the recessive characteristics indicate that individual mental adaptation is an internal activity process, i.e., mechanism.

In conclusion, LA is an important content of individual social adaptation and a hot issue having been researched in the psychology and education fields in recent years. It can be seen from the theories of LA, individual LA is not only related to the support of important persons surrounded, at the same time, the degree of individual LA also directly affects behavior choice during execution of tasks, meanwhile, it will affect the emotional process of individual when individual completes the target of learning tasks, especially, it will affect the degree of the willingness of the individuals when they face learning difficulties or problems.

2.5.3 Dimension and Measurement

At present, the main scales associated with LA are School Adjustment Questionnaire and Teacher-Child Rating Scale. Although the names of the scales are diverse, there are different degrees of overlaps in the choice of dimensions. The tools may be the scales self-designed or developed or revised by other researchers or mental health or human relationship scale, such as

SCL90 or UPI personality questionnaire. The main scales associated with school adaptation in China are as follows: Hou (2014) divided school adaptation scale into 7 factors: LA (14 items), teacher-student relationship adaptation (13 items), collective adaptation (10 items), classmate relationship adaptation (5 items), autonomy (4 items), life adaptation (3 items), school environment adaptation (4 items).

He and Hu (2017) included 6 dimensions like school adaptation scale, interpersonal adaptation, professional adaptation, environmental identity, physical and mental adaptation, self-adaptation, life adaptation, a total of 45 items . The questionnaire used Likert 4 points to calculate the score. Specifically, 1 point refers to being very inconsistent, 2 points not quite consistent, 3 points more consistent, and 4 points very consistent, which is of good reliability and validity.

On the basis of the needs of the study, the LAfrom the perspective of college students' personality, temperament and learning atmosphere in this were mainly studied. Therefore, the adaptation scale by Feng *et al*., (2006) was employed for college students' LA, with a total of five items, 29 questions: A. 8 items for learning motivation, B. 7 items for teaching mode, C. 6 items for learning ability, D. 4 items for learning attitude, E. 5 items for environmental factors.

2.5.4 Related Studies of Learning Adaptation

In many researches, the studies about the variables of personal background related to LA are few, as shown below:

In accordance with the studies of Wang and Fan, *et al*., (2009), it can be known that, the overall LA of the college students in China is good, and the LA of the female college students is obviously superior to that of the male college students, the LA of tier I college students is superior to that of tier II college students, and there is no difference between the LAs of students of liberal arts and science. At present, the research of college students' LA carries out comparative studies for the college students of different types. He, *et al*., has carried out comparative studies to the LA of the college students of ethnic minorities and the Han ethnicity, the results indicate that, the LA of the Han students living together with ethnic minorities is significantly superior to that of the students of ethnic minorities. Feng and Yang , *et al.,* (2005) carried out comparative studies to the LA of higher vocational students and college students, they thought that the LAadaptation of higher vocational students was overall inferior to that of college students. Bian, *et al*., (2010) carried out studies to the LA of the college students with hearing impairment, the studies thought that the college students with hearing impairment were with higher learning motivation and professional interest than the normal college students, while their self-learning, learning behavior, information utilization and academic help-seeking were significantly lower than those of the normal college students. Xiong and Zhang (2010) studied the LA of the senior high school students from Xinjiang while studying in other province, the studies showed that, the learning conditions of the senior high school students from Xinjiang was good, sex or different grade was not significantly different. The studies of Wang (2016) for Chinese college students indicated that, internal control students were significantly and positively correlated with LA. Xu , Yu and Li (2005) thought that the LA of college students of senior grade was lower than that of the college students of junior grade, and the LA of the college students of science was stronger than that of the college students of liberal arts. When the free normal students are enrolled, they are with high enthusiasm, however, during study, they will gradually find that they lack of self-study ability and self-management. At the same time, their LA is poorer than that of the non-free normal students, which causes to that at the sophomore year, their LA rapid lowers (Chen, *et al.,* 2014).

In conclusion, in the studies of the scholars, different background variables were analyzed and studied as the factors affecting LA, and not all the obtained results were the same. This study takes students in free six-year normal universities from junior high schools as the research objects. Considering the particularity of such group, and on the basis of the reading and reference enlightenment of the above literatures, this study tries to take different background variables of the college students into the studies related to LA. The sex, grade, original of the students and the location of the schools will be emphatically analyzed to obtain the verification of relevant effects.

2.6 Research Hypothesis

2.6.1 Related Studies of Population Variables

A.Through literature retrieval, the TS related correlational research on the population includes: Marachi, Astor and Benbenishty (2007) found that background variables such as sex, educational level and school type have differences in TS. Lee

and Bierman (2015) found that background variables such as income level have differences in TS. Terhoeven (2009) found that background variables such as school dropout have differences in TS. Uchenna and Onuoha (2015) found that background variables such as age and ethnic group have differences in TS, and Uchenna and Onuoha (2019) found that background variables such as sex, school and grade have differences in TS. Sharma (2016) found that background variables such as grade and origin of student have differences in TS.

B. The LA related correlational research on the population includes: Feng (2006) found that background variables such as age and ethnic group have differences in LA. Sun and Fu (2016) found that background variables such as sex, grade, major and origin of student have differences in LA. Huang and Xu (2004) found that background variables such as grade and major have differences in LA. He, Zhang and Li (2004) found that background variables such as ethnic group have differences in LA. Chen and Xiong (2019) found that there is no significant difference in test scores cencerning differences in the social adaptation of art college students of different sex (P>0.05), and no significant difference is found in test scores cencerning differences in social adaptation of art college students who are only children and non-only children (P>0.05). However, there is significant difference in test scores cencerning differences in the social adaptation of art college students from different origins of student (F=2.422,P<0.05), among which, the scores of art college students from rural areas (51.19±7.22) is significantly greater than that of students from towns (49.64±7.64) and cities (48.60±7.72). Sun, Bao and Sun (2020) found that LA is irrelevant to sex, and the background variable-being the non-only child has difference in LA. Lu (2019) found that background variables such as sex and being the non-only child have differences in LA. Yong (2017) found that background variables such as sex and being the non-only child have significant differences in LA; and the background variable-grade have insignificant differences in LA. Pan (2020) background variables such as sex, being the non-only child and origin of student have differences in LA.

C. LOC related correlational research on the population includes: Lao (1977) found that background variables such as race and sex have differences in locus of control. Zhong and Li (2004) found that background variables such as sex, subject, gradeand origin of student have differences in locus of control. Gong and Huang (2005) found that background variables such as sex and being the only child have differences in locus of control. Gao *et al*., (2010) found that background variables such as sex have differences in locus of control. Li, Lin and Tian (2017) found that background variables such as sex, grade, school and being the only child have differences in locus of control. Lu (2019) found that background variables such as being the non-only child have differences in locus of control. Yong (2017) found that locus of control differs significantly dut to sex differences and being the only children or not, and there is an insignificant difference in grade.

D. The hardiness related correlational studies on population include: Kobasa (1979) found that background variables such as sex, race and educational level have differences in hardiness. Wiebe (1991) found that background variables such as sex have differences in hardiness. Sun *et al*., (2016) found that background variables such as sex, grade, major and origin of student have differences in hardiness. Soderstrom, Dolbier, Liferman, *et al*., (2000) found that background variables such as sex have differences in hardiness. Li (2020) found that hardiness has a negative effect on sex and a positive effect on grade and school. Luo (2019) found that background variables such as grade, being the only child, major and origin of student have differences in hardiness. Huang(2017)found that background variables such as sex, grade, major and origin of student have not differences in hardiness.

Accordingly, the following hypothesis are put forward:

H1: background variables (sex, grade, only child or not, school locus of controlation and origin of students) of the six-year normal students from junior middle schools, there are significant differences in the class instructor and teachers support, Learning Adaptation, locus of control and hardiness.

H1.1: Background variables of sex of students in free six-year normal universities from junior high schools are with differences in teachers support, locus of control, hardiness and learning adaptation.

H1.2: Background variables of grade of students in free six-year normal universities from junior high schools are with differences in teachers support, locus of control, hardiness and learning adaptation .

H1.3: Background variables Only child or not of students in free six-year normal universities from junior high schools are with differences in hardiness, locus of control, hardiness and learning adaptation .

H1.4: Background variables of School locus of controlation of students in free six-year normal universities from junior high schools are with differences in learning adaptation.

H1.5: Background variables Origin of students in free six-year normal universities from junior high schools are with differences in learning adaptation.

2.6.2 Related Studies of Teachers Support and Learning Adaptation

In the 20th century, the social situation in the United States pushed scholars to study social support. At that time, the political situation in the United States was unstable, people were living under great pressure, the incidence of psychosomatic diseases were increasing remarkably, and suicides took place frequently. Scholars began to study the influence of the relationship between life stress and physical and mental health. The study found that in stressful situations, those who received more material support and psychological support from family, companions and friends were healthier and happier than those who didn't. Since then, the terminology of social support has gradually taken place in sociology, social psychiatry and epidemiological circles. At present, it has become one of the research focus in the field of psychology (Brophy, Maras & Wang, 2015; Suldo, *et al.*, 2009).

Due to the different research purposes of different scholars and the different understanding of social support, the definition of social support among and within different disciplines has not been unified.

On the concept of social support, scholars have the following categories. From the perspective of the nature of social support, it includes objective support and subjective support. Objective support emphasizes the actual support that is existent, visible, and independent of the individual subjective feelings; while subjective support emphasizes support, understanding and respecting individual can feel from the social environment. From the perspective of the source of individual support, social supports are from family support, friend support, to TS. Among them, TS has the greatest impact on college students. From the perspective of the influence of TS on individuals, TS includes cognitive support, emotional support and behavioral support. Cognitive support refers to helping individuals by providing information, advice and relevant knowledge to individuals; emotional support refers to supporting individuals through listening, comforting and understanding; behavioral support refers to giving individual support through actual deeds (Baysu, 2005; Chen, Xin, Rubin & Kenneth, 1995).

At present, TS by Deiro (2005) is recognized and applied by most scholars: teachers participate in the development and improvement of students' sense of self-efficacy through effective learning motivation, strategies and high expectations from students. They try to establish a close teacher-student relationship with students by providing all kinds of possible help and support for students. With a variety of help from the teachers, students can reduce psychological stress (personal flexibility), alleviate mental tension, improve students' beliefs and school adaptability.

The studies of Reddy, Rhodes and Mulhall (2003) indicated that the relationship of TS and school adaptation were with significant positive effects in LA level. The studies of Garcia-Reid and Peterson (2015) also verified the importance of TS to academic input of the students. The studies of Uchenna and. Onuoha (2015) found and verified the positive effects of TS in the aspects of helping students to complete courses, at the same time, TS limited the participation of students in dangerous behaviors. Xiao (2016) studied the relationship between TS and school adaptation, the results indicated that the relationship was with significant positive effects in the aspect of LA. TS is able to significantly predict the LA of the students (Rueger, Malecki & Demaray, 2010).

It has been found that the more TS the teenagers perceive, the better LA they have.

Based on it, the following hypothesis is put forward:

H2: Perceived predictive role of teachers support on learning adaptation can influence students in free six-year normal universities from junior high schools .

2.6.3 Related Studies of Teachers Support and Locus of Control

In the study of TS and locus of control, Mugeau *et al*.,(2003), Wentzel (2009) explains the concept of TS from the theory of self-determination motivation, focusing on perceiving TS from the starting point of students' motivation inside and outside themselves. According to Cao, Zeng (2008), when students experience more social supports (praise from teachers, concern from relatives, assistance from classmates, for instance), they tend to consider that the praise and assistance they receive are associated with their own efforts, which triggers off positive self-evaluation. This kind of positive self-evaluation is the presentation of internal control. As a part of social support, the influence of TS on LOC can foster students' positive self-evaluation and promote LA. On the contrary, it will lead to students' negative self-evaluation, which may come from the individual's perception of the influence of powerful people or opportunities, so it is the presentation of external control, and may play a negative role in LA. Contextual Systems Model believes that the development of children cannot be separated from the related contextual system. In the classroom system, the teacher-student relationship and classmate relationship students perceived have a great impact on their normal growth. Relevant literature has proved that the source of LOC is constantly changing with age. Whether does the LOC change with the age of students in free six-year normal universities from junior high schools？TS has an effect on the LOC of these students？How influential is it? That's what this study is about.

Based on it, the following hypothesis is put forward:

H3: Perceived posive role of teacher suppport on locus of control can influence students in free six-year normal universities from junior high schools.

2.6.4 Related Studies of Locus of Control and Learning Adaptation

According to Soare, Francischetto, Miranda and Dutra (2013) LAmeans that students make a series of reactions by using their own adjustment system, making their psychology and behaviors meet the requirements of environmental change and their own development to achieve a state of harmony and balance between themselves and the environment. Compas, Connorsmith, Saltzman, Thomsen and Wadsworth (2001) considered school adaptation as one of the most significant forms of adaptation for students, which is closely associated with mental health. In Yu (2007) the poor school adaptation often results in such psychological problems as low self-esteem and loneliness. In the study of school adaptation, the personality factor is the variables widely concerned by many scholars. Current researches have found that the psychological factor is an significant factor of the school adaptation, and it can effectively predict the LA of the university students.

Internal control is with positive effects to LA (BAR-TAL, KFIR, BAR-ZOHAR & CHEN, 1980; Twenge, Zhang & Im, 2004). Internal control of LOC and the behavior which may increase LA are with systematic link (BAR-TAL & BAR-ZOHAR, 1977). Rotter (1975) believed that LOC is one of the crucial psychological factors that affect LA, which refers to the cognition or orientation of individual's responsibility for their own behavior and results. Huang *et al*., (2011) held that the LOC has a remarkable predictive effect on school adaptation. College students with more internal control tend to better adapt to school. According to Xu (2005), the stronger the college students' special anxiety is or with more external control, the worse their learning adaptability is, and vice versa. Accordingly, the following hypothesis is proposed:

H4: Locus of control has positive prediction influence on learning adaptation of students in free six-year normal universities from junior high schools.

2.6.5 Related Studies of The Mediatation of Locus of Control

In relevant literature, the research results of LOC as mediation variables are quite abundant. Pierce *et al.,* (2001) believed that LOC is an significant structural component of promoting the development of psychological ownership. in Nehra (2018) the results showed that the tendency of internal control plays a mediator in personality integration and self-exposure. Taiwan scholar Tan and Chang (2013) has proved that low self-control and attachment as mediator in peer relationship deviation and juvenile delinquency. Toni and Bergeman (1999) pointed out that LOC as mediator between social support and subjective well-being.

Pallav Pokhrel, Thaddeus , Herzog, Sun, Louise, Rohrbach and Steve (2013) proved that among the three-path mediatorswith statistical significance, the influence of bad social self-control and peer companionship have great influence on

expected media in cultural adaptation. Cao and Zeng (2008) believed LOC plays a mediation role in the relationship between social support and subjective well-being. In the study of middle school students, Liu (2003) suggested that in a particular field, the higher sense of self-efficacy an individual has, the more confident he will be in his own ability, and the more controllable he feels for the impact of stress on himself, unterrified, and the less negative emotional experience they produce. While the individuals with higher score of opportunity scale show more tendency of external control. They think that the outcome of events is mainly controlled by external factors and that the opportunity can have a great influence on life experience and results of event, so they are more likely to be at a loss in face of stress, and rarely actively mobilize their own energy to solve problems, resulting in strong reaction to stress. Some studies have shown that LOC also affects the interpersonal relationship of students. This hypothesis is proposed:

H5: Locus of control as mediator on teacher suppport and learning adaptation of students in free six-year normal universities from junior high schools.

2.6.6 Related Studies of The Moderator of Hardiness

A large number of studies have shown that hardiness can reduce the individual response to stress and physical response, improve individual coping ability, and enhance their self-esteem and self-confidence, therefore to maintain mental health. Soderstrom *et al.,* (2000)found that the higher the hardiness, the less psychological symptoms, which have negative correlation. Britt (2001) found that individual hardiness can benefit from stress by acting on individual perception of the meaning in work. Ma (2011) confirmed this result. Li (2006) also found that hardiness could significantly predict the psychological symptoms of college students: those with high hardiness could face up to stress and frustration, and actively seek strategies to solve the predicament, and the level of mental health would be higher. In addition, the empirical study of Wei (2009) showed that the hardiness plays an significant moderator between psychological stress and school adaptation. Lu (2008) showed that hardiness can cushion the negative effects of stress on psychosomatic health and as moderator in the relationship between stress and psychological symptoms. Sun *et al.,* (2016) introduced hardiness into the study of school adaptation, making it a moderator to study the relationship between hardiness and college students' stress and school adaptation. Hardiness as moderator between stress and college adaptation. Based on it, the following hypothesis is put forward:

H6: Hardiness as moderator on teacher suppport and learning adaptation of students in free six-year normal universities from junior high schools.

CHAPTER 3
RESEARCH METHODS

This part is based on the above mentioned study purpose, study motivation and literatures to discuss and summarize the study results of the scholars to be the foundation of the study design and study structure of this study. Sectional survey and questionnaire survey are used to collect materials to understand the current saturation and relation of TS, LA, LOC and hardiness of the students in three undergraduate universities in Hunan Province, China. This part has seven sections. Section I is research structure to make the relations among the variables and the dimensions of each variable cleare; Section II is the research hypothesis of this study; Section III is the detailed information of the study objects; Section IV is the study tools, this section describes four study tool and significance used in this study; Section V is the testing process and testing of validity and reliability for trial test questionnaire; Section VI is the narration of the method of data statistical analysis; and Section VII is the procedures of this study.

3.1 Research Framework

This study is based on the triadic theory of learning mentioned by Bandura (1977, 1986) in Social Learning Theory, and this study also combines with relevant literatures of the relations among individual locus of control, hardiness, LA and external environment TS (Chen, *et al.*, 2014; Deiro, 2005; Feng & Li, 2002; Maddi, 2002; Rotter ,1990). After sorting, the architecture diagram of this study is shown as Figure 3.1:

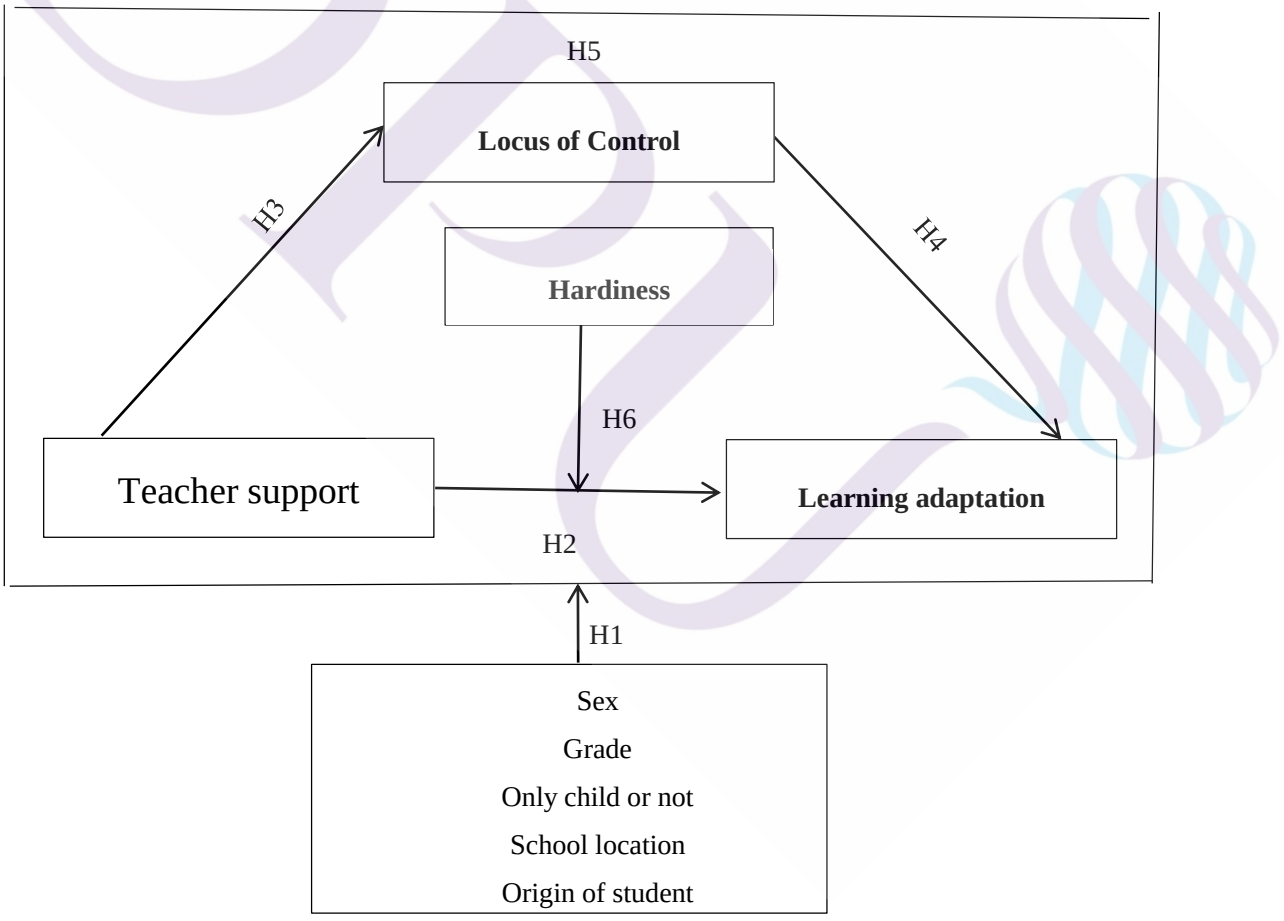


Figure 3.1 Research Framework

Source: Chen, Wu and Qin, 2014; Deiro, 2005;Feng and Li , 2002; Maddi, 2002; Rotter,1990.

Background variables:

Students' sex, grade, be only child or not, school location and origin of student to analyze that whether TS, locus of control, hardiness or LA of the students in free six-year normal universities from junior high schools in Hunan will change due to different background variables. (Chen, *et al.*, 2014;He, 1981; Kobasa, 1979; Lai, 2002; Marachi, Astor & Benbenishty, 2007; Sun & Fu, 2016; Soderstrom, Dolbier & Liferman, *et al*., 2000; Uchenna & Onuoha, 2015;Wang & Fan, 2009; Wiebe, 1991; Zhang, Bian & Xu, 2008).

3.2 Population, Sample, and Participants; Units of Analysis

Hunan is locus of controlated in south central China with population of 70 million which as well as ringed on three sides by mountains and ringed on one side by Dongting lake, where there are more poor people in mountainous areas and in rural areas with underdevelopment of education. To improve the quality of primary and secondary school education in mountainous areas and rural areas and solve the stability problem of rural teachers, People's Government of Hunan Province and Hunan Education Department enroll undergraduate normal university students from junior high schools in the teacher education reform. In these three schools, there are 13,000 students in free six-year normal universities from junior high, including 5,200 in provincial university A, 3,900 in local university B, and 3,900 in local university C. When the mother group is larger, it's difficult for researches to conduct random sampling technically and the purposive sampling (namely non-probability sampling) can be considered (Sun & Luo, 2002). The convenience sampling is the non-probability sampling based on research convenience as main consideration factor pursuant to physical truth of the researcher and required information can be acquired timely (Lin, 2002). The research is conducted by the convenience sampling through questionnaire, which includes four sheets with total 99 questions. Such large number of questions makes students feel bored. We ask for help from the head teacher and instructor for training and psychological guidance to surveyed students, so that the students participate in the research under the principle of voluntariness.

The samples are collected from three undergraduate universities, A, B and C, in Hunan Province. Wherein, University A is the school which has been rated as a excellent university in the appraisal of Hunan normal teacher cultivation, and it is the first key university recruiting students in free six-year normal universities from junior high schools for reformation of pedagogical education in Hunan. University A is relatively famous in China, and it is located in the capital of Hunan Province; University B is a comprehensive university composed by normal schools and other colleges, it is the second batch of university recruiting talent of students in free six-year normal universities from junior high schools in Hunan. University B is near to Dongting Lake, and it is located in the west of Hunan; University C is a comprehensive institution of higher education. Its location is relatively faraway, and it is located in an economic less-developed region. Therefore, this study takesthree typical school as the samples. In this study, study samples are extracted from above-mentioned three universities in a convenient way at two time points. Effective samples are divided into two batches as per these two time points (including the first batch-trial test questionnaire time (Sept. 2019) and the second batch-formal questionnaire time (Jan. 2020). As for these two batches of samples, online questionnaires are sent to the mobile phones of free normal students from junior high schools of six grades (including freshmen, sophomores, junior students, senior students, the fifth year college students and the sixth year college students) via WeChat and QQ by researchers with the help of the counsellor. The first batch of samples are trial test samples (n=400) used for analyzing scale items for this study, exploratory factors and reliability and the second batch of samples are formal samples (n=1,138) used for testing confirmatory factor analysis of all scales for this study and verifying the research hypothesis. A total of 1,147 questionnaires are taken back with 9 invalid questionnaires eliminated (lack of questionnaire information and questionnaire with the same number filled in for consecutive Y items) and 1138 valid questionnaires recycled, so the effective rate of questionnaires reaches to 99.2%.

3.2.1 Pre-test Samples

In inferential statistics, the selection of sample size may be related to the reliability of research results. Hinkle and Oliver once pointed out that: 1. When other conditions were not changed, the research findings obtained from large sample size would be more reliable than those obtained from small sample size; 2. If the sample size was too small, the results of inferential statistics may fail to refuse null hypothesis; 3. Even in a research with rigorous design, the number of criterion variables may be large while the treatment effect was not so clear, therefore, selection of relatively large sample size was appropriate and necessary (Wu & Tu, 2005). However, what sample size will make the statistical results significant and with actual meaning? Gay (1992) thought that, the sample size of descriptive research should be at least 10% of parent population. If parent population is relatively small, the sample size should be 20% of parent population. However, when the actual study situation is considered, acceptable tested sample size should be an index for reference, no matter what the sample size is, the most important thing is to collect the samples, which can correctly reflect the characteristics of parent population (Wu, *et al.*, 2005).

In accordance with the principles of exploratory factor analysis, the ratio of scale questions and sample size should be larger than 1:5 (Chen, Cheng, Chen & Liu, 2009). There are 95 questions in four scales for this study and at least 400 persons are needed for calculating trial test samples. Hence, 400 students from three universities in Hunan (including six grades) are extracted to be used as measured objects of the default questionnaire. After all questionnaires are answered, four invalid questionnaires are removed and 396 valid questionnaires are recycled with recovery being 96%, so 396 effective pre- test samples are extracted for this study.

In this study, normality test is conducted for all the data of 396 pre- test samples. Test results showed that absolute value of skewness coefficient (Skew) was less than standard value - 3 (Kline, 1998); the absolute value of the coefficient of kurtosis (Kurtosis) is less than the standard value - 10 (Huang, 2002), showing the sample data complies with normal distribution. As shown in Table 3.1:

Table 3.1 Normal Distribution of Pre-test Data

	Skewness	Kurtosis
Locus of control	-0.861	0.663
Hardiness	-1.024	1.168
Teacher support	-0.493	-0.167
Learning adaptation	-1.17	1.836

Five background variables, including sex, grade,only child or not and school location and being the origin of student are investigated, and the results show that: in terms of sex, there are 113 males accounting for 28.5% of the sample size and 283 females accounting 71.5% of the sample size; in terms of grade, there are 92 freshmen accounting for 23.2 of the sample size, 106 sophomores accounting for 26.8% of the sample size, 78 juniors accounting for 19.7% of the sample size, 71 seniors accounting for 17.9% of the sample size, 32 normal students of the fifth year accounting for 8.1% of the sample size and 17 normal students of the sixth year accounting for 4.3% of the sample size; in terms of origin of student, there are 181 students from rural areas accounting for 45.7% of the sample size and 215 students from urban areas accounting for 54.3% of the sample size; in terms of being the only child or not, 258 students are the only children accounting for 65.2% of the sample size, and 138 students are non-only children accounting for 34.8% of the sample size; in terms of school location, there 145 students in universities in provincial capitals accounting for 36.6% of the sample size, and 251 students in local universities accounting for 63.4% of the sample size. The above data show that in this sample, there are 170 males less than females, the number of freshman, sophomore, junior and senior students is balanced with a large proportion, while the proportion of normal students of the fifth and sixth year is smaller. Most of the students are from urban areas, and most of them are non-only children. As shown in Table 3.2:

Table 3.2 Sample Description

Background variables	Variable name	Number of students	Percentage
Sex	Male	113	28.5
	Female	283	71.5
Grade	Grade one	92	23.2
	Grade two	106	26.8
	Grade three	78	19.7
	Grade four	71	17.9
	Grade five	32	8.1
	Grade six	17	4.3
School location	Provincial capital A	145	36.6
	Local university B	127	32.1
	Local university C	124	31.3
Only child or not	No	138	34.8
	Yes	258	65.2
Origin of student	Rural areas	181	45.7
	City	215	54.3

3.2.2 Formal Samples

In the actual measurement process of formal questionnaires, it's the best that average sample number of regional samples shall be about 1,000 according to the suggestion from the researcher (Wu, 2010).

Therefore, classes and grades having participated in default questionnaire are eliminated when formal questionnaires are issued for this study and questionnaires are issued to 1,147 students from two universities in Hunan (including three grades). After all the questionnaires are answered, 9 invalid questionnaires are removed and 1,138 valid questionnaires are recycled with recovery being 99.2%. As a result, 1,138 valid formal samples are extracted for this study.

3.3 Variable Measurement, Instruments, and Materials

Questionnaire was used as a tool in this study, and the compilation of the questionnaire is as follows:

The development process of the research tool used in this study is based on that of Li (2009) scale, including the definition of content orientation, definition of observation index, quantification of index and the test of subjectivity and reliability between indicators. Besides, it was based on the five development principles by Bollen & Lennox. The standards are as follows:

A. The explicit index of the same construction should be highly consistent with that of internal.

B. The higher the correlation between the explicit indexes of the same construction, the better.

C. In the same dimension construction, the explicit index can be replaced in essence if the reliability is the same.

D.The correlation within the same construction should be higher than that of each other.

E. The linear composition of the index can replace the potential variables.

This research scale is based on the above principles and the results of previous researchers in their practical research in China.

This research tool was divided into three parts, and experts were invited to review it to improve the content validity of the questionnaire after the first draft of the pre-test questionnaire was prepared, and the pre-test questionnaire was revised after discussing with the supervising advisor with reference to experts' opinions. Modification principles of the questions: If there are more questions in the same dimension, and the expert does not think a certain question fits, the question is deleted; Personnel information of review experts is as shown in Table 3.3:

Table 3.3 Personnel Information of Review Experts (in the Order of Number of Strokes of the Surname)

S/N	Expert name	Title	Serving school
1	A	Professor, doctoral advisor	Hunan Normal University
2	B	Professor, doctoral advisor	Hunan Normal University
3	C	Professor, doctoral advisor	Shinawatra University
4	D	Professor	Hunan University of Science and Technology
5	E	Professor	Hunan University of Arts and Science

A. The TS scale was compiled based on the scale of teacher difference behavior by Ouyang (2005) and Babad *et al*. (1990) The scale can be divided into three dimensions: emotional support, ability support and learning support, This study adopts Likert 5-point scale .

Table 3.4The Dimensions of Teacher Support Questionnaire and the Items in Each Dismension

Dimensions	Item number	Item content
Learning Support	ls1	1. When you answer the question, the teacher will tell me whether I answer it rightly or wrongly
	ls2	2. The teacher will praise me when I behave myself in class
	ls3	3. The teacher hints me to answer the question with encouraging eyes
	ls4	4. The teacher deems that I'm always able to complete difficult assignment or task
	ls5	5. The teacher always criticizes me when I fail to answer the question or give a wrong answer to the question
	ls6	6. The teacher always support me to participate in various activities and competitions
	ls7	7. The teacher often repeatedly explains the question asked to me when I fail to answer it
Emotion Support	es1	1. The teacher is kind to me
	es2	2. The teacher looks me in the eye when I answer the question
	es3	3. My homework is usually commended by the teacher
	es4	4. The teacher asks me to answer the question in class
	es5	5. The teacher looks at me with smile on his/her face when I answer the question
	es6	6. The teacher often encourages me in the learning and life.
Capacity Support	cs1	1. The teacher puts forward strict requirements against me in the learning and life
	cs2	2. The teacher often asks me to take charge of class issues
	cs3	3. The teacher often recommends me to take part in all kinds of activities or competitions
	cs4	4. I often feel that the teacher gives me high expectations

Note: 1.ls=learning support, es=emotion support, cs=capacity support.

B. In the learning adaptation Scale, 29 questions in the universities students' learning adaptation scale prepared by Feng *et al*., (2006) ,This version is chosen for this study.

Table 3.5 The Dimensions of Learning Adaptation Questionnaire and the Items in Each Dismension

Dimensions	Item number	Item content
Learning	lm1	1. I feel I adapt to the university learning.
	lm2	2. I have my own learning method and plan and can put them into practice.
	lm3	3. I feel I lost the goal of learning.
	lm4	4. I become lazy obviously after attending university.
	lm5	5. I cannot arrange the time without urgency of learning
	lm6	6. My learning objective becomes more definite after attending university.
	lm7	7. My learning is very effective.
	lm8	8. I feel the lack of my knowledge, so I study harder
Teaching mode	tm1	1. The university teacher's teaching method always makes me uncomfortable.
	tm2	2. I don't adapt to the university timetable.
	tm3	3. I neglect my studies because of adverse opinions regarding college students in the society (such as "uselessness of getting schooling").
	tm4	4. I feel uncomfortable because the university learning is out of touch with middle school.
	tm5	5. The management style against students in the university is worse than that of the middle school.
	tm6	6. I catch many bad habits after attending university.
	tm7	7. I often cherish the memory of previous classmates and things and cannot help myself.
Learning ability	le1	1. My way of thinking becomes more mature after attending university.
	le2	2. I think that I become more flexible after attending university.
	le3	3. My independence is remarkably strengthened after attending university.
	le4	4. I think I have a wider understanding about the world with clearer future after attending university.
	le5	5. I always make unremitting efforts to improve myself due to fierce competition in the university.
	le6	6. My practical ability is markedly enhanced after attending university.
Learning attitude	la1	1. My learning initiative is affected because I'm not interested in the professional courses.
	la2	2. The university learning relies on personal interest other than method.
	la3	3. I study only for credits and diploma.
	la4	4. Why take it too seriously! You will adapt to the university learning if you turn a blind eye to it.
Environmental	en1	1. The family economic conditions have a big influence on learning.
	en2	2. The college living conditions have a big influence on learning.
	en3	3. The employment status in the future influences my learning a lot.
	en4	4. The interpersonal relationship in university has a great influence on learning.

Note: 1.lm=learning motivation,tm=Teaching mode, le=Learning ability, la=Learning attitude, en=Environmental.

C. Hardiness dimensions of Kobasa (1982) include commitment, control and challenge with 27 observation

items. Based on (Likert) 5-point scale, the Chinese questionnaire is formed upon authorization by PVS111-R scale from Maddi translated by Lu *et al.*, (2008) with repeated Chinese-English intertranslation and consent by the original authoor which is divided into four dimensions, This version is chosen for this study.

Table 3.6 The Dimensions of Hardiness Questionnaire and the Items in Each Dismension

Dimensions	Item number	Item content
Control	co1	1. I will try every means to find the solution for the difficulty
	co2	2. I will do my best to turn the scale in case of encountering the wrong end of the stick
	co3	3. I can still keep my spirits up even under bad circumstances
	co4	4. I will try my best to find the cause of the problem
	co5	5. I will try to calm down the person who is angry with me
	co6	6. I can always get my ideas into shape quickly regardless of how complicated the problem is
	co7	7. I often regard the difficult in life as challenge other than threat
	co8	8. I will keep my head in case of being criticized
Challenges	ch1	1. The change in life and work usually makes me feel excited
	ch2	2. I like to try something new and exciting
	ch3	3. I prefer challenging and changeable jobs
	ch4	4. I prefer to take on important work
	ch5	5. I'm motivated to study by breaking the routine
	ch6	6. I'm willing to give up the stability of life to get the opportunity of facing major challenges
	ch7	7. Embracing new situations is an important thing in my life
Involvement	in1	1. Work and learning will give me fun
	in2	2. I look forward to working/studying almost every day
	in3	3. Doing things actively and diligently makes me excited
	in4	4. Busy pace of life makes me feel fulfilled
	in5	5. I'm always passionate about working
	in6	6. I do simple things very dedicating
Resilience	re1	1. I can always achieve the goal by my own efforts
	re2	2. I can insist on doing a difficult thing as long as it is meaningful
	re3	3. I am not afraid of any difficulty if I decide to do it
	re4	4. I won't easily give up my own ideal and pursuit
	re5	5. I can overcome any difficulty as long as I make great efforts
	re6	6. I won't give up easily even though encountering the obstacle if the goal is confirmed

Note: 1.co=Control, ch=Challenges, in=Involvement, re=Resilience.

D. The LOC scale is based on relevant literature and analysis in this study. The Levenson (1973) IPC scale is used for LOC measurement in this study. This version is chosen for this study.

Table 3.7 The Dimensions of Locus of Control Questionnaire and the Items in Each Dismension

Dimensions	Item number	Item content
Internal focus of control	ic1	1. I'm chosen as class leader due to my own ability
	ic2	2. I'm almost sure I can execute it when I make a plan
	ic3	3. I often discover those to occur are meant to happen
	ic4	4. I can totally control everything in my life
	ic5	5. I can protect my own interests generally
	ic6	6. I get what I want usually because I work hard for it
	ic7	7. My life is determined by my behavior.
Other influential person	ot1	1. Although my ability is good enough, I won't be entrusted with an important post if I don't draw persons in high position over to my side
	ot2	2. My life is often controlled by influential persons
	ot3	3. In case of the conflict between influential groups, people like me can rarely have a chance to protect own personal interests
	ot4	4. In my opinion, making a plan early isn't always wise because many things are proven to depend on luck
	ot5	5. I need to play up to someone more powerful than me for the sake of getting what I want
	ot6	6. If an important figure dislike me, I may not make too many friends
	ot7	7. Whether a car accident happens to me depends on other driver
	ot8	8. To implement my plan, I'm sure such plan meets the taste of persons more powerful than me
Opportunities	op1	1. My life is controlled by accidents to a great extent
	op2	2. I feel the thing happening in my life is controlled by the influential person
	op3	3. Whether a car accident occurs to me relies on my cycling technology
	op4	4. I cannot protect my own interests in case of encountering unlucky things
	op5	5. I get what I pursue often because I'm lucky
	op6	6. My life is often controlled by influential persons
	op7	7. Whether a car accident happens to me mainly depends on luck
	op8	8. Whether I can be an official depends on whether I'm lucky enough and in the right position at the right time

Note: 1. ic=Internal focus of control, ot= Other influential person, op=Opportunities,

3.4 Data Analytical Techniques

For the results of the collected questionnaire,project analysis, factor analysis and reliability analysis with SPSS22 software were conducted, and AMOS 3.0 to carry out confirmatory factor analysis was used. The final results should have at least three questions for each potential construction surface, and it is best to have five to seven questions (Bollen, 1989).

3.4.1 Project Analysis

Project analysis is the most basic work in the development of the scale. The main purpose of project analysis is to evaluate the appropriateness of the pre-test items (Qiu, 2000), that is, to test the reliable process of each item in the table. In this study, the project analysis standard of Wu (2009) was adopted, and the project analysis was divided into three categories

and six criteria, which were used as the basis of project analysis. The main results were as follows:

The comparison of extreme group- critical ration

There are three groups according to the total score of the scale. The first 27% and the last 27% of the groups were the high score group and low score group, respectively. Then, the t test of the average difference is carried out. If the CR obtained does not reach the significant level, it is suggested that the test questions should be deleted.

3.4.2 The Correlation Test

A. Items -Total correlation

Each separate score and the score associated with the total score are calculated. It is suggested that the correlation between the items should be deleted if the correlation between the items is below .05, the prominent level. And the items should be deleted if the correlation between the items is too high, because it suggests that the overlapping between the items is too high.

B. Corrected Item-Total correlation

The correlation coefficient between the item and the total score is to calculate the Pearson product of correlation coefficient between each item and the total score (except the score of the item). The criterion for selecting the item in this study is that the correlation coefficient between the revised items and the total score of the scale should be more than 0.4, with .05 the statistically significant level.

3.4.3 Homogeneity Test

A.The α value after deletion

Cronbach α verified the internal consistency of the questionnaire item, and evaluated the reliability and stability of the whole scale, and modified and adjusted the evaluation item with low reliability. In addition, the Cronbach α value after deletion refers to the Cronbach α coefficient of the whole scale after the deletion of the item. Therefore, it is convenient to find a more accurate scale with high stability.

B.Homogeneity and factor load

The aim of homogeneity by using factor load is to extract the common basic factors from the problem, especially to reduce the main factors according to the degree of correlation of multiple variables, to simplify the complexity between variables, and expect to construct the maximal interpretation of the original variables. Therefore, in part of factor analysis, items would be deleted on the basis of homogeneity and factor load, thus achieving the greatest homogeneity among the common factors. In terms of the whole scale, with principal component analysis, and under the extraction of the maximal components. It is advisable to delete the items whose homogeneity is below. 2. According to the factor load by Wu (2008), the factor load , with between 120 and 150 samples, they will be deleted when reaching the standard 0.5.

3.4.4 Factor Analysis

Factor analysis helps to assist the test researchers to verify the effect of construction, and make the researchers simplify the content of the measurement, so that many variables with similar generality can be simplified into several specific homogeneous categories through the transformation of mathematical relations, and can be used to assist in the preparation of the test and the analysis of the items, therefore, to test the quality of the test questions (Qiu , 2000).

3.4.5 Confirmatory Factor Analysis

A. Items of estimation critical less

The complete standard solution and estimation of t value of each parameter showed that the estimated parameters are significant ($t > 1.96$, with 0.05 the significant level), and the positive and negative sign of the estimated value is consistent with the theory, indicating that the factor structure of the scale has been verified and has good construction validity.

B. Items with the lowest regression weight

When it comes to retaining the items, this study takes the regression weight between the variables and the potential variables as the criterion for the retention and deletion. Bagozzi (1988) pointed out that the factor load between the

potential variable and its measurement index should be between .50 and .95.

C.Estimate fit

In terms of the use of index, Bentler (1999) advocated SRMR, and combined with other evaluation model like NNFI, CFI or RMSEA. Generally speaking, when the above indexes are used to judge the adaptability of the model, the criteria are as follows: RMSEA and SRMR should be less than 0.08, while NNFI and CFI should be more than 0.90 (Qiu , 2012). Therefore, this study mainly refers to the above indexes to evaluate model fit.

3.4.6 Validity Analysis

In this study, Cronbach's alpha coefficient method was used to obtain the internal consistency (Cronbach, 1951). Many scholars (DeVellis, 2003; Hair *et al*., 2006; Henson, 2001; Nunnally, 1978) held that the value of Cronbach's alpha coefficient above .70 is reliable, which shows good internal consistency of the scale.

3.4.7 Convergent Validity Analysis

Convergent validity analysis is tested by factor load and dimensionreliability. According to Fornell and Larcker (1981), the higher the dimension reliability indicates higher internal consistency of each potential variant. It is suggested that the internal quality of the model would be ideal if the value reaches. In addition, Fornell, *et al.*, (1981) suggested that the standard value of the extraction of average variation should be over 0.5, which indicates good convergence of this method.

According to the above steps, the data were collected and analyzed by SPSS and AMOS software. Further research will be conducted by using descriptive analysis, reliability analysis, convergent and discriminant validity, model fit, structural equation, and moderator verification step by step.

3.5 Analysis on Pre-test Questionnaire Items and Testing of Reliability and Validity

The item analysis will be conducted for four scales-TS, locus of control, hardiness and LA as follows, respectively.

3.5.1 Item Analysis of TS Pre-test Questionnaire

In the item analysis on TS pre-test questionnaire, Wu (2008) item analysis criterion is adopted and the item analysis is divided into three categories (extreme group comparison method, correlational analysis method and homogeneity test) with 6 judgement standards. In this study, the standard of deleting the question (Wu ,2008) will be adopted if no less than two (inclusive) indicators fail to meet the standards. The above standard will be used as criterion of whether the question shall be deleted for item analysis. In terms of extreme group comparison-decision value comparison, the CR value of question ls8 and ls9 in all TS dimensions is lower than 3 and the CR value of other questions is 12.077-19.167, exceeding the judgement standard-3.00 and reaching to the significant standard according to the item analysis result of TS scale below. In terms of correlation detection, the correlation value between question ls8 and ls9 in TS dimensions as well as aggregate score is lower than 0.4 and the correlation value between other questions and aggregate score is 0.594-0.718, exceeding the judgement standard 0.400 and reaching to the significant standard; After the calibration, the correlation value between question ls8 and ls9 as well as aggregate score is lower than 0.4 and the correlation value between other questions as well as aggregate score is 0.531-0.673, exceeding the judgement standard-0.400; In terms of homogeneity test, the Cronbach's α value of question ls8 and ls9 in all TS dimensions after deletion is 0.899 and the Cronbach's α value of all other questions after deletion is 0.889-0.894, conforming to the judgement standard-being less than 0.899. The intercommunity value of question ls8 and ls9 is less than 0.2 and the intercommunity value of all other questions is 0.552-0.84 with the intercommunity value of all the questions exceeding the 0.2 standard. The factor loading value of question ls8 and ls9 is lower than 0.5 and the factor loading value of all other questions is 0.743-0.916 with the factor loading value of all the questions exceeding the 0.5 standards.

Therefore, based on all data regarding extreme group comparison - decision value comparison, correlation detection and homogeneity test in the TS questionnaire item analysis, six indicators of all questions (except for question ls8 and ls9) in the scale reach to the standard value, so question ls8 and ls9 in the scale are deleted with remaining questions reserved. Refer to the following table for the detail:

Table 3.8 Item Analysis of Teacher Support Pre-test Questionnaire

Dimensions	Item number	Extreme group	Correlation detection		Homogeneity test			Indacatoras Not Reached	Notes
		CR value	correlation between the Item and Total score	correlation of Total score after correction	α value after correction	Commonality	Factor load		
Selection criteria		≧3.0	≧.400	≧.400	<.944	≧.20	≧.50		
Learning support	ls1	14.844	.703**	0.66	0.89	0.743	0.862	0	Retained
	ls2	13.226	.617**	0.552	0.893	0.633	0.796	0	Retained
	ls3	12.077	.595**	0.538	0.893	0.618	0.786	0	Retained
	ls4	14.754	.716**	0.673	0.89	0.711	0.843	0	Retained
	ls5	14.382	.633**	0.578	0.892	0.573	0.757	0	Retained
	ls6	16.627	.670**	0.621	0.891	0.655	0.81	0	Retained
	ls7	17.078	.654**	0.597	0.892	0.596	0.772	0	Retained
	ls8	1.966	.158**	0.048	0.906	0.036	0.188	6	Deleted
	ls9	2.391	.127*	0.071	0.906	0.031	0.176	6	Deleted
Emotional support	es1	17.647	.687**	0.635	0.891	0.696	0.834	0	Retained
	es2	15.512	.629**	0.565	0.893	0.552	0.743	0	Retained
	es3	13.587	.644**	0.585	0.892	0.641	0.801	0	Retained
	es4	14.144	.594**	0.531	0.894	0.624	0.79	0	Retained
	es5	15.392	.648**	0.591	0.892	0.698	0.835	0	Retained
	es6	15.663	.658**	0.606	0.892	0.665	0.815	0	Retained
Capacity support	cs1	14.953	.606**	0.541	0.893	0.671	0.819	0	Retained
	cs2	13.810	.625**	0.569	0.893	0.749	0.865	0	Retained
	cs3	19.167	.718**	0.667	0.889	0.84	0.916	0	Retained
	cs4	15.166	.602**	0.538	0.893	0.789	0.888	0	Retained

Note: 1. ls=Learning support, es=Emotional support, cs=Capacity support.

3.5.2 Item Analysis of Learning Adaptation Pre-test Questionnaire

In the item analysis on LA trial test questionnaire, Wu (2008) item analysis criterion is adopted and the item analysis is divided into three categories (extreme group comparison method, correlational analysis method and homogeneity test) with 6 judgement standards. In this study, the standard of deleting the question (Wu, 2008) will be adopted if no less than two (inclusive) indicators fail to meet the standards. The above standard will be used as criterion of whether the question shall be deleted for item analysis. In terms of extreme group comparison-decision value comparison, the CR value of questions in all hardiness dimensions is 7.715-20.712, exceeding the judgement standard-3.00 and reaching to the significant standard in line with the analysis result of LA scale items in the following table. In terms of correlation detection, the correlation value between questions in all LA dimension and aggregate score is 0.533-0.747, exceeding the judgement standard-0.400 and reaching to the significant standard; the correlation value between the question and aggregate score after the calibration is 0.488-0.718 and the correlation value of all the questions exceeds the judgement standard-0.400; in terms of homogeneity test, the Cronbach's α

value of all the questions in all social support dimensions after deletion is 0.941-0.943 with the rest conforming to the judgement standard-being less than 0.944; the intercommunity value of all questions is 0.467-0.802, exceeding the 0.2 standard; the factor loading value of all questions is 0.683-0.895, exceeding the 0.5 standard.

Therefore, as per all data concerning extreme group comparison-decision value comparison, correlation detection and homogeneity test in the LA questionnaire item analysis, six indicators of all questions in the scale reach to the standard value, so no question is deleted in the scale with all the questions reserved. Refer to the following table for the detail.

Table 3.9 Item Analysis of Learning Adaptation Pre-test Questionnaire

Dimensions	Item number	Extreme group	correlation detection			Homogeneity test		Indacatoras Not Reached	Notes
		CR value	correlation between the Item and Total score	correlation of Total score after correction	α value after correction	Commonality	Factor load		
Selection criteria		≧3.0	≧.400	≧.400	<.944	≧.20	≧.50		
Learning motivation	lm1	10.544	.617**	0.582	0.942	0.699	0.836	0	Retained
	lm2	11.501	.590**	0.5	0.943	0.611	0.782	0	Retained
	lm3	10.758	.610**	0.578	0.942	0.581	0.762	0	Retained
	lm4	11.094	.613**	0.579	0.942	0.611	0.782	0	Retained
	lm5	11.137	.605**	0.57	0.942	0.467	0.683	0	Retained
	lm6	12.972	.636**	0.598	0.942	0.673	0.82	0	Retained
	lm7	13.013	.624**	0.588	0.942	0.619	0.787	0	Retained
	lm8	10.198	.569**	0.528	0.943	0.52	0.743	0	Retained
Teaching mode	tm1	14.478	.600**	0.561	0.942	0.592	0.769	0	Retained
	tm2	14.420	.641**	0.608	0.942	0.56	0.746	0	Retained
	tm3	20.712	.747**	0.718	0.941	0.802	0.8955	0	Retained
	tm4	18.716	.674**	0.64	0.942	0.728	0.853	0	Retained
	tm5	15.141	.684**	0.651	0.941	0.639	0.8	0	Retained
	tm6	16.391	.671**	0.639	0.942	0.67	0.818	0	Retained
	tm7	17.455	.685**	0.65	0.941	0.664	0.815	0	Retained
Learning ability	le1	10.470	.648**	0.617	0.942	0.741	0.861	0	Retained
	le2	11.298	.675**	0.645	0.942	0.652	0.808	0	Retained
	le3	7.870	.595**	0.564	0.942	0.599	0.774	0	Retained
	le4	10.781	.601**	0.568	0.942	0.598	0.773	0	Retained
	le5	7.715	.576**	0.538	0.943	0.683	0.826	0	Retained
	le6	8.910	.613**	0.583	0.942	0.659	0.812	0	Retained
Learning attitude	la1	11.260	.631**	0.593	0.942	0.789	0.888	0	Retained
	la2	11.427	.681**	0.653	0.942	0.712	0.84	0	Retained
	la3	11.526	.552**	0.51	0.943	0.726	0.852	0	Retained
	la4	9.950	.553**	0.488	0.943	0.624	0.79	0	Retained
Environmental	en1	12.242	.659**	0.624	0.942	0.699	0.836	0	Retained
	en2	9.146	.576**	0.535	0.943	0.683	0.827	0	Retained
	en3	12.047	.638**	0.602	0.942	0.721	0.849	0	Retained
	en4	11.155	.612**	0.573	0.942	0.695	0.834	0	Retained

Note: 1. lm=Learning motivation, tm=Teaching mode, le=Learning ability, la=Learning attitude, en=Environmental

3.5.3 Item Analysis of Hardiness Pre-test Questionnaire

In the item analysis on LA trial test questionnaire, Wu (2008) item analysis criterion is adopted and the item analysis

is divided into three categories (extreme group comparison method, correlational analysis method and homogeneity test) with 6 judgement standards. In this study, the standard of deleting the question (Wu, 2008) will be adopted if no less than two (inclusive) indicators fail to meet the standards. The above standard will be used as criterion of whether the question shall be deleted for item analysis. In terms of extreme group comparison-decision value comparison, the CR value of questions in all hardiness dimensions is 8.139-16.67, exceeding the judgement standard-3.00 and reaching to the significant standard in line with the analysis result ofhardiness scale items in the following table; in terms of correlation detection, the correlation value between questions in all hardiness dimension and aggregate score is 0.552-0.679, exceeding the judgement standard-0.400 and reaching to the significant standard; the correlation value between the question and aggregate score after the calibration is 0.509-0.641 and the correlation value of all the questions exceeds the judgement standard-0.400; in terms of homogeneity test, the Cronbach's α value of all the questions in all hardiness dimensions after deletion is 0.931-0.933 with the rest, conforming to the judgement standard-being less than 0.934; the intercommunity value of all questions is 0.526-0.718, exceeding the 0.2 standard; The factor loading value of all questions is 0.725-0.847, exceeding the 0.5 standard.

Therefore, as per all data concerning extreme group comparison-decision value comparison, correlation detection and homogeneity test in the hardiness questionnaire item analysis, six indicators of all questions in the scale reach to the standard value, so no question is deleted in the scale with all the questions reserved. Refer to the following table for the detail.

Table 3.10 Item Analysis of Hardiness Pre-test Questionnaire

Dimensions	Item number	Extreme group	Correlation detection		Homogeneity test		Indacatoras Not Reached	Notes
		CR valu	correlation between the Item and Total score	correlation of Total score after correction	α value after correction	Commonality	Factor load	
Selection criteria		≧3.0	≧.400	≧.400	<.934	≧.20	≧.50		
Control	co1	11.808	.566**	0.524	0.932	0.669	0.818	0	Retained
	co2	15.598	.659**	0.619	0.931	0.715	0.845	0	Retained
	co3	12.643	.577**	0.534	0.932	0.553	0.744	0	Retained
	co4	13.205	.610**	0.57	0.932	0.67	0.819	0	Retained
	co5	14.541	.591**	0.549	0.932	0.526	0.725	0	Retained
	co6	15.960	.618**	0.574	0.932	0.644	0.803	0	Retained
	co7	12.537	.591**	0.546	0.932	0.599	0.774	0	Retained
	co8	13.239	.605**	0.562	0.932	0.635	0.797	0	Retained
Challenges	ch1	15.026	.620**	0.578	0.932	0.638	0.799	0	Retained
	ch2	12.782	.607**	0.57	0.932	0.677	0.823	0	Retained
	ch3	11.925	.602**	0.56	0.932	0.588	0.767	0	Retained
	ch4	16.670	.646**	0.602	0.931	0.603	0.777	0	Retained
	ch5	16.343	.679**	0.641	0.931	0.675	0.821	0	Retained
	ch6	11.364	.591**	0.548	0.932	0.558	0.747	0	Retained
	ch7	13.047	.620**	0.579	0.932	0.599	0.774	0	Retained
Investment	in1	8.565	.580**	0.542	0.932	0.642	0.801	0	Retained
	in2	10.824	.664**	0.632	0.931	0.616	0.785	0	Retained
	in3	8.139	.556**	0.518	0.933	0.589	0.768	0	Retained
	in4	8.242	.583**	0.544	0.932	0.655	0.809	0	Retained
	in5	8.255	.552**	0.509	0.933	0.605	0.778	0	Retained
	in6	8.433	.592**	0.558	0.932	0.718	0.847	0	Retained
Resilience	re1	13.047	.663**	0.625	0.931	0.685	0.827	0	Retained
	re2	12.144	.627**	0.592	0.932	0.625	0.791	0	Retained
	re3	10.555	.602**	0.559	0.932	0.665	0.815	0	Retained
	re4	10.489	.603**	0.562	0.932	0.58	0.761	0	Retained
	re5	11.122	.597**	0.555	0.932	0.625	0.791	0	Retained
	re6	11.517	.626**	0.587	0.932	0.609	0.78	0	Retained

Note: 1.co=Control, ch=Challenges, in=Investment, re=Resilience.

3.5.4 Item Analysis of Locus of Control Pre-test Questionnaire

In the item analysis on LOC trial test questionnaire, Wu (2008) item analysis criterion is adopted and the item analysis is divided into three categories (extreme group comparison method, correlational analysis method and homogeneity test) with 6 judgement standards. In this study, the standard of deleting the question (Wu, 2008) will be adopted if no less than two

(inclusive) indicators fail to meet the standards. The above standard will be used as criterion of whether the question shall be deleted for item analysis. In terms of extreme group comparison-decision value comparison, the CR value of question ot9 in all LOC dimensions is lower than 3 and the CR value of all other questions is 10.821-20.269, exceeding the judgement standard-3.00 and reaching to the significant standard pursuant to the LOC scale item analysis result in the following table; in terms of correlation detection, the correlation value between question ot9 in locus of control dimensions as well as aggregate score is lower than 0.4 and the correlation value between other questions and aggregate score is 0.476-0.760, exceeding the judgement standard 0.400 and reaching to the significant standard. After the calibration, the correlation value between question ot9 as well as aggregate score is lower than 0.4 and the correlation value between other questions as well as aggregate score is 0.42-0.731, exceeding the judgement standard-0.400; in terms of homogeneity test, the Cronbach's α value of question ot9 and op9 in all LOC dimensions after deletion is 0.928 and the Cronbach's α value of all other questions after deletion is 0.923-0.928, conforming to the judgement standard-being less than 0.928. The intercommunity value of question ot9 and op9 is less than 0.2 and the intercommunity value of all other questions is 0.488-0.78 with the intercommunity value of all the questions exceeding the 0.2 standards.

The factor loading value of question ot9 is lower than 0.5 and the factor loading value of all other questions is 0.699~0.883 with the factor loading value of all the questions exceeding the 0.5 standards.

Hence, based on all data regarding extreme group comparison - decision value comparison, correlation detection and homogeneity test in the LOC questionnaire item analysis, six indicators of all questions (except for question ot9) in the scale reach to the standard value, so question ot9 in the scale are deleted with remaining questions reserved. Refer to the following table for the detail:

Table 3.11 Item Analysis of Locus of Control Pre-test Questionnaire

Dimensions	Item number	Extreme group	Correlation detection		Homogeneity test			Indacatoras Not Reached	Notes
		CR valu	correlation between the Item and Total score	correlation of Total score after correction	α value after correction	Commonality	Factor load		
Selection criteria		≧3.0	≧.400	≧.400	<.928	≧.20	≧.50		
Internal focus of control	ic1	19.797	.687**	0.647	0.924	0.639	0.799	0	Retained
	ic2	16.425	.629**	0.588	0.925	0.606	0.779	0	Retained
	ic3	17.128	.662**	0.62	0.925	0.737	0.858	0	Retained
	ic4	14.898	.611**	0.565	0.926	0.702	0.838	0	Retained
	ic5	10.953	.476**	0.42	0.928	0.488	0.699	0	Retained
	ic6	13.402	.617**	0.577	0.925	0.661	0.813	0	Retained
	ic7	14.867	.581**	0.529	0.926	0.608	0.78	0	Retained
Other influential person	ot1	16.072	.663**	0.63	0.925	0.64	0.8	0	Retained
	ot2	17.752	.660**	0.619	0.925	0.68	0.825	0	Retained
	ot3	15.437	.618**	0.578	0.925	0.563	0.75	0	Retained
	ot4	13.877	.621**	0.581	0.925	0.624	0.79	0	Retained
	ot5	13.908	.633**	0.593	0.925	0.529	0.728	0	Retained
	ot6	20.269	.659**	0.618	0.925	0.676	0.822	0	Retained
	ot7	19.429	.644**	0.603	0.925	0.632	0.795	0	Retained
	ot8	16.230	.670**	0.63	0.925	0.755	0.869	0	Retained
	ot9	.108	0.069	-0.001	0.935	0.013	0.115	5	Deleted
Opportunities	op1	11.164	.677**	0.639	0.924	0.66	0.813	0	Retained
	op2	12.650	.679**	0.639	0.924	0.606	0.778	0	Retained
	op3	12.978	.685**	0.646	0.924	0.6	0.775	0	Retained
	op4	12.679	.678**	0.64	0.924	0.56	0.749	0	Retained
	op5	14.515	.760**	0.731	0.923	0.78	0.883	0	Retained
	op6	10.821	.677**	0.639	0.924	0.556	0.746	0	Retained
	op7	12.945	.683**	0.647	0.924	0.664	0.815	0	Retained
	op8	11.713	.706**	0.672	0.924	0.71	0.843	0	Retained
	op9	1.782	.166**	0.104	0.932	0.054	0.232	5	Deleted

Note: 1.ic=Internal focus of control, ot=Other influential person, op=Opportunities.

3.5.5 Testing of Reliability and Validity for the Pre- Test Questionnaire

A. Reliability and validity analysis for the TS scale pre-test questionnaire

Ⅰ. TS scale trial test questionnaire validity analysis

The SPSS24.0 sofware and exploratory factor analysis (EFA) method are used for validity test in this scale. The principal component analysis is chosen for extraction and the varimax method is used for rotating shaft. According to the TS factor analysis and reliability analysis result in the scale, the scale value- KMO value is 918 and the Bartlett sphericity test chi-

square is 4160.661 (P<.001), representing that the scale is suitable to adopt the factor analysis (Kaiser, 1974). 3 factors are extracted which are named as learning support, emotional support and ability support. As per the result, factor loading values of questions based on above-mentioned three factors are 0.722-0.834, 0.67-0.808 and 0.768-0.869 which obviously exceed the 0.5 standards, all dimension characteristic values are 4.527, 3.91 and 3.117, explanatory variances are 26.632%, 23.003% and 18.336% and the cumulative total explanatory variance is 67.971%. Therefore, the above data shows that the scale is with good validity (Tabachnick, Fidell, & Ullman, 2007).

Table 3.12 Dimension Factor Analysis and Reliability Analysis of Teacher Support

Dimensions	Item number	Factor load	Square Load after Axis Conversion		Cronbach's α
			Eigenvalue	explanatory variation (%)	
Learning support	ls1	0.834	4.527	26.632	0.908
	ls2	0.794			
	ls3	0.788			
	ls4	0.799			
	ls5	0.722			
	ls6	0.777			
	ls7	0.733			
Emotional support	es1	0.768	3.91	23.003	0.889
	es2	0.67			
	es3	0.753			
	es4	0.793			
	es5	0.808			
	es6	0.77			
Capacity support	cs1	0.768	3.117	18.336	0.895
	cs2	0.82			
	cs3	0.834			
	cs4	0.869			
cumulative total explanatory variation: 67.971%					
overall reliability of the scale: 0.914					

Note:1.ls=Learning support, es=Emotional support, cs=Capacity support.

II. TS scale trial test questionnaire reliability analysis

The Cronbach's α is used for reliability test in the scale of this study. According to the analysis result, Cronbach's α coefficients of three factors in the TS scale-learning support, emotional support and ability support are 0.908, 0.889 and 0.895 and the Cronbach's α of the total scale is 0.914, showing that the scale is with good internal consistency (Nunnally, 1978). as shown in the above table.

B.Validity and reliability analysis for the LA scale pre- test questionnaire

Ⅰ. Analysis of validity for the LA scale pre-test questionnaire

The SPSS software and exploratory factor analysis (EFA) method are used for the validity test in this scale. The principal component analysis is chosen for extraction and the varimax method is used for rotating shaft. According to the LA factor analysis and reliability analysis result in the scale, the scale value- KMO value is 927 and the Bartlett sphericity test chi-square is 7385.955 (P<.001), representing that the scale is suitable to adopt the factor analysis (Kaiser, 1974). Five factors are extracted which are named as: learning motivation, teaching mode, learning ability, learning attitude and environmental factor. On the basis of the result, factor loading values of questions based on above-mentioned five factors are 0.577-0.809, 0.648-

0.808, 0.678-0.795, 0.684-0.814 and 0.709-0.766, obviously exceeding the 0.5 standards. All dimension characteristic values are 4.899, 4.723, 4.037, 2.93 and 2.832, explanatory variances are 16.894%, 16.285%, 13.922%, 10.104% and 9.767% and the cumulative total explanatory variance is 66.973%. Therefore, the above data shows that the scale is with good validity (Tabachnick, Fidell & Ullman, 2007).

Table 3.13 Dimension Factor Analysis and Reliability Analysis of Learning Adaptation

Dimensions	Item number	Factors	Square Load after Axis Conversion		Cronbach's α
		Loads	Eigenvalue	Explanatory variation(%)	
Learning motivation	lm1	0.809	4.899	16.894	0.904
	lm2	0.751			
	lm3	0.71			
	lm4	0.728			
	lm5	0.577			
	lm6	0.772			
	lm7	0.723			
	lm8	0.716			
Teaching mode	tm1	0.749	4.723	16.285	0.915
	tm2	0.648			
	tm3	0.808			
	tm4	0.804			
	tm5	0.701			
	tm6	0.746			
	tm7	0.734			
Learning ability	le1	0.781	4.037	13.922	0.894
	le2	0.689			
	le3	0.714			
	le4	0.678			
	le5	0.795			
	le6	0.766			
Learning attitude	la1	0.81	2.93	10.104	0.862
	la2	0.684			
	la3	0.814			
	la4	0.73			
Environmental	en1	0.709	2.832	9.767	0.857
	en2	0.766			
	en3	0.739			
	en4	0.746			
Cumulative total explanatory variation: 66.973%					
overall reliability of the scale: 0.944					

Note: 1. lm=Learning motivation, tm=Teaching mode, le=Learning ability, en=Environmental.

II. Analysis of reliability for the LA scale pre- test questionnaire

The Cronbach's α is used for reliability test in the scale of this study. According to the analysis result, Cronbach's α coefficients of three factors in the LA scale-learning motivation, teaching mode and learning ability, learning attitude, environment factors are 0.904, 0.915 and 0.894, 0.862, 0.857, and the Cronbach's α of the total scale is 0.944, showing that the scale is with good internal consistency (Nunnally, 1978). as shown in the above table.

C. Reliability and validity analysis for the LOC scale pre- test questionnaire

Ⅰ. Analysis of validity for the locus of control scale trial test questionnaire

The SPSS software and exploratory factor analysis (EFA) method are used for validity test in this scale. The principal component analysis is chosen for extraction and the varimax method is used for rotating shaft. According to the LOC factor analysis and reliability analysis result in the scale, the scale value- KMO value is .941 and the Bartlett sphericity test chi-square is 5871.545 (P<.001), representing that the scale is suitable to adopt the factor analysis (Kaiser, 1974). Three factors are extracted which are named as: Internal focus of control, influential person and chance. In accordance with the result, factor loading values of questions based on above-mentioned three factors are 0.71-0.821, 0.655-0.844 and 0.654-0.811, obviously exceeding the 0.5 standards, all dimension characteristic values are 5.216, 5.046 and 0.4513, explanatory variances are 22.677%, 21.941% and 19.622% and the cumulative total explanatory variance is 64.239%. Therefore, the above data shows that the scale is with good validity (Tabachnick, Fidell & Ullman, 2007).

Table 3.14 Dimension Factor Analysis and Reliability Analysis of Locus of Control

Dimensions	Item number	Factors	Square Load after Axis Conversion		Cronbach's α
		Loads	Eigenvalue	explanatory variation (%)	
Internal focus of control	ic1	0.71	5.216	22.677	0.902
	ic2	0.714			
	ic3	0.81			
	ic4	0.821			
	ic5	0.712			
	ic6	0.769			
	ic7	0.748			
Other influential person	ot1	0.741	5.046	21.941	0.918
	ot2	0.779			
	ot3	0.706			
	ot4	0.763			
	ot5	0.655			
	ot6	0.79			
	ot7	0.758			
	ot8	0.844			
Opportunities	op1	0.773	4.513	19.622	0.919
	op2	0.719			
	op3	0.699			
	op4	0.662			
	op5	0.811			
	op6	0.654			
	op7	0.77			
	op8	0.795			
Cumulative total explanatory variation: 64.239%					
Overall reliability of the scale: 0.939					

Note: 1. ic=Internal focus of control, ot=Other influential person, op=Opportunities.

II. Analysis of reliability for the locus of control scale pre-test questionnaire

The Cronbach's α is used for reliability test in the scale of this study. According to the analysis result, Cronbach's α coefficients of three factors in the LOC scale-learning support - internal focus of control, other influential persons, and opportunities are 0.902, 0.918 and 0.919 and the Cronbach's α of the total scale is 0.939, showing that the scale is with good

internal consistency (Nunnally, 1978), as shown in the above table.

D.Validity and reliability analysis for the hardiness scale trial test questionnaire

Ⅰ.Analysis of validity for the hardiness scale trial test questionnaire

The SPSS software and exploratory factor analysis (EFA) method are used for validity test in this scale. The principal component analysis is chosen for extraction and the varimax method is used for rotating shaft. According to the hardiness factor analysis and reliability analysis result in the scale, the scale value- KMO value is 921 and the Bartlett sphericity test chi-square is 6462.809 (P<.001), representing that the scale is suitable to adopt the factor analysis (Kaiser, 1974). Fourthfactors are extracted which are named as: Control, challenge, input and hardiness. As per the result, factor loading values of above-mentioned four factors are 0.672-0.815, 0.691-0.792, 0.671-0.812 and 0.662-0.772, exceeding the 0.5 standard, all dimension characteristic values are 5.158, 4.375, 3.871 and 3.789, explanatory variances are 19.103%, 16.204%, 14.336% and 14.032% and the cumulative total explanatory variance is 63.674%. Therefore, the above data shows that the scale is with good validity (Tabachnick, Fidell, & Ullman, 2007).

Table 3.15 Dimension Factor Analysis and Reliability Analysis of Hardiness

Dimension	Item number	Factors Loads	Square Load after Axis Conversion Eigenvalue	explanatory variation (%)	Cronbach's α
Control	co1	0.815	5.158	19.103	0.914
	co2	0.805			
	co3	0.705			
	co4	0.795			
	co5	0.672			
	co6	0.768			
	co7	0.74			
	co8	0.77			
Challenges	ch1	0.759	4.375	16.204	0.896
	ch2	0.792			
	ch3	0.717			
	ch4	0.691			
	ch5	0.745			
	ch6	0.714			
	ch7	0.706			
Investment	in1	0.734	3.871	14.336	0.885
	in2	0.671			
	in3	0.731			
	in4	0.759			
	in5	0.735			
	in6	0.812			
Resilience	re1	0.749	3.789	14.032	0.883
	re2	0.699			
	re3	0.772			
	re4	0.662			
	re5	0.754			
	re6	0.698			
Cumulative total explanatory variation: 63.674%					
Overall reliability of the scale: 0.934					

Note: 1. co=Control, ch=Challenges , in=Investment, re=Resilience.

II. Hardiness scale pre-test questionnaire reliability analysis

The Cronbach's α is used for reliability test in the scale of this study. According to the analysis result, Cronbach's α coefficients of three factors in the hardiness control, challenge, input and hardiness are 0.914, 0.896, 0.885 and 0.883, and the Cronbach's α of the total scale is 0.934, showing that the scale is with good internal consistency (Nunnally, 1978) as shown in

the above table.

D. Contentsh content validity of experts

After the experts reviewed the questionnaire, the researcher systematized suggestions for revision into Table 3. According to the statistical table, we can see that the number of questions belonging to "fit" and "fit after revision" reached at least 60% of the number of experts, no question was deleted, and the pre-test questionnaire was put into use after revising in accordance with experts' opinions.

Table 3.16 Statistical Table of Experts' Review Comments on Teacher Support Scale

Dimension	Original question number	Question number in the revised pre_test questionnaire	Fit		Fit after revision		Result
			n	%	n	%	
Learning support	4	1	4	80	1	20	Retain
	6	2	4	80	1	20	Retain
	7	3	3	60	2	40	Retain
	8	4	5	100	0	0	Retain
	11	5	4	40	1	20	Retain
	12	6	4	80	1	20	Retain
	14	7	5	100	0	0	Retain
	18	8	1	20	4	80	Delete
	19	9	1	20	4	80	Delete
Emotional support	3	1	5	100	0	0	Retain
	9	2	4	80	1	20	Retain
	10	3	4	80	1	20	Retain
	13	4	3	60	2	40	Retain
	15	5	4	80	1	20	Retain
	16	6	3	60	2	40	Retain
Capacity support	1	1	4	80	1	20	Retain
	2	2	3	60	2	40	Retain
	5	3	4	80	1	20	Retain
	17	4	3	60	2	40	Retain

Table 3.17 Statistical Table of Experts' Review Comments on Learning Adaptability Scale

Dimension	Original question number	Question number in the revised pre_test questionnaire	Fit		Fit after revision		Result
			n	%	n	%	Retain
Learning motivation	1	1	4	80	1	20	Retain
	3	2	4	80	1	20	Retain
	5	3	3	60	2	40	Retain
	12	4	5	100	0	0	Retain
	26	5	2	40	3	60	Retain
	27	6	4	80	1	20	Retain
	28	7	4	80	1	20	Retain
	29	8	4	80	1	20	Retain
Teaching model	2	1	5	100	0	0	Retain
	4	2	4	80	1	20	Retain
	11	3	4	80	1	20	Retain
	16	4	3	60	2	40	Retain
	17	5	4	80	1	20	Retain
	18	6	3	60	2	40	Retain
	20	7	5	100	0	0	Retain
Learning ability	6	1	4	80	1	20	Retain
	7	2	3	60	2	40	Retain
	10	3	4	80	1	20	Retain
	13	4	3	60	2	40	Retain
	15	5	4	80	1	20	Retain
	21	6	4	80	1	20	Retain
Learning attitude	8	1	5	100	0	0	Retain
	14	2	4	80	1	20	Retain
	19	3	4	80	1	20	Retain
	22	4	3	60	2	40	Retain
Environmental factors	9	1	5	100	0	0	Retain
	23	2	4	80	1	20	Retain
	24	3	4	80	1	20	Retain
	25	4	3	60	2	40	Retain

Table 3.18 Statistical Table of Experts' Review Comments on Hardiness Scale

Dimension	Original question number	Question number in the revised pre_test questionnaire	Fit		Fit after revision		Result
			n	%	n	%	Retain
Control	8	1	4	80	1	20	Retain
	14	2	4	80	1	20	Retain
	15	3	3	60	2	40	Retain
	20	4	5	100	0	0	Retain
	21	5	2	40	3	60	Retain
	22	6	4	80	1	20	Retain
	26	7	1	20	4	80	Retain
	27	8			1	20	Retain
Challenges	2	1	5	100	0	0	Retain
	3	2	4	80	1	20	Retain
	4	3	4	80	1	20	Retain
	10	4	3	60	2	40	Retain
	18	5	4	80	1	20	Retain
	24	6	3	60	2	40	Retain
	25	7	4	80	1	20	Retain
Investment	6	1	4	80	1	20	Retain
	7	2	3	60	2	40	Retain
	9	3	4	80	1	20	Retain
	11	4	3	60	2	40	Retain
	16	5	4	80	1	20	Retain
	17	6	5	100	0	0	Retain
Resilience	1	1	4	80	1	20	Retain
	5	2	3	60	2	40	Retain
	12	3	5	100	0	0	Retain
	13	4	2	40	3	60	Retain
	19	5	4	80	1	20	Retain
	23	6	4	80	1	20	Retain

Table 3 .19 Statistical Table of Experts' Review Comments on Locus of Control Scale

Dimension	Original question number	Question number in the revised questionnaire	pre_test	Fit		Fit after revision		Result
				n	%	n	%	Retain
Internal control	1	1		4	80	1	20	Retain
	5	2		4	80	1	20	Retain
	10	3		3	60	2	40	Retain
	18	4		5	100	0	0	Retain
	19	5		4	80	1	20	Retain
	21	6		4	80	1	20	Retain
	23	7		4	80	1	20	Retain
Other influential person	8	1		5	100	0	0	Retain
	11	2		4	80	1	20	Retain
	13	3		4	80	1	20	Retain
	14	4		3	60	2	40	Retain
	15	5		4	80	1	20	Retain
	17	6		3	60	2	40	Retain
	20	7		4	80	1	20	Retain
	22	8		3	60	2	40	Retain
	24			1	20	1	80	Delete
Opportunities	2	1		4	80	1	20	Retain
	3	2		3	60	2	40	Retain
	4	3		4	80	1	20	Retain
	6	4		3	60	2	40	Retain
	7	5		4	80	1	20	Retain
	11	6		4	80	1	20	Retain
	12	7		3	60	2	40	Retain
	16	8		5	100	0	0	Retain

As for this study, formal questionnaires will be sent to interviewees after the trial test questionnaire is completed and revised for three weeks. To keep preciseness of this study and ensure consistency and reliability of formal questionnaires, the reliability and validity verification for formal questionnaires taken back is conducted by the researcher by SPSS and AMOS.

3.6 Discriminant Validity Test

In this study, the strict AVE method is used to evaluate the discriminatory validity (Fornell and Larcker, 1981). AVE sqrt of each factor shall be more than the correlation coefficient of each pair of variables, showing the discriminatory validity exists between factors. The AVE sqrt of each factor shall exceed the normalized correlation coefficient outside the diagonal, thus this study is still with discriminatory validity and the oblique triangle is the correlation coefficient. Refer to the following table for details

Table 3.20 Checklist of Discriminant Validity

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1ls	0.772														
2es	.529**	0.773													
3cs	.521**	.558**	0.817												
4ic	.462**	.421**	.392**	0.751											
5ot	.476**	.404**	.416**	.487**	0.769										
6op	.380**	.395**	.333**	.471**	.514**	0.785									
7co	.402**	.399**	.407**	.340**	.280**	.231**	0.767								
8ch	.402**	.392**	.380**	.298**	.305**	.233**	.475**	0.716							
9in	.345**	.325**	.296**	.264**	.222**	.174**	.484**	.514**	0.736						
10re	.380**	.375**	.336**	.306**	.264**	.212**	.487**	.503**	.590**	0.756					
11lm	.384**	.274**	.337**	.399**	.389**	.293**	.344**	.316**	.284**	.312**	0.767				
12tm	.427**	.355**	.424**	.453**	.443**	.355**	.362**	.378**	.319**	.355**	.557**	0.766			
13le	.365**	.262**	.286**	.370**	.323**	.311**	.281**	.253**	.230**	.240**	.450**	.496**	0.745		
14la	.429**	.347**	.373**	.441**	.377**	.312**	.349**	.338**	.326**	.341**	.449**	.495**	.574**	0.792	
15en	.404**	.279**	.325**	.385**	.329**	.279**	.280**	.341**	.293**	.272**	.397**	.449**	.511**	.506**	0.775

Note 1: The average of the variables is the total average of all the items in the dimensions in this scale.

2: The value of the diagonal is the square of the AVE of a latent variable, which should be greater than the value of the non-diagonal

3: *p<0.05, **p<0.01, ***p< 0.001

To sum up contents described in this chapter, research structure of this study is constructed in accordance with the theory of this study, research purpose, research motive and research questions in chapter one and summary of literatures regarding the relationship between teachers' support, LA, hardiness and LOC for students in free six-year normal universities from junior high schools in chapter two; furthermore, item analysis and reliability analysis are carried out for Teachers' Support Scale, LA Scale, Hardiness Scale and LOC Scale using SPSS software, exploratory factor analysis (EFA) is adopted to carry out validity test to verify the reliability and validity of questionnaires, thus, construct a formal questionnaire for this study. Test found that question ls8 and ls9 are deleted from Teachers Support Scale and 17 questions are retained; ot9 are deleted from LOC Scale and 23 questions are retained; all questions of the other two scales are retained. After deleting questions, the pre-test questionnaire is of good reliability and validity, thus, the formal questionnaire is formulated. Validity test is carried out for the collected formal questionnaires with AMOS software in the manner of confirmatory factor analysis (CFA), then discriminant validity test and Cronbach's αreliability test are carried out with SPSS. Tests show that the formal questionnaire of this study has good reliability and validity.

CHAPTER 4
RESEARCH FINDINGS

This chapter is divided into eight parts, including reliability and validity test of formal questionnaire, common method deviation test, descriptive analysis, differential analysis, correlation analysis and regression analysis, research question answers and verification results of hypotheses. As for descriptive analysis, frequency is mainly adopted to show the demographic background variables and the situation of each variable; the purpose of differential analysis is to test the differences of different background variables in the aspect of TS, LA, LOC and hardiness; the purpose of correlation analysis is to understand the relevant information of TS, LA, LOC and hardiness; the purpose of regression analysis is to understand the influence on TS, LA, LOC and hardiness; what's more, the function of LOC as a mediator for TS and LA, and the function of hardiness as a moderator for TS and LA are tested. In the end, research question of this studied are answered, and the verification results are demonstrated. The specific descriptions are as follows:

4.1 Reliability and Validity Test of Formal Questionnaire

Demographic variables of the subjects are showed in the form of frequency and percentage, and the overall situation of TS, LA, LOC and hardiness are learnt through mean value and standard deviation.

4.1.1 Descriptive Analysis of Background Variables of Students in Free Six-year Normal Universities from Junior High Schools

In this study, normality test is conducted for all the data of 1138 formal samples. Test results show that absolute value of skew coefficient is less than standard value - 3 (Kline, 1998); the absolute value of the coefficient of kurtosis is less than the standard value - 10 (Huang, 2002), showing the sample data complies with normal distribution. Whether sex, grade, origin of student and subject are the five background variables for only children is investigated, and the results show that: in terms of sex, there are 335 males accounting for 29.4% of the sample size and 803 females accounting 70.6% of the sample size; in terms of grade, there are 263 freshmen accounting for 23.1% of the sample size, 299 sophomores accounting for 26.3%% of the sample size, 231 juniors accounting for 20.3% of the sample size, 200 seniors accounting for 17.6% of the sample size, 93 normal students of the fifth year accounting for 8.2% of the sample size and 52 normal students of the sixth year accounting for 4.6% of the sample size; in terms of origin of student, there are 504 students from rural areas accounting for 44.3% of the sample size and 643 students from urban areas accounting for 55.7% of the sample size; in terms of school location, there 456 students in universities in provincial capitals accounting for 40.1% of the sample size, and 682 students in local universities accounting for 60% of the sample size; in terms of being the only child or not, 778 students are the only children accounting for 68.4% of the sample size, and 360 students are non-only children accounting for 31.6% of the sample size. The above data show that in this sample, there are 486 boys less than girls, the number of freshman, sophomore, junior and senior students is balanced with a large proportion, while the proportion of normal students of the fifth and sixth year is smaller. Most of the students are from urban areas and most of are non-only children. As shown in Table 4.1:

Table 4.1 Statistical Table of Formal sample Demographic Variables

Background variables	Variable name	Number of students	Percentage (%)
Sex	Male	335	29.4
	Female	803	70.6
Grade	Grade one	263	23.1
	Grade two	299	26.3
	Grade three	231	20.3
	Grade four	200	17.6
	Normal students of the fifth year	93	8.2
	Normal students of the sixth year	52	4.6
Location	Rural areas	504	44.3
	Urban areas	634	55.7
Only child or not	No	360	31.6
	Yes	778	68.4
School	Provincial capital A	456	40.1
	Local university B	341	30
	Local university C	341	30

4.1.2 Descriptive Analysis of the Variable - Teacher Support

Analysis shows that TS has three dimensions and 17 questions. The TS (M＝3.539, SD＝0.821) of tested students in free six-year normal universities from junior high schools indicates that TS level of tested students in free six-year normal universities from junior high schools is above average. As shown in Table 4.2:

Table 4.2 Descriptive Statistical Table of the Variable - Teacher Support (n＝1138)

Dimension & Overall	Numbers of questions	M	SD
Emotional support	6	3.633	0.960
Capacity support	4	3.540	0.923
Learning support	7	3.443	1.078
Overal lteacher support	17	3.539	0.821

4.1.3 Description of Variable-Learning Adaptation

Analysis shows that there are five dimensions of LA: 1. learning motivation (eight questions), 1. teaching mode (seven questions), 3. learning ability (six questions), 4. learning attitude (four questions) and 5. environmental factors (four questions). The LA (M＝3.666, SD＝0.72) of tested students in free six-year normal universities from junior high schools indicates that LA level of tested students in free six-year normal universities from junior high schools is above average. It's dimensions are in order as follows: learning motivation (M＝3.578, SD＝0.895), teaching mode(M＝3.572, SD＝0.982), learning ability (M＝3.756, SD＝0.81), learning attitude (M＝3.713, SD＝0.982), and environmental factors (M＝0.712, SD ＝1.016). As shown in Table 4.3:

Table 4.3 Descriptive Statistical Table of the Variable - Learning Adaptation (n＝1138)

Dimension & Overall	Numbers of questions	M	SD
Learning motivation	8	3.578	0.895
Teaching model	7	3.572	0.982
Learning ability	6	3.756	0.810
Learning attitude	4	3.713	0.982
Environmental factors	4	3.712	1.016
Overall learning adaptation	29	3.666	0.720

4.1.4 Description of Variable- Locus of Control

Analysis shows that there are three dimensions of LOC: A. internal focus of control (seven questions), B. other influential person (eight questions), C. opportunities (eight questions), and 23 questions in total. The LOC (M=3.923, SD=0.724) of tested students in free six-year normal universities from junior high schools indicates that LOC level of tested students in free six-year normal universities from junior high schools is above average. It's dimensions are in order as follows: internal focus of control (M=3.846, SD=0.902), other influential person (M＝3.831, SD＝0.859), and opportunities (M=4.093, SD=0.911). As shown in Table 4.4:

Table 4.4 Descriptive Statistical Table of the Variable-Loc (n＝1138)

Dimension & Overall	Numbers of questions	M	SD
Internal focus of control	7	3.846	0.902
Other influential person	8	3.831	0.859
Opportunities	8	4.093	0.911
Overall locus of control	23	3.923	0.724

4.1.5 Descriptive Analysis of the Variable Hardiness

Analysis shows that there are four dimensions of hardiness: A. control (eight questions), B. challenges (seven questions), C. investment (six questions), D. resilience, 27 questions in total. The hardiness (M＝3.632, SD＝0.715) of tested students in free six-year normal universities from junior high schools indicates that hardiness level of tested students in free six-year normal universities from junior high schools is in a medium level. It's dimensions are in order as follows: control (M＝3.554, SD＝0.911), challenges (M＝3.592, SD＝0.939), investment (M＝3.718, SD＝0.815) and resilience (M＝3.665, SD＝0.937). As shown in Table 4.5:

Table 4.5 Descriptive Statistical Table of the Variable Hardiness (n＝1138)

Dimension & Overall	Numbers of questions	M	SD
Control	8	3.554	0.911
Challenges	7	3.592	0.939
Investment	6	3.718	0.815
Resilience	6	3.665	0.937
Overall hardiness	27	3.632	0.715

4.1.6 Testing Program and Validity and Reliability Test of Formal Questionnaires

In this study, formal questionnaires will be sent to surveyors after the trial test questionnaire is completed and revised for three weeks. To keep preciseness of this study and ensure consistency and reliability of formal questionnaire, the reliability and validity verification for thr formal questionnaire collected is conducted by the researcher with SPSS and AMOS.

A. Testing program of formal questionnaire

In this study, formal questionnaires will be sent after preliminary test questionnaire is completed for three weeks and then 1147 students from three universities are sampled to act as interviewees of formal questionnaire after classes having participated in preset questionnaire are eliminated. The 40 minutes of evening study time is used for testing, and the other testing procedures are consistent with the that of the preset questionnaire. Questionnaires are sent to 1147 students. After all the questionnaires are completed, 9 invalid questionnaires are excluded and 1138 valid questionnaires are collected with recovery rate of 99.2%. To inspect whether the sample conforms to the normal distribution, all data is subject to normality test in this study. The testing result shows the absolute value of the coefficient of skew (Skew) is less than the standard-3 (Kline, 1998); the absolute value of the coefficient of kurtosis is less than the standard value - 10 (Huang, 2002), indicating the sample data complies with normal distribution. In addition, in order to verify consistency and reliability of formal questionnaire, the SPSS software is used for internal consistency analysis of questionnaires after formal questionnaires are collected; the AMOS software is used for validity test by confirmatory factor analysis (CFA) so as to verify reliability and validity of formal questionnaire.

Table 4.6 Normal Distribution of Official Data

	Skewness	Kurtosis
Teacher support	-0.64	-0.044
Locus of control	-0.828	0.328
Hardiness	-1.018	0.937
Learning adaptation	-1.203	1.824

B. Testing of validity and reliability for the teacher support formal questionnaire

Ⅰ.Validity test

As for TS formal questionnaires, AMOS and maximum likelihood method are used for confirmatory factor analysis (called as CFA for short) of the test model in this study. Upon test, the TS scale model fitness indexes of this study are as shown in the following table: In addition, absolute fitness test index, incremental fitness test indexes and simplified fitness test index are used for verification. As per the suggestions from Bagozzi and Yi (1988), a better result will arise when $\chi 2$ decreases and the chi-square value verification p is $p > .05$, representing the theoretical model fits the sample model, but the significance easily arises often because the sample is too big, so it's necessary to consider the test convergence validity of other indexes.

Among all fitness indexes of this study: χ2 /df is 2.416, conforming to the standard - being less than 5; RMR is 0.035, conforming to the standard - being less than 0.08; RMSEA is 0.035, complying to the standard - equaling to 0.1 and AGFI is 0.962, complying to the standard - being greater than 0.8; NFI is 0.976, TLI is 0.984, CFI is 0.986, RFI is 0.972 and IFI is 0.986, conforming to the good fitness standard - being greater than 0.9; PNFI is 0.833, complying to the standard - being greater than 0.5 and PCFI is 0.841, also conforming to the standard - being greater than 0.5. Thus, all fitness indexes are up to standard (Bentler & Chou, 1987; Hair, Anderson, Tatham, & Black, 1998; Lomax & Schumacker, 2004). As a result, it means the TS test model of this study reaches the fitness standard.

Table 4.7 Fitness Index Checklist of Teacher Support Test Model

Scale	Index	Criteria of fitness index	Data of test results	Model fitness
Absolute fitness index	χ2	The smaller, the better	280.240	-
	χ2/df	<5.000	2.416	Fit
	RMR	≦.080	0.035	Fit
	AGFI	≧.800	.962	Fit
	RMSEA	≦.100	.035	Fit
Incremental fitness index	NFI	≧.900	. 976	Fit
	TLI	≧.900	. 984	Fit
	CFI	≧.900	. 986	Fit
	RFI	≧.900	. 972	Fit
	IFI	≧.900	. 986	Fit
Simplified fitness index	PNFI	≧.500	. 833	Fit
	PCFI	≧.500	. 841	Fit

In addition, with regard to testing the convergent validity of this scale, Moreover, the result in the following table shows the standard factor loading value of questions of TS is 0.732~0.872, reaching to the standard - being greater than 0.5 and the significant standard (Hair et. al., 1998) when the convergent validity of the scale is inspected; The composite reliability (Dimension Reliability, CR) of the scale of learning support, emotional support and ability support is 0.912, 0.899 and 0.889, respectively as well as the average variance extracted (AVE) of them is 0.596, 0.597 and 0.668, respectively, reaching to the standard of CR >0.7 and AVE >0.5 which shows the scale is with good convergent validity (Bagozzi & Yi, 1988).

Table 4.8 Confirmatory Analysis and Reliability Analysis of the Teacher Support Test Model

Dimension	Question number	Factor loading value	t(C.R.)	CR	AVE	Cronbach's α
Learning support	ls1	0.802		0.912	0.596	0.911
	ls2	0.772	28.575			
	ls3	0.751	27.607			
	ls4	0.807	30.326			
	ls5	0.746	27.348			
	ls6	0.78	29.006			
	ls7	0.745	27.309			
Emotional support	es1	0.825		0.899	0.597	0.898
	es2	0.732	27.282			
	es3	0.749	28.117			
	es4	0.761	28.728			
	es5	0.816	31.648			
	es6	0.748	28.05			
Capacity support	cs1	0.804		0.889	0.668	0.889
	cs2	0.774	28.286			
	cs3	0.872	32.756			
	cs4	0.816	30.273			

Note: 1. All above factors reach to significant*** p<0.001.

2.The CR refers to composite reliability; The AVE refers to average variance extracted.

3. es=emotion support, cs=capacity support, ls=learning support, lm=learning motivation,tm=teachingmode, le=learning ability, la=learning attitude, en=Environmental, ic=Internal focus of control, ot= Other influential person, op=Opportunities, co=Control, ch=Challenges, in=Involvement, re=Resilience.

II. Reliability test

In this study, the Cronbach's α value is used to inspect whether the internal consistency happens to the reliability coefficient of formal questionnaires supported by learning support, emotional support and ability support. As shown in the above table, Cronbach's α coefficient in the scale of learning support, emotional support and ability support is 0.911, 0.898 and 0.889 respectively, with the result showing the scale was with very good internal consistency (Nunnally, 1978).

C. Validity and reliability test of hardiness formal questionnaires

Ⅰ.Validity test

As for hardiness formal questionnaires, AMOS and maximum likelihood method are used for confirmatory factor analysis (called as CFA for short) of the test model in this study. Upon test, the hardiness scale model fitness indexes of this study are as shown in the following table: In addition, absolute fitness test index, incremental fitness test indexes and simplified fitness test index are used for verification. As per the suggestions from Bagozzi and Yi (1988), a better result will arise when 2 decreases and the chi-square value verification p is p＞.05, representing the theoretical model fits the sample model, but the significance easily arises often because the sample is too big, so it's necessary to consider the test convergence validity of other indexes. χAmong all fitness indexes of this study: χ2 /df is 2.707, conforming to the standard - being less than 5; RMR is 0.039, conforming to the standard - being less than 0.08; RMSEA is 0.039, complying to the standard - equaling to 0.1 and AGFI is

0.938, complying to the standard - being greater than 0.8; NFI is 0.95, TLI is 0.964, CFI is 0.968, RFI is 0.945 and IFI is 0.968, conforming to the good fitness standard - being greater than 0.9; PNFI is 0.86, complying to the standard - being greater than 0.5 and PCFI is 0.877, also conforming to the standard - being greater than 0.5. Thus, all fitness indexes are up to standard (Bentler & Chou, 1987; Hair, Anderson, Tatham, & Black, 1998; Lomax & Schumacker, 2004). As a result, it means the TStest model of this study reaches the fitness standard.

Table 4.9 Fitness Index Checklist of Hardiness Test Model

Scale	Index	Criteria of fitness index	Data of test results	Model fitness
Absolute fitness index	$\chi 2$	The smaller, the better	860.912	-
	$\chi 2$/df	<5.000	2.707	Fit
	RMR	≦.080	0.039	Fit
	AGFI	≧.800	.938	Fit
	RMSEA	≦.100	.039	Fit
Incremental fitness index	NFI	≧.900	. 950	Fit
	TLI	≧.900	. 964	Fit
	CFI	≧.900	. 968	Fit
	RFI	≧.900	. 945	Fit
	IFI	≧.900	. 968	Fit
Simplified fitness index	PNFI	≧.500	. 860	Fit
	PCFI	≧.500	. 877	Fit

In addition, with regard to testing the convergent validity of this scale, the result in the following table shows the standard factor loading value of hardiness questions is 0.628~0.845, reaching to the standard - being greater than 0.5 and the significant standard (Hair *et. al.*, 1998) when the convergent validity of the scale is inspected; The composite reliability (Dimension Reliability, CR) of the scale of control, challenges, investment and resilience is 0.919, 0.879, 0.876 and 0.888, respectively as well as the average variance extracted (AVE) of them is 0.588, 0.512, 0.541 and 0.571, respectively, reaching to the standard of CR >0.7 and AVE >0.5 which shows the scale is with good convergent validity (Bagozzi & Yi, 1988).

Table 4.10 Confirmatory Analysis and Reliability Analysis of the Hardiness Test Model

Dimension	Question number	Factor loading value	t(C.R.)	CR	AVE	Cronbach's α
Control	co1	0.813	-	0.919	0.588	0.919
	co2	0.781	29.725			
	co3	0.732	27.264			
	co4	0.787	30.078			
	co5	0.739	27.618			
	co6	0.761	28.704			
	co7	0.748	28.063			
	co8	0.769	29.144			
Challenges	ch1	0.679	-	0.879	0.512	0.876
	ch2	0.672	20.408			
	ch3	0.628	19.185			
	ch4	0.757	22.662			
	ch5	0.819	24.198			
	ch6	0.709	21.391			
	ch7	0.727	21.883			
Investment	in1	0.807	-	0.876	0.541	0.874
	in2	0.756	27.21			
	in3	0.705	24.975			
	in4	0.667	23.347			
	in5	0.72	25.605			
	in6	0.749	26.916			
Resilience	re1	0.845	-	0.888	0.571	0.886
	re2	0.768	29.711			
	re3	0.739	28.161			
	re4	0.704	26.353			
	re5	0.756	29.05			
	re6	0.712	26.715			

Note: 1. All above factors reach to significant p<0.001***.

2.The CR refers to composite reliability;The AVE refers to average variance extracted.

3. es=emotion support, cs=capacity support, ls=learning support, lm=learning motivation, tm=teachingmode, le=learning ability, la=learning attitude, en=Environmental, ic=Internal focus of control, ot= Other influential person, op=Opportunities, co=Control, ch=Challenges, in=Involvement, re=Resilience.

4.“-”There is no significant difference between the representatives.

II. Reliability test

In this study, the Cronbach's α value is used to inspect whether the internal consistency happens to the reliability coefficient of formal questionnaires supported by control, challenges, investment and resilience. As shown in the above table, Cronbach's α coefficient in the scale of control, challenges, investment and resilience is 0.919, 0.876, 0.874 and 0.886 respectively, with the result showing the scale was with very good internal consistency (Nunnally, 1978).

D. Validity and reliability test of learning adaptation formal questionnaires

Ⅰ. Validity test

As for LA formal questionnaires, AMOS and maximum likelihood method are used for confirmatory factor analysis (called as CFA for short) of the test model in this study. Upon test, the LA scale model fitness indexes of this study are as shown in the following table: In addition, absolute fitness test index, incremental fitness test indexes and simplified fitness test index are used for verification. As per the suggestions from Bagozzi and Yi (1988), a better result will arise when 2 decreases and the chi-square value verification p is p＞.05, representing the theoretical model fits the sample model, but the significance easily arises often because the sample is too big, so it's necessary to consider the test convergence validity of other indexes. χ^2 Among all fitness indexes of this study: χ^2/df is 2.599, conforming to the standard - being less than 5; RMR is 0.039, conforming to the standard - being less than 0.08; RMSEA is 0.038, complying to the standard - equaling to 0.1 and AGFI is 0.936, complying to the standard - being greater than 0.8; NFI is 0.952, TLI is 0.966, CFI is 0.97, RFI is 0.947 and IFI is 0.97, conforming to the good fitness standard - being greater than 0.9; PNFI is 0.86, complying to the standard - being greater than 0.5 and PCFI is 0.877, also conforming to the standard - being greater than 0.5. Thus, all fitness indexes are up to standard (Bentler & Chou, 1987; Hair, Anderson, Tatham, & Black, 1998; Lomax & Schumacker, 2004). As a result, it means the LA test model of this study reaches the fitness standard.

Table 4.11 Fitness Index Checklist of Learning Adaptation Test Model

Scale	Index	Criteria of fitness index	Data of test results	Model fitness
Absolute fitness index	χ2	The smaller, the better	953.973	-
	χ2/df	<5.000	2.599	Fit
	RMR	≦.080	0.039	Fit
	AGFI	≧.800	.936	Fit
	RMSEA	≦.100	.038	Fit
Incremental fitness index	NFI	≧.900	. 952	Fit
	TLI	≧.900	. 966	Fit
	CFI	≧.900	. 970	Fit
	RFI	≧.900	. 947	Fit
	IFI	≧.900	. 970	Fit
Simplified fitness index	PNFI	≧.500	. 860	Fit
	PCFI	≧.500	. 877	Fit

In addition, with regard to testing the convergent validity of this scale, The result in the following table shows the standard factor loading value of questions of LA is 0.639~0.85, reaching to the standard - being greater than 0.5 and the significant standard (Hair *et. al.*, 1998) when the convergent validity of the scale is inspected; The composite reliability (Dimension Reliability, CR) of the scale for learning motivation, teaching model, learning ability, learning attitude and environmental factor is 0.919, 0.908, 0.882, 0.871 and 0.857, respectively as well as the average variance extracted (AVE) of them is 0.588, 0.586, 0.555, 0.628 and 0.6, respectively, reaching to the standard of CR value >0.7 and AVE value >0.5 which

shows the scale is with good convergent validity (Bagozzi & Yi, 1988).

Table 4.12 Confirmatory Analysis and Reliability Analysis of the Learning Adaptation Test Model

Dimension	Question number	Factor loading value	t(C.R.)	CR	AVE	Cronbach's α
Learning motivation	lm1	0.813		0.919	0.588	0.919
	lm2	0.777	29.552			
	lm3	0.747	28.014			
	lm4	0.76	28.69			
	lm5	0.747	28.039			
	lm6	0.76	28.693			
	lm7	0.763	28.849			
	lm8	0.765	28.929			
Teaching model	tm1	0.761		0.908	0.586	0.902
	tm2	0.736	25.536			
	tm3	0.85	30.158			
	tm4	0.829	29.275			
	tm5	0.757	26.356			
	tm6	0.766	26.72			
	tm7	0.639	21.763			
Learning ability	le1	0.819		0.882	0.555	0.88
	le2	0.779	28.973			
	le3	0.716	25.976			
	le4	0.667	23.769			
	le5	0.745	27.366			
	le6	0.733	26.761			
Learning attitude	la1	0.838		0.871	0.628	0.868
	la2	0.809	30.695			
	la3	0.763	28.441			
	la4	0.758	28.185			
Environmental	en1	0.757		0.857	0.6	0.857
	en2	0.771	25.203			
	en3	0.774	25.31			
	en4	0.797	26.053			

Note: 1. All above factors reach to significant ***p<0.001.

2. The CR refers to composite reliability; The AVE refers to average variance extracted.

3. es=emotion support, cs=capacity support, ls=learning support, lm=learning motivation, tm=teachingmode, le=learning ability, la=learning attitude, en=Environmental, ic=Internal focus of control, ot= Other influential person, op=Opportunities, co=Control, ch=Challenges, in=Involvement, re=Resilience.

II. Reliability test

In this study, the Cronbach's α value is used to inspect whether the internal consistency happens to the reliability coefficient of formal questionnaires for learning motivation, teaching model, learning ability, learning attitude and environmental factors. As shown in the above table, Cronbach's α coefficient of the scale of learning motivation, model of teaching, learning ability, learning attitude and environmental factors is 0.919, 0.902, 0.88, 0.868 and 0.857 respectively, with the result showing the scale is with very good internal consistency (Nunnally, 1978).

E. Testing of validity and reliability for locus of control formal questionnaires

Ⅰ.Validity test

As for LOC formal questionnaires, AMOS and maximum likelihood method are used for confirmatory factor analysis (called as CFA for short) of the test model in this study. Upon test, the LOC scale model fitness indexes of this study are as shown in the following table: In addition, absolute fitness test index, incremental fitness test indexes and simplified fitness test index are used for verification. As per the suggestions from Bagozzi and Yi (1988), a better result will arise when 2 decreases and the chi-square value verification p is p＞0.05, representing the theoretical model fits the sample model, but the significance easily arises often because the sample is too big, so it's necessary to consider the test convergence validity of other indexes. χ2 Among all fitness indexes of this study: χ2 /df is 4.692, conforming to the standard - being less than 5; RMR is 0.048, conforming to the standard - being less than 0.08; RMSEA is 0.057, complying to the standard - equaling to 0.1 and AGFI is 0.909, complying to the standard - being greater than 0.8; NFI is 0.938, TLI is 0.945, CFI is 0.95, RFI is 0.931 and IFI is 0.95, conforming to the good fitness standard - being greater than 0.9; PNFI is 0.842, complying to the standard - being greater than 0.5 and PCFI is 0.853, also conforming to the standard - being greater than 0.5. Thus, all fitness indexes are up to standard (Bentler & Chou, 1987; Hair, Anderson, Tatham, & Black, 1998; Lomax & Schumacker, 2004). As a result, it means the LOC test model of this study reaches the fitness standard.

Table 4.13 Fitness Index Checklist of Locus of Control Test Model

Scale	Index	Criteria of fitness	Data of test	Model fitness
Absolute fitness index	χ2	Thes maller, The better	1065.012	-
	χ2/df	<5.000	4.692	Fit
	RMR	≦.080	0.048	Fit
	AGFI	≧.800	.909	Fit
	RMSEA	≦.100	.057	Fit
Incremental fitness index	NFI	≧.900	. 938	Fit
	TLI	≧.900	. 945	Fit
	CFI	≧.900	. 950	Fit
	RFI	≧.900	. 931	Fit
	IFI	≧.900	. 950	Fit
Simplified fitness index	PNFI	≧.500	. 842	Fit
	PCFI	≧.500	. 853	Fit

In addition, with regard to testing the convergent validity of this scale, The result in the following table showed the standard factor loading value of LOC questions was 0.618~0.863, reaching to the standard - being greater than 0.5 and the significant standard (Hair *et. al.*, 1998) when the convergent validity of the scale was inspected; The composite reliability

(Dimension Reliability, CR) of the scale of internal focus of control, being influential and opportunities is 0.9, 0.92 and 0.928, respectively as well as the average variance extracted (AVE) of them is 0.564, 0.591 and 0.617, respectively, reaching to the standard of CR value >0.7 and AVE value >0.5 which shows the scale is with good convergent validity (Bagozzi & Yi, 1988).

Table 4.14 Confirmatory Analysis and Reliability Analysis of the LOC Test Model

Dimension	Question number	Factor loading value	t(C.R.)	CR	AVE	Cronbach's α
Internal focus of control	ic1	0.726		0.9	0.564	0.899
	ic2	0.764	25.027			
	ic3	0.856	28.059			
	ic4	0.787	25.81			
	ic5	0.755	24.742			
	ic6	0.73	23.893			
	ic7	0.618	20.159			
Other influential person	ot1	0.742		0.92	0.591	0.919
	ot2	0.802	27.448			
	ot3	0.72	24.422			
	ot4	0.767	26.161			
	ot5	0.689	23.289			
	ot6	0.812	27.826			
	ot7	0.74	25.154			
	ot8	0.863	29.768			
Opportunities	op1	0.813		0.928	0.617	0.926
	op2	0.756	28.756			
	op3	0.781	30.088			
	op4	0.704	26.155			
	op5	0.856	34.337			
	op6	0.706	26.296			
	op7	0.806	31.435			
	op8	0.847	33.796			

Note: 1. All above factors reach to significant ***p<0.001.

2.The CR refers to composite reliability; The AVE refers to average variance extracted.

3. es=emotion support, cs=capacity support, ls=learning support, lm=learning motivation,tm=teachingmode, le=learning ability, la=learning attitude, en=Environmental, ic=Internal focus of control, ot= Other influential person, op=Opportunities, co=Control, ch=Challenges, in=Involvement, re=Resilience.

II. Reliability test

In this study, the Cronbach's α value is used to inspect whether the internal consistency happens to the reliability coefficient of formal questionnaires supported by internal focus of control, being other influential person and opportunities. As shown in the above table, Cronbach's α coefficient in the scale of internal focus of control, being influential and opportunities

is 0.899, 0.919 and 0.926 respectively, with the result showing the scale was with very good internal consistency (Nunnally, 1978).

4.1.7 Discriminant Validity of Formal Questionnaire

In this study, the rigorous AVE method was used to evaluate the discriminant validity (Fornell & Larcker, 1981). AVE sqrt of each factor shall be greater than the correlation coefficient of each pair of variables, showing the discriminant validity exists between factors. The AVE sqrt of each factor shall exceed the normalized correlation coefficient outside the diagonal line, thus this study is still with discriminant validity and the oblique triangle is the correlation coefficient. See the table below for details

Table 4.15 Discriminant Validity of Formal Questionnaire

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.ls	**0.772**														
2.es	.529**	**0.773**													
3.cs	.521**	.558**	**0.817**												
4.in	.462**	.421**	.392**	**0.751**											
5.ot	.476**	.404**	.416**	.487**	**0.769**										
6.op	.380**	.395**	.333**	.471**	.514**	**0.785**									
7.co	.402**	.399**	.407**	.340**	.280**	.231**	**0.767**								
8.ch	.402**	.392**	.380**	.298**	.305**	.233**	.475**	**0.716**							
9.ic	.345**	.325**	.296**	.264**	.222**	.174**	.484**	.514**	**0.736**						
10.re	.380**	.375**	.336**	.306**	.264**	.212**	.487**	.503**	.590**	**0.756**					
11.lm	.384**	.274**	.337**	.399**	.389**	.293**	.344**	.316**	.284**	.312**	**0.767**				
12.tm	.427**	.355**	.424**	.453**	.443**	.355**	.362**	.378**	.319**	.355**	.557**	**0.766**			
13.le	.365**	.262**	.286**	.370**	.323**	.311**	.281**	.253**	.230**	.240**	.450**	.496**	**0.745**		
14.la	.429**	.347**	.373**	.441**	.377**	.312**	.349**	.338**	.326**	.341**	.449**	.495**	.574**	**0.792**	
15.en	.404**	.279**	.325**	.385**	.329**	.279**	.280**	.341**	.293**	.272**	.397**	.449**	.511**	.506**	**0.775**

Note: 1. *p＜0.05, **p＜0.01, ***p＜0.001.

2. es=emotion support, cs=capacity support, ls=learning support, lm=learning motivation, tm=teachingmode, le=learning ability, la=learning attitude, en=Environmental, ic=Internal focus of control, ot= Other influential person, op=Opportunities, co=Control, ch=Challenges, in=Involvement, re=Resilience.

4.2 Deviation Test of Common Method

In this study, self-report method is used to collect data, thus common method biases may exist. Therefore, the author draws lessons from previous scholars and adopts prior program control and post statistical test to avoid common method biases. In the first place, strict program control is implemented in the surveying process, emphasizing the results of the questionnaire is only used for academic research, the information shall be held in strict confidence and the questionnaire is filled out anonymously. In terms of post statistical test, Harman's single-factor test is used to put all measuring variables in one exploring item for analysis; After test, 15 main components are extracted before factor rotation, explained difference value of first factor is 27.098%, conforming to the critical standard - being less than 40% (Podsakoff, MacKenzie & Lee, 2003), therefore, this study does not have serious common method biases.

4.3 Differential Analysis

The purpose of differential analysis is to judge whether these factors can explain the changes in data using hypothesis test method. Independent-samples t test is used to test the differences of sex, school, and origin of student, being only child or not in the aspect of TS, LA, LOC and hardiness. In this study, d value of Size of Effect is used to represent statistical magnitude of interpretation intensity of independent variable against dependent variable. One-factor ANOVA variance is used to analyze the differences of different grades in the aspect of TS, LA, LOC, and hardiness, in case of reaching to significant level, choose different test method according to the tested significant situation of homogeneity of variance to carry out further post-hoc test. In this study, η2 value of Size of Effect is used to represent statistical magnitude of interpretation intensity of independent variable against dependent variable. According to the standard of Cohen (1988), 0.059>η2≧0.010 represents a small effect size, 0.138>η2≧0.059 represents a medium effect size, and η2≧0.138 represents a large effect size;

4.3.1 Comparison of Variables' Differences of Students in Free Six-year Normal Universities from Junior High Schools of Different Sex

T- test of independent sample is used to analyze the differences in TS, LA, LOC, and hardiness among the students in free six-year normal universities from junior high schools who are of different sex, and the results are shown in Table 4.15.

In the aspect of TS, significant difference is found in the perception of students in free six-year normal universities from junior high schools who are of different sex (t=-2.739), in addition, the TS of male (M=3.436) is significantly lower than that of female (M=3.582); What's more, there is significant difference in the two dimensions of TS: A. emotional support and B.learning support. t=-0.321 and t=-2.56 respectively, reaching to the significant level - being greater than 0.05 ; and no significant difference is found in ability support.

In the aspect of LA, significant difference is found in the LA of students in free six-year normal universities from junior high schools who are of different sex. It's t=-3.935, p<0.001, reaching to the significant level - 0.001, in addition, the LA level of male (M =3.537) is significantly lower than that of female (M =3.72); what's more, there is significant difference in the five dimensions of LA: A.learning motivation, B. teaching mode, C. learning ability, D. learning attitude and E. environmental factors. t= -4.08,t= -2.845,t= -3.371, t=-2.644 and t=-2.123 respectively, reaching to the significant level - being greater than 0.05 .

In the aspect of LOC, significant difference is found in the LOC of students in free six-year normal universities from junior high schools who are of different sex. It's t=-2.583, p<0.01, reaching to the significant level, Significant difference is found in the dimension of internal control. t=-0.396, p＜0.05, reaching to the significant level. In the dimension of other influential person, t=- 2.397, reaching to the significant level, and size of effect is 0.134, representing small size of effect; and there is no significant difference in opportunities.

There are significant differences in the aspect of hardiness, it's t=-1.867, p>0.05, representing no significant difference; Significant differences are found in the dimensions of control and investment. t= -2.116 and t=-1.989 respectively, and p value is 0.035 and 0.047(p＜0.05) respectively, reaching to the significant level. And there is no significant difference in the dimensions of challenges and resilience.

To sum up, for the students in free six-year normal universities from junior high schools, of all the dimensions of the four variables (TS, LA, LOC, and hardiness), ability support, opportunities, challenges and resilience are not subjected to sex difference, all others vary significantly due to sex difference. See details in Table 4.16:

Table 4.16 Analysis Table of T Test of Each Variable for Students in Free Six-year Normal Universities from Junior High Schools of Different Sex

Dimension & Overall	Mean value (standard deviation)		t	p
	Male (n=335)	Female (n=803)		
Overall TS	3.436(0.864)	3.582(0.799)	-2.739	0.006
es	3.527(1.022)	3.678(0.93)	-2.321	0.021
cs	3.352(1.094)	3.481(1.07)	-1.849	0.065
ls	3.429(0.965)	3.586(0.901)	-2.56	0.011
Overall LA	3.537(0.779)	3.72(0.688)	-3.935	0.000
lm	3.412(0.912)	3.648(0.879)	-4.08	0.000
tm	3.444(0.976)	3.625(0.981)	-2.845	0.005
le	3.622(0.908)	3.812(0.758)	-3.371	0.001
la	3.594(1.033)	3.763(0.956)	-2.644	0.008
en	3.613(1.066)	3.753(0.992)	-2.123	0.034
Overall LOC	3.837(0.71)	3.959(0.727)	-2.583	0.01
ic	3.747(0.931)	3.887(0.887)	-2.396	0.017
ot	3.736(0.861)	3.87(0.856)	-2.397	0.017
op	4.029(0.885)	4.119(0.921)	-1.519	0.129
Overall hardiness	3.571(0.741)	3.658(0.703)	-1.867	0.062
co	3.466(0.94)	3.591(0.897)	-2.116	0.035
ch	3.555(0.959)	3.607(0.931)	-0.848	0.397
in	3.644(0.847)	3.749(0.8)	-1.989	0.047
re	3.619(0.95)	3.684(0.931)	-1.064	0.288

Note: 1. *p＜0.05, **p＜0.01, ***p＜0.001.

2. L A = Learning Adaptation, T S = Teacher Support, LOC = Locus of Control.

3. es=emotion support, cs=capacity support, ls=learning support, lm=learning motivation, tm=teachingmode, le=learning ability, la=learning attitude, en=Environmental, ic=Internal focus of control, ot= Other influential person, op=Opportunities, co=Control, ch=Challenges, in=Involvement, re=Resilience.

4.3.2 Comparison of Variables' Differences of Students in Free Six-year Normal Universities from Junior High Schools of Different Grade

One-factor ANOVA variance test is used to analyze the differences in TS, LA, LOC, and hardiness among the students in free six-year normal universities from junior high schools who are of different grade, and the results are shown in Table 4.17:

There is no significant difference in TS of students in free six-year normal universities from junior high schools of different grade, and it's F=1.506, p<0.185, failing to reach the significant level.

There is a significant difference in LA of the students in free six-year normal universities from junior high schools who are of different grade: F= 2.564, reaching to the significant level - 0.026. After significant difference is found in the ANOVA analysis of LA and its dimensions, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the

values of grade four, grade five and grade six are significantly larger than that of grade one; and the values of grade four and grade six are significantly larger than that of grade two; There is a significant difference in learning ability of the students in free six-year normal universities from junior high schools who are of different grade: F= 2.266, reaching to the significant level - 0.046. After significant difference is found in the ANOVA analysis of LA and its dimensions, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the values of grade five and grade six are significantly larger than that of grade one; and the values of grade six is significantly larger than that of grade two and grade three; There is a significant difference in environmental factors of the students in free six-year normal universities from junior high schools who are of different grade: F= 3.19, reaching to the significant level - 0.007. After significant difference is found in the ANOVA analysis of environmental factors and its dimensions, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the values of grade four and grade five are significantly larger than that of grade one; and the values of grade four is significantly larger than that of grade two and grade three; while no significant difference is found in the aspects of learning motivation, teaching mode and learning attitude.

In the aspect of LOC, there is no significant difference in LOC and its three secondary dimensions of students in free six-year normal universities from junior high schools of different grade, and it's F= 0.492.

In the aspect of hardiness, there is no significant difference in hardiness of students in free six-year normal universities from junior high schools of different grade, and it's F= 0.201. The results are shown in Table 4.17:

Table 4.17 Analysis Table of ANOVA of Each Variable for Students in Free Six-year Normal Universities from Junior High Schools of Different Grade

Dimension & Overall	Mean value (standard deviation)						F value
	Grade One (n=263)	Grade Two (n=299)	Grade Three (n=231)	Grade Four (n=200)	Grade Five (n=93)	Grade Six (n=52)	
Overall TS	3.458(0.82)						
	3.596(0.799)		3.538(0.826)	3.631(0.847)	3.476(0.808)	3.478(0.819)	1.506
es	3.556(0.983)						
	3.713(0.95)		3.634(0.949)	3.685(0.979)	3.575(0.897)	3.58(0.959)	0.963
cs	3.357(1.063)						
	3.489(1.055)		3.443(1.110)	3.563(1.115)	3.379(1.012)	3.361(1.102)	1.092
ls	3.46(0.929)						
	3.586(0.889)		3.537(0.938)	3.644(0.93)	3.475(0.932)	3.492(0.933)	1.214
Overall LA	3.62(0.707)						
	3.592(0.793)		3.648(0.752)	3.755(0.662)	3.774(0.578)	3.85(0.651)	2.564*
lm	3.499(0.897)						
	3.536(0.955)		3.561(0.893)	3.694(0.878)	3.659(0.738)	3.738(0.866)	1.761
tm	3.547(0.943)						
	3.515(0.996)		3.544(1.016)	3.623(0.977)	3.596(0.866)	3.887(1.162)	1.447
le	3.735(0.81)						
	3.667(0.856)		3.728(0.857)	3.814(0.766)	3.894(0.649)	3.978(0.712)	2.266*
la	3.665(0.997)						
	3.647(1.052)		3.746(0.929)	3.728(1.022)	3.85(0.855)	3.875(0.779)	1.082
en	3.654(0.997)						
	3.594(1.113)		3.662(1.032)	3.918(0.932)	3.874(0.88)	3.774(0.969)	3.19**
Overall LOC	3.874(0.723)						
	3.966(0.679)		3.918(0.732)	3.938(0.783)	3.941(0.675)	3.923(0.775)	0.492
ic	3.785(0.894)						
	3.857(0.914)		3.881(0.906)	3.862(0.928)	3.831(0.865)	3.951(0.859)	0.509
ot	3.803(0.872)						
	3.855(0.837)		3.797(0.884)	3.856(0.865)	3.89(0.799)	3.808(0.892)	0.305
op	4.033(0.926)						
	4.186(0.77)		4.075(0.98)	4.095(0.962)	4.104(0.889)	4.01(1.009)	0.908
Overall hardiness	3.64(0.654)						
	3.617(0.767)		3.639(0.721)	3.641(0.735)	3.582(0.739)	3.691(0.664)	0.201
co	3.562(0.855)						
	3.52(0.962)		3.544(0.95)	3.621(0.921)	3.417(0.879)	3.719(0.787)	1.059
ch	3.502(0.934)						
	3.655(0.886)		3.575(0.984)	3.649(0.961)	3.636(0.936)	3.566(0.946)	1.004
in	3.777(0.742)						
	3.65(0.904)		3.722(0.797)	3.728(0.814)	3.609(0.849)	3.859(0.741)	1.33
re	3.721(0.896)						
	3.643(1.001)		3.714(0.899)	3.564(0.972)	3.665(0.869)	3.619(0.976)	0.853

Note: 1. In case of homogeneity of variance, LSD test is used for post-hoc test; In case of inhomogeneity of variance, Dunnett T3 method is used for Post-hoc test.

2. Grades: "1" = Grade one; "2" = Grade two; "3" = Grade three; "4" = Grade four; "5" = Grade five; "6" = Grade six;

3.es=emotion support, cs=capacity support, ls=learning support, lm=learning motivation,tm=teachingmode, le=learning ability, la=learning attitude, en=Environmental, ic=Internal focus of control, ot=Other influential person, op=Opportunities, co=Control, ch=Challenges, in=Involvement, re=Resilience.

4.3.3 Comparison of Variables' Differences of Students in Free Six-year Normal Universities from Junior High Schools Who are Non-only Children

The independent sample t test is used to analyze the differences in TS, LA, LOC, and hardiness among the students in free six-year normal universities from junior high schools who are non-only children and the results are shown in Table 4.19.

In the aspect of TS, significant difference is found in the perception of students in free six-year normal universities form junior high schools who are non-only children (t=-3.702, p<0.001), in addition, the TS of non-only child (M=3.407) is significantly lower than that of only child (M =3.6); what's more, there are significant differences in the three dimensions of TS: A. emotional support, B. ability support and C. learning support. t =-3.102, t= -2.902 , t=-3.244 respectively, reaching to the significant level - being greater than 0.05.

In the aspect of LA, significant difference is found in LA of students in free six-year normal universities form junior

high schools who are non-only children (t=-3.24, p<0.001), in addition, the LA of non-only child (M=3.565) is significantly lower than that of only child (M=3.713); What's more, there are significant differences in the four dimensions of LA: (2) teaching mode, (3) learning ability, (4) learning attitude and (5) environmental factors. t =-2.107, t=-2.83, t=-2.448 , t=-3.302 respectively, reaching to the significant level - being greater than 0.05 . And there is no significant difference in learning motivation.

In the aspect of LOC, no significant difference is found in the LOC of students in free six-year normal universities form junior high schools who are non-only children (t=-1.292, p<0.197).What's more, there is significant difference in the dimension of LOC: (2) internal focus of control. t = -2.552, reaching to the significant level - being greater than 0.05. And there is no significant difference in other influential person and opportunities.

Significant difference is found in the perception of hardiness of the students in free six-year normal universities from junior high schools who are non-only children (t=-3.071, p<0.05), moreover, hardiness of non-only child (M=3.537) is significantly lower than that of only child (M =3.676); what's more, there are significant differences in the three dimensions of LA: A. control, B. challenges and C. investment. t= -2.989, t= -2.803 , t=- 3.115 respectively, reaching to the significant level - being greater than 0.05 . And there is no significant difference in resilience.

Table 4.18 Analysis Table of T Test of Each Variable for Students in Free Six-year Normal Universities from Junior High Schools Who are Non-only Children

Dimension & Overall	Mean value (standard deviation)		t	p
	No (n=360)	Yes (n=778)		
Overall TS	3.407(0.778)	3.6(0.834)	-3.702	0.000 ***
es	3.504(0.949)	3.693(0.959)	-3.102	0.002**
cs	3.307(1.063)	3.506(1.08)	-2.902	0.004**
ls	3.41(0.909)	3.6(0.923)	-3.244	0.001***
Overall LA	3.565(0.702)	3.713(0.724)	-3.24	0.001***
lm	3.512(0.878)	3.609(0.902)	-1.709	0.088
tm	3.482(0.974)	3.614(0.984)	-2.107	0.035
le	3.657(0.793)	3.802(0.814)	-2.83	0.005**
la	3.608(0.978)	3.761(0.981)	-2.448	0.015**
en	3.566(0.986)	3.779(1.024)	-3.302	0.001***
Overall LOC	3.885(0.64)	3.941(0.759)	-1.292	0.197
ic	3.746(0.916)	3.892(0.893)	-2.552	0.011*
ot	3.854(0.762)	3.82(0.901)	0.671	0.502
op	4.054(0.857)	4.11(0.936)	-0.968	0.333
Overall hardiness	3.537(0.727)	3.676(0.706)	-3.071	0.002**
co	3.436(0.912)	3.609(0.906)	-2.989	0.003**
ch	3.477(0.936)	3.645(0.936)	-2.803	0.005**
in	3.608(0.839)	3.769(0.799)	-3.115	0.002**
re	3.626(0.927)	3.683(0.941)	-0.948	0.343

Notes: 1.*p＜0.05, **p＜0.01, ***p＜0.001.

2. L A = Learning Adaptation, T S = Teacher Support, LOC = Locus of Control.

3. es=emotion support, cs=capacity support, ls=learning support, lm=learning motivation, tm=teaching mode, le=learning ability, la=learning attitude, en=Environmental, ic=Internal focus of control, ot=Other influential person, op=Opportunities, co=Control, ch=Challenges, in=Involvement, re=Resilience.

4.3.4 Comparison of Variables' Differences of Students in Free Six-year Normal Universities from Junior High Schools in Different Schools

One-factor ANOVA variance test is used to analyze the differences in TS , LA, LOC, and hardiness among the students in free six-year normal universities from junior high schools who are in different schools, and the results are shown in Table 4.19.

There is no significant difference in TS of students in free six-year normal universities from junior high schools in different schools, and it's F =14.573, p<0.001, reaching to the significant level. After significant difference is found in ANOVA analysis of TS and its dimensions, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the values of local university B and local university C are significantly larger than that of provincial university A. Significant differences are found in emotional support, ability support and learning support of students in free six-year normal universities from junior high schools in different schools, and it's F =7.655, F=14.154 and F= 8.382 respectively, reaching to the significant level. After significant difference is found in ANOVA analysis, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the values of local university B and local university C are significantly larger than that of provincial university A.

There is a significant difference in LA of the students in free six-year normal universities from junior high schools who are in different schools, F= 4.754: reaching to the significant level - 0.009. After significant difference is found in the ANOVA analysis of LA and its dimensions, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the values of local university B and local university C are significantly larger than that of provincial university A.

There is a significant difference in learning motivation of the students in free six-year normal universities from junior high schools who are in different schools: F= 4.005, reaching to the significant level - 0.018. After significant difference is found in the ANOVA analysis of learning motivation and its dimensions, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the values of local university B and local university C are significantly larger than that of provincial university A.

There is a significant difference in teaching mode of the students in free six-year normal universities from junior high schools who are in different schools: F= 5.316, reaching to the significant level - 0.005. After significant difference is found in the ANOVA analysis of learning motivation and its dimensions, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the values of local university B and local university C are significantly larger than that of provincial university A.

There is a significant difference in learning attitude of the students in free six-year normal universities from junior high schools who are in different schools: F= 3.358, reaching to the significant level - 0.035. After significant difference is found in the ANOVA analysis of learning attitude and its dimensions, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the values of local university B and local university C are significantly larger than that of provincial university A.

There is no significant difference in learning ability and environmental factors of students in free six-year normal universities from junior high schools in different schools

In terms of LOC, no significant difference is found in LOC, internal focus of control and opportunities of students in free six-year normal universities from junior high schools in different schools;

There is significant difference in the aspects of other influential person of students in free six-year normal universities from junior high schools in different schools, and it's F= 4.453, which reaches the significant level - 0.012. After significant difference is found in ANOVA analysis of other influential person and its dimensions, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the values of local university B and local university C are significantly larger than that of provincial university A.

There is a significant difference in hardiness of the students in free six-year normal universities from junior high schools who in different schools: F= 7.693, reaching to the significant level - 0.000. After significant difference is found in the ANOVA analysis of hardiness and its dimensions, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the values of local university B and local university C are significantly larger than that of provincial university A. There is a significant difference in control of the students in free six-year normal universities from junior high schools who in different schools: F= 5.571, reaching to the significant level - 0.003. After significant difference is found in the ANOVA analysis of control and its dimensions, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the values of local university B and local university C are significantly larger than that of provincial university A. There is a significant difference in challenges of the students in free six-year normal universities from junior high schools who are o in different schools: F= 5.443, reaching to the significant level - 0.004. After significant difference is found in the ANOVA analysis of challenges and its dimensions, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the values of local university B and local university C are significantly larger than that of provincial university A. There is a significant difference in resilience of the students in free six-year normal universities from junior high schools who are in different schools: F= 7.256, reaching to the significant level - 0.001. After significant difference is found in the ANOVA analysis of resilience and its dimensions, post-test is carried out. In this study, the Levene test for homogeneity of variance is conducted first, and it is found that the p values are all greater than 0.05, which does not reach the significant level, representing the homogeneity of variance of each sample, so the LSD test is used for post-hoc test, and it is found that the values of local university B and local university C are significantly larger than that of provincial university A. Students in free six-year normal universities from junior high schools in different schools have no significant difference in investment.

To sum up, in this study, the TS, LA, LOC, and hardiness of students in free six-year normal universities from junior high schools largely depend on the school. See details in Table 4.19:

Table 4.19 Analysis Table of t Test of Each Variable for Students in Free six-year Normal Universities From Junior High Schools in Different Schools

Dimension & Overall	Mean value (standard deviation)			F value
	Provincial capital A (n=456)	Local university B (n=341)	Local university C (n=341)	
Overall TS	3.38(0.806)	3.644(0.804)	3.645(0.825)	14.573***
es	3.499(0.948)	3.736(0.971)	3.712(0.946)	7.655***
cs	3.237(1.102)	3.573(1.022)	3.588(1.06)	14.154***
ls	3.404(0.935)	3.625(0.885)	3.636(0.923)	8.382***
Overall LA	3.587(0.662)	3.734(0.733)	3.704(0.773)	4.754**
lm	3.496(0.866)	3.676(0.877)	3.592(0.942)	4.005*
tm	3.456(0.972)	3.646(0.978)	3.652(0.988)	5.316**
le	3.7(0.792)	3.779(0.811)	3.808(0.829)	1.937
la	3.625(0.953)	3.799(0.96)	3.745(1.034)	3.358*
en	3.659(0.995)	3.768(1.001)	3.726(1.059)	1.163
Overall LOC	3.871(0.658)	3.975(0.757)	3.941(0.771)	2.154
ic	3.783(0.875)	3.922(0.906)	3.853(0.93)	2.344
ot	3.748(0.824)	3.931(0.869)	3.84(0.886)	4.453*
op	4.082(0.826)	4.072(1.011)	4.128(0.917)	0.385
Overall hardiness	3.531(0.709)	3.694(0.714)	3.706(0.712)	7.693***
co	3.444(0.904)	3.609(0.919)	3.647(0.9)	5.571**
ch	3.489(0.919)	3.615(0.965)	3.707(0.927)	5.443**
in	3.647(0.83)	3.758(0.786)	3.773(0.818)	2.911
re	3.545(0.944)	3.794(0.891)	3.696(0.954)	7.256**

Note: 1. *p＜0.05, **p＜0.01, ***p＜0.001.

3. LA = Learning Adaptation, TS = Teacher Support, LOC = Locus of Control.

4. es=emotion support, cs=capacity support, ls=learning support, lm=learning motivation,tm=teachingmode, le=learning ability, la=learning attitude, en=Environmental, ic=Internal focus of control, ot=Other influential person, op=Opportunities, co=Control, ch=Challenges, in=Involvement, re=Resilience.

4.3.5 Comparison of Variables' Differences of Students in Free Six-year Normal Universities from Junior High Schools with Different Origin of Student

T- test of independent sample is used to analyze the differences in TS, LA, LOC, and hardiness among the students in free six-year normal universities from junior high schools with different origin of student, and the results are shown in Table 4.18.

In the aspect of TS, no significant difference is found in the TS of students in free six-year normal universities from junior high schools with different origin of student (t=-1.943, p＜0.05).Significant difference is found in the perception of LA of students in free six-year normal universities from junior high schools with different origin of the student (t=-3.632, p＜ 0.001). In addition, the LA of rural students (M=3.58) is significantly lower than that of students in urban areas (M =3.735);

what's more, there are significant differences in the four dimensions of LA: A. learning motivation, B. teaching mode, C. learning attitude and D.environmental factors. t= -2.895, t=-3.236, t=-2.751 and t=-2.924 respectively, reaching to the significant level - being greater than 0.05， and there is no significant difference in learning ability.

In the aspect of LOC, no significant difference is found in the LOC of students in free six-year normal universities from junior high schools with different origin of student (t=-0.061, p>0.05).

There is significant difference in hardiness of the students in free six-year normal universities from junior high schools with different origin of student (t=-3.035, p<0.01), moreover, hardiness of rural students (M=3.56) is significantly lower than LA of students in urban areas (M =3.689); what's more, there are significant differences in the four dimensions of hardiness: A. control, B. challenges, C. investment and D. resilience. t= -2.208, t=-2.217,t= -2.846 , t=-2.414 respectively, reaching to the significant level - being greater than 0.05.

Table 4.20 Analysis Table of T Test of each Variable for Students in Free Six-year Normal Universities from Junior High Schools with Different Origin of Student

Dimension & Overall	Mean value (standard deviation)		t	p
	Rural area (n=504)	Urban area (n=634)		
Overall TS	3.486(0.815)	3.581(0.823)	-1.943	0.052
Emotional support	3.59(0.975)	3.668(0.947)	-1.373	0.17
Capacity support	3.387(1.06)	3.487(1.091)	-1.549	0.122
Learning support	3.48(0.932)	3.587(0.913)	-1.946	0.052
Overall LA	3.58(0.739)	3.735(0.698)	-3.632	0.000***
Learning motivation	3.493(0.902)	3.647(0.884)	-2.895	0.004*
Teaching model	3.467(0.982)	3.656(0.975)	-3.236	0.001***
Learning ability	3.703(0.847)	3.798(0.776)	-1.958	0.051
Learning attitude	3.623(1.021)	3.785(0.945)	-2.751	0.006**
Environmental factors	3.613(1.051)	3.79(0.981)	-2.924	0.004**
Overall LOC	3.924(0.683)	3.22(0.755)	0.061	0.952
Internal control	3.835(0.882)	3.855(0.919)	-0.375	0.708
Other influential person	3.828(0.825)	3.833(0.886)	-0.092	0.926
Opportunities	4.111(0.851)	4.078(0.957)	0.603	0.547
Overall hardiness	3.56(0.737)	3.689(0.693)	-3.035	0.002 **
Control	3.488(0.928)	3.608(0.895)	-2.208	0.027
Challenges	3.523(0.98)	3.647(0.903)	-2.217	0.027
Investment	3.641(0.841)	3.779(0.789)	-2.846	0.005**
Resilience	3.59(0.964)	3.724(0.911)	-2.414	0.016*

Note: *p＜0.05, **p＜0.01, ***p＜0.001.

4.4 Correlation Analysis

In this study, Pearson correlation coefficient is used to analyze whether the four variables are correlated with each other and the degree of correlation. Qiu (2010) pointed out that a correlation coefficient r value of 0 indicates no correlation between variables, absolute value < 0.1 indicates weak correlation, 0.1≦r value < 0.4 indicates low correlation, 0.4≦r value < 0.7 indicates moderate correlation, 0.7≦r value < 1.0 indicates high correlation, and r=1.0 indicates complete correlation.

The result of Pearson correlation coefficient analysis shows that the correlation coefficient of TS and LOC r is 0.601 and p is 0.00, indicating a moderately positive and significant correlation between them; the correlation coefficient of TS and hardiness r is 0.561 ($p<0.001$), indicating a moderately positive and significant correlation between them; the correlation coefficient of TS and LA r is 0.551 ($p<0.001$), indicating a positive and significant correlation between them; the correlation coefficient of LOC and hardiness r is 0.405 ($p<0.001$), indicating a moderately positive and significant correlation between them; the correlation coefficient of hardiness and LA r is 0.513 and ($p<0.001$), indicating a moderately positive and significant correlation between them; As shown in Table 4.21:

Table 4.21 Summary Table of Correlation Analysis of Four Variables

Variable	1	2	3	4
1. TS	1			
2. LOC	.601***	1		
3. Hardiness	.561***	.405**	1	
4. LA	.551***	.584***	.513***	1

Note: 1. *p＜0.05, **p＜0.01, ***p＜0.001.
2. LA = Learning Adaptation, TS = Teacher Support, LOC = Locus of Control

4.5 Regression Analysis

The purpose of regression analysis is to further discuss explanatory and predictive relationship among variables with linear relationship as the basis. In this part, linear regression and multivariate regression analysis are used respectively to figure out TS of students in free six-year normal universities from junior high schools, the effect of LOC on LA, the function of LOC as a mediator for TS and LA, as well as the function of hardiness as a moderator for TS and LA. According to Qiu Haozheng (2010), R^2 value is used to judge the explanatory power of regression model, the explanatory power of R^2 value is judged by F value, and the extent of the effect is judged by value of regression coefficient β.

4.5.1 Regression Analysis of Teacher Support Against Learning Adaptation

The perception of students in free six-year normal universities from junior high schools concerning the effect of TS on LA is tested by regression analysis. With LA as the dependent variable and TS as the independent variable, a regression model of effect of TS on LA is built. In the regression, demographic variables (sex, grade,only child or not, school locus of controlation and origin of student) are reprogrammed as dummy variables, and female, grade six, urban area, only child and local university C respectively acts as reference group. As shown in the Table 4.22:

Table 4.22 Analysis Table of Linear Regression of Teacher Support Against Learning Adaptation

Dependent variable: Learning adaptation					
Control variable	B	SE	β	p	VIF
Male	-0.111	0.039	-0.070	0.004 **	1.015
Grade one	-0.311	0.090	-0.182	0.001 ***	4.687
Grade two	-0.208	0.089	-0.127	0.020*	5.003
Grade three	-0.232	0.091	-0.130	0.011*	4.373
Grade four	-0.169	0.092	-0.089	0.068	4.007
Grade five	-0.062	0.103	-0.024	0.548	2.563
Rural areas	-0.103	0.036	-0.071	0.004 **	1.013
Non-only child	-0.052	0.039	-0.033	0.188	1.071
Provincial capital	0.036	0.044	0.025	0.410	1.509
Local university B	0.054	0.046	0.034	0.247	1.452
TS	0.476	0.022	0.542	0.000***	1.048
F			50.103 ***		
R^2			0.329		
AdjR^2			0.322		

Note 1: *p＜0.05, **p＜0.01, ***p＜0.001;

2: Female, grade six, urban area, only child and local university C are reference groups.

Under the precondition that demographic variables are controlled, results show that F＝50.103 (p<0.001), which reaches the significant level, wherein, standardized regression coefficient of teacher support: β＝0.542 (p<0.001), representing that TS has a positive and significant effect on LA. In this regression model, all VIFs are less than 10, which means there is no collinearity among the independent variables in this model (Myers, 1990). Besides, R^2＝0.329, indicating that 32.9% of LA's amount of variation is explained by objects' TS.

Through the above analysis, hypothesis H2 is proposed: TS has a positive prediction effect on LA of students in six-year normal universities from junior high school in Hunan, China.

The hypothesis is tenable.

4.5.2 Regression Analysis of Teacher Support Against Locus of Control

The perception of students in free six-year normal universities from junior high schools concerning the effect of TS on LOC is tested by regression analysis. With LOC as the dependent variable and TS as the independent variable, a regression model of effect of TS on LOC is built. In the regression, demographic variables (sex, grade,only child or not, school locus of controlation and origin of students) are reprogrammed as dummy variable, and female, grade six, urban area, only child and local university 2 respectively acts as reference group. As shown in the Table 4.23:

Table 4.23 Analysis Table of Linear Regression of Teacher Support Against Locus of Control

Dependent variable: Locus of control					
Control variable	B	SE	β	p	VIF
Male	-0.049	0.038	-0.031	0.199	1.015
Grade one	-0.032	0.088	-0.018	0.72	4.687
Grade two	-0.053	0.087	-0.032	0.543	5.003
Grade three	-0.054	0.089	-0.03	0.542	4.373
Grade four	-0.075	0.09	-0.039	0.409	4.007
Grade five	0.015	0.1	0.006	0.88	2.563
Rural area	0.054	0.035	0.037	0.121	1.013
Non-only child	0.035	0.038	0.023	0.353	1.071
Provincial university A	0.066	0.043	0.045	0.124	1.509
Local university B	0.029	0.045	0.018	0.518	1.452
TS	0.538	0.021	0.61	0	1.048
F		59.407***			
R^2		0.367			
AdjR^2		0.361			

Note:1. *p＜0.05, **p＜0.01, ***p＜0.001;

2.Female, grade six, urban area, only child and local university C are reference groups.

Under the precondition that demographic variables are controlled, results show that F＝59.407 (p＝0.000), which reaches the significant level, wherein, standardized regression coefficient of TS: β＝0.61 (p＜0.001), representing that TShas a positive and significant effect on LOC. In this regression model, all VIFs are less than 10, which means there is no collinearity among the independent variables in this model (Myers, 1990). Besides, R^2＝0.367, indicating that 36.7% of LOC's amount of variation is explained by objects' TS.

Through the above analysis, hypothesis H3 is proposed: TS has a positive prediction effect on LOC of students in six-year normal universities from junior high school in Hunan, China.

The hypothesis is tenable.

4.5.3 Regression Analysis of Locus of Control Against Learning Adaptation

The perception of students in free six-year normal universities from junior high schools concerning the effect of LOC on LA is tested by regression analysis. With LA as the dependent variable and LOC as the independent variable, a regression model of effect of LOC on LA is built. In the regression, demographic variables (sex, grade,only child or not, school locus of controlation and origin of students) are reprogrammed as dummy variables, and female, grade six, urban area, only child and local university C respectively acts as reference group. As shown in the Table 4.24:

Table 4.24 Analysis Table of linear Regression of Locus of Control Against Learning Adaptation

Dependent variable: Learning adaptation					
Control variable	B	SE	β	*p*	VIF
Male	-0.105	0.038	-0.066	0.005 **	1.016
Grade one	-0.269	0.087	-0.158	0.002**	4.682
Grade two	-0.176	0.086	-0.108	0.042*	5.004
Grade three	-0.188	0.088	-0.105	0.033*	4.372
Grade four	-0.098	0.089	-0.052	0.272	4.001
Grade five	-0.066	0.099	-0.025	0.503	2.563
Rural areas	-0.148	0.034	-0.102	0	1.011
Non-only child	-0.096	0.038	-0.062	0.011*	1.065
Provincial university A	-0.04	0.042	-0.028	0.339	1.491
Local university B	0.038	0.045	0.024	0.39	1.452
LOC	0.572	0.024	0.575	0	1.012
F			61.204***		
R^2			0.374		
Adj R^2			0.368		

Note: 1. *p＜0.05, **p＜0.01, ***p＜0.001;

2. Female, grade six, urban area, only child and local university C are reference groups.

Under the precondition that demographic variables are controlled, results show that F＝61.204 (p＝0.000), which reaches the significant level, wherein, standardized regression coefficient of LOC: β＝0.575 (p<0.000), representing that LOC has significant positive effect on LA. In this regression model, all VIFs are less than 10, which means there is no collinearity among the independent variables in this model (Myers, 1990). Besides, R^2＝0.374, indicating that 37.4% of LA's amount of variation can be explained by objects' LOC.

Through the above analysis, hypothesis H4 is proposed: LOC has a good prediction effect on LA of students in six-year normal universities from junior high school in Hunan, China.

The hypothesis is tenable.

The purpose of regression analysis is to further discuss explanatory and predictive relationship among variables with linear relationship as the basis. In this part, linear regression and multivariate regression analysis are used respectively to figure out TS of students in free six-year normal universities from junior high schools, the effect of LOC on LA, the function of LOC as a mediator for TS and LA, as well as the function of hardiness as a moderator for TS and LA. According to Qiu Haozheng (2010), R^2 value is used to judge the explanatory power of regression model, the explanatory power of R^2 value is judged by F value, and the extent of the effect is judged by value of regression coefficient β.

In this study, due to significant differences exist in hardiness and LA of students in free six-year normal universities from junior high schools of different sex, and LA of students in free six-year normal universities from junior high schools of different grade, background variables (sex and grade) are used as control variables in regression model.

4.5.4 Analysis of Mediator Role of Locus of Control for Teacher Support and Learning Adaptation

According to mediator testing method proposed by Baron and Kenny (1986), mediator should conform to three conditions: A. Independent variable has a significant predictive effect on dependent variable; B. Independent variable has a significant predictive effect on mediator variable; C. Add independent variable and mediator variable into the regression model at the same time to predict dependent variable. Mediator variables have significant predictive effect, so that of the independent variable shall be significantly decreased. If the significant predictive effect of an independent variable on dependent variable is eliminated after decreasing, it is called complete mediator; if the of independent variable still has significant predictive effect on dependent variable after decreasing, it is called partial mediator.

Under the condition of background variables (sex, grade,only child or not, school locus of controlation and origin of students) are regarded as the control variable in the regression model, the findings are as follows: firstly, students in free six-year normal universities from junior high schools of different sex have significant differences in levels of TS, LOC, and LA; secondly, only children have significant differences in levels ofTS, LOC and LA; thirdly, students in free six-year normal universities from junior high schools who are of different grade, in different schools and with different origin of student have no significant difference in levels of TS, LOC and LA. The results show that in model 1, F is 85.133 and p is 0.000, reaching to the significant level, wherein, standardized regression coefficient β of TS is 0.542 ($p<0.001$, $R^2=0.329$), representing that the TS of objects has positive and significant effect on LA, and 32.9% of learning investment can be explained. All VIFs in this regression model are less 10, which means there is no collinearity among the independent variables in this model, thus condition 1 is met: independent variable TS has a significant predictive effect on dependent variable LA; in model 2, F is 59.407 and p is 0.000, reaching to the significant level, wherein, standardized regression coefficient βof TS is 0.61 ($p<0.001$, $R^2=0.367$), representing that TS has significant positive effect on LOC, and 36.7% of LOC's amount of variation can be explained by objects' TS. In this regression model, all VIFs are less than 10, which means there is no collinearity among the independent variables in this model. Thus condition 2 is met: independent variable TS has a significant predictive effect on mediator variable LOC; in model 3, when independent variable TS and mediator variable LOC are added in the model, F is 70.437 and p is 0.000, and the significant level is reached, wherein, standardized regression coefficient β of TS is 0.3 ($p<0.001$), standardized regression coefficient β of LOC is 0.398 ($p<0.001$) and $R^2 = 0.429$, representing that TS has significant positive effect on LA of objects and LOC also has significant positive effect on LA, which jointly explains 42.9% of learned helplessness. Compared with the model 1, amount of explained variation increased by 3.8%, and standardized coefficient of TS descend from 0.542 ($p<0.001$) to 0.3($p<0.001$). Thus condition 3 is met: LOC has a significant effect on LA, and standardized coefficient of TS still have predictive effect after decreasing, indicating that LOC plays a partial mediator role in the effect of TS on LA, as shown in Table 4.25:

Table 4.25 Analysis Table of Mediating Effect of Locus of Control for Teacher Support and Learning Adaptation

	LA	LOC	LA
	Model1	Model2	Model3
	β	β	β
Male	-0.07**	-0.031	-0.058*
Grade one	-0.182**	-0.018	-0.175***
Grade two	-0.127*	-0.032	-0.114*
Grade three	-0.13*	-0.03	-0.118*
Grade four	-0.089	-0.039	-0.074
Normal students of the fifth year	-0.024	0.006	-0.026
Rural areas	-0.071**	0.037	-0.086***
Non-only child	-0.033	0.023	-0.042
Provincial unity A	0.025	0.045	0.007
Local university B	0.034	0.018	0.027
TS	0.542***	0.61***	0.3***
LOC			0.398***
F	50.103	59.407	70.437
R^2	0.329	0.367	0.429
Adj R^2	0.322	0.361	0.423

Note: 1.*p<0.05; ** p<0.01; ***p<0.001,

2. Female, grade six, urban area, only child and local university C are reference groups.

3. LA = Learning Adaptation, TS = Teacher Support, LOC = Locus of Control

It can be seen from model 1 that TS has significant effect on LA, thus Step 2 can be carried out; it can be seen from model 2 that TS has a significant effect on LOC, thus Step 3 can be carried out; it can be seen from model 3 that LOC has significant effect on LA, and standardized coefficient of TS for LA is reduced from 0.543 to 0.305 while maintaining significant effect, indicating that LOC plays a partial mediator role in the effect of TS on LA. Therefore, the hypothesis is tenable.

Mediator effect test is further implemented in the way of Sobel test (Sobel, 1982). As per Sobel test mode (Sobel, 1982), non-standardized regression coefficient Beta of independent variable - academic self-efficacy and mediator variable - learning burnout equals 0.538 and standard error equals 0.021, and non-standardized regression coefficient Beta of mediator variable - LOC and dependent variable - LA equals 0.396 and standard error equals 0.028. The results show that LOC plays a significant mediator role in the effect of TS on LA (t= 12.381, p<0.001). Therefore, mediator effect is further verified. As shown in Table 4.26:

Table 4.26 Sobel Analysis Table of Locus of Control as Mediator

Independent variable	a	Sa	B	Sb	t	p
TS	0.538	0.021	0.396	0.028	12.381	0.000

Through the above analysis, hypothesis H5 is proposed: The LOC of students in free six-year normal universities from junior high schools in Hunan, China plays a mediator role in the effect of TS on LA, thus, the hypothesis is tenable.

4.5.5 Regression Analysis on Moderator of Teacher Support on Hardiness and Learning Adaptation

According to moderator testing method proposed by Baron and Kenny (1986), the moderator should conform to three conditions: A. Independent variable has a significant predictive effect on dependent variable; B. Moderator variable has significant predictive effect on dependent variable; C. The interaction item of independent variable and moderator variable has a significant predictive effect on dependent variable. To avoid the problem of collinearity caused by the high correlation between predictor variable and interaction item, the practices of Aiken, West and Reno (1991) are taken as references, translating the values of the independent variable and moderator variable to zero through linear translation, calculating the product, and using the variation inflation factor (VIF) as a collinearity test indicator. In case of VIF value is greater than 10, obvious collinearity problems exist among variables (Myers, 1990).

Under the condition of background variables (sex, grade,only child or not, school locus of controlation and origin of students) are regarded as the control variable in the regression model, the findings are as follows: firstly, students in free six-year normal universities from junior high schools of different sex have significant differences in levels of TS, LOC, and LA; secondly, students in free six-year normal universities from junior high schools who are only children have significant differences in levels of TS, LOC and LA; thirdly, students in free six-year normal universities from junior high schools who are of different grade, in different schools and with different origin of student have no significant difference in levels of TS, LOC and LA. Tested with hierarchical regression, analysis results are as shown in Table 4.28: Under the precondition that demographic variables including sex, grade, school, origin of student and only child are controlled, in model 1, the 40.4% of LA can be explained by independent variable TS($F=5.661$, $p<0.001$); in model 2, 36.6% of LA ($F=58.749$, $p<0.001$) can be jointly explained after adding moderator variable - hardiness; in model 3, explained amount is increased by 23.3% after adding interaction item, and a total of 43.1% of LA is explained ($F=65.597$, $p<0.001$). In hierarchical regression model 3, VIF are 1.016~1.176, which are less than 10, indicating that TS, LA, LOC and hardiness interact with each other and there is no collinearity among them, as shown I Table 4.27:

Table 4.27 Analysis of the Moderator of Hardiness on Teacher Support and Learning Adaptation

Item	Model1	Model 2	Model 3	VIF
	(Dependent variable: Learning Adaptation)			
Control variable	Btea	Btea	Btea	
Male	-0.109***	-0.068**	-0.066**	1.016
Grade one	-0.142*	-0.162**	-0.165**	4.695
Grade two	-0.124	-0.123*	-0.125*	5.004
Grade three	-0.109	-0.119*	-0.121*	4.375
Grade four	-0.047	-0.071	-0.081	4.016
Grade five	-0.019	-0.012	-0.012	2.566
Rural areas	-0.098**	-0.054*	-0.039	1.024
Non-only child	-0.077*	-0.027	-0.015	1.075
Provincial university A	-0.05	0.032	0.04	1.512
Local university B	0.037	0.035	0.034	1.452
Teacher Support		0.382***	0.404***	1.514
Hardiness		0.289***	0.366***	1.605
Teacher Support x Hardiness			0.233***	1.176
F	5.661	58.749	65.597***	
R^2	0.048	0.385	0.431	
Adj R^2	0.039	0.379	0.425	

Note: 1.* p＜0.05；**p＜0.01；***p＜0.001 ,

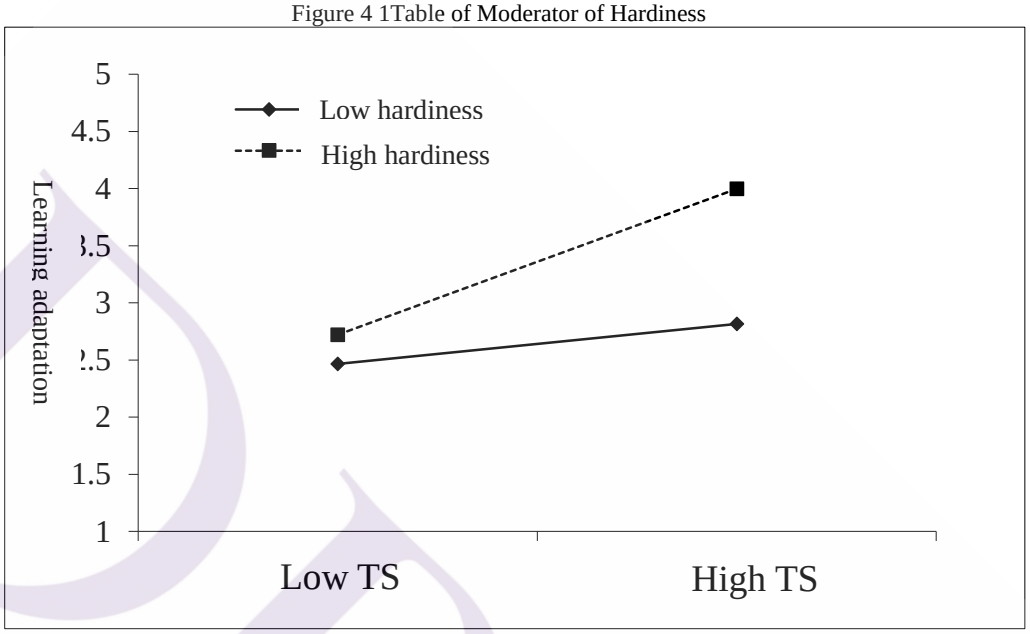
2. Female, grade six, urban area, only child and local university C are reference groups.

It can be seen from Table 4.28 that TS significantly and positively predicts LA (β＝0.404, p<0.001), LOC significantly and positively predicts LA (β＝0.366, p<0.001), and interaction of TS and LOC significantly and positively predicts LA (β＝0.233, p<0.001), indicating that the effect of TS on LA is subject to the influence of moderator-hardiness.

This study further draws an interaction diagram to understand the moderator role of t hardiness in the relationship between TS and LA, and the slope is obtained based on the data . As shown in Table 4.1, no matter of high-level hardiness or low-level hardiness, the students who get TS have better LA than those who does not. Therefore, it is recommended for education managers to encourage students more and establish a good teacher-student relationship in the daily educational management and make students have full confidence in themselves. The study also found that hardiness of students in free six-year normal universities from junior high schools plays a positive moderator role in the effect of TS on LA, that is, students with high-level hardiness have better performance in LA than those with low-level hardiness, and with the improvement of TS strength, LA effect of students with high-level hardiness becomes increasingly obvious than that of students with low-level hardiness. On the whole, the study also found that students with high-level TS has more obvious LA effect in case of having strong hardiness. This is consistent with social interaction theory of Bandura (1986), namely, the influencing factors of learning are susceptible to the interaction of individual and situational factors. Russell *et al.*, *(*2016) also hold the view that as an external factor for individual living environment, social support often interact with personal cognitive factors to play a moderator role for individual physical and mental health development. To sum up, other than the vital function on enriching social interaction theory, this study also has a certain guiding significance for practical work of education managers: Support and care from

family, teacher and friend is part and parcel of the perceived social support of students in free six-year normal universities from junior high schools, and critical support given by significant others around them during the growth process can arouse more positive learning behavior of students in free six-year normal universities from junior high schools. In addition to TS, the practical educational management activity can also start with improving the hardiness of students so as to promote students in free six-year normal universities from junior high schools to invest more positive emotions and behaviors in their learning, and improve their ability of LA.

Figure 4 1Table of Moderator of Hardiness



Note: L A = Learning Adaptation T S = Teacher Support

Through the above analysis, hypothesis H6 is proposed: The hardiness of students in free six-year normal universities from junior high schools in Hunan, China plays a moderator role in the effect of TS on LA, thus, the hypothesis is tenable.

4.6 Answers to Research Questions

4.6.1 Answer to Research Question 1

Through statistical analysis of data, we can know the questions proposed in research question 1:

Firstly, there is no significant difference in the TS of students in free six-year normal universities from junior high schools of different grade in Hunan, China.

In terms of LA, there is a significant difference in the LA of students in free six-year normal universities from junior high schools of different grade in Hunan, China. Post-hoc test found that the differences of grade four, grade five and grade six are significantly greater than that of grade one, and the differences of grade four and grade six are significantly greater than that of grade two; in terms of learning ability, there is a significant difference in the learning ability of students in free six-year normal universities from junior high schools of different grade in Hunan, China. Post-hoc test found that the differences of grade five and grade six are significantly greater than that of grade one, and the difference of grade six is significantly greater than that of grade two and grade three; in terms of environmental factors, there is a significant difference in the environmental factors of students in free six-year normal universities from junior high schools of different grade in Hunan, China. The differences of grade five and grade six are significantly greater than that of grade one, and the difference of grade four is significantly greater than that of grade two and grade three; while no significant difference is found in the aspects of learning motivation, teaching mode and learning attitude.

In the aspect of LOC, there is no significant difference in LOC and its three secondary dimensions of students in free six-year normal universities from junior high schools in Hunan, China of different grade.

In the aspect of hardiness, there is no significant difference in hardiness and its four secondary dimensions of students in free six-year normal universities from junior high schools of different grade in Hunan, China.

Secondly, no significant difference is found in TS of students in free six-year normal universities from junior high schools with different origin of student in Hunan, China.

No significant difference is found in LA of students in free six-year normal universities from junior high schools with different origin of student in Hunan, China. And the LA of rural students is significantly lower than that of students in urban areas; in addition, there are significant differences in the four dimensions of LA: A. learning motivation, B. teaching mode, C. learning attitude and D. environmental factors, and there is no significant difference in learning ability.

No significant difference is found in LOC of students in free six-year normal universities from junior high schools with different origin of student in Hunan, China.

In terms of hardiness, students in free six-year normal universities from junior high schools with different origin of student in Hunan, China show significant differences in hardiness. And the hardiness level of rural students significantly lower than that of students in urban area; what's more, there are significant differences in the four dimensions of hardiness: A. control, B. challenges, C. investment and D. resilience.

Thirdly, there is significant difference in TS of students in free six-year normal universities from junior high schools in different schools in Hunan, China.

Through post-hoc test, it is found that the differences of local university B and local university C are significantly greater than that of provincial university; Significant differences are found in emotional support, ability support and learning support of students in free six-year normal universities from junior high schools in different schools in Hunan, China.

There is a significant difference in LA of students in free six-year normal universities from junior high schools in different schools in Hunan, China,

while there is no significant difference in LOC, internal focus of control and opportunities of students in free six-year normal universities from junior high schools in different schools in Hunan, China; In the aspect of other influential person, there is a significant difference in other influential person of students in free six-year normal universities from junior high schools in different schools;

There is a significant difference in hardiness of students in free six-year normal universities from junior high schools in different schools in Hunan, China.

At last, significant difference is found in the perception of TS of students in six-year normal universities from junior high school who are the non- only children t in Hunan, China. And the TS of non-only children is significantly lower than that of only child; besides, there are significant differences in the three dimensions of TS: A. emotional support, B. ability support and C. learning support.

In the aspect of LA, significant difference is found in the perception of LA of students in six-year normal universities from junior high school who are the non-only children in Hunan, China. And the LA of non-only child is significantly lower than that of only child; In addition, there are significant differences in the four dimensions of LA: B. teaching mode, C. learning ability, D. learning attitude and E. environmental factors, and there is no significant difference in learning motivation.

In the aspect of LOC, no significant difference is found in LOC of students in six-year normal universities from junior high school who are the non-only children in Hunan, China. There is a significant difference in the dimension of LOC-B.internal focus of control, and no significant difference is found in other influential person and opportunities.

In the aspect of hardiness, significant difference is found in the perception of hardiness of students in six-year normal universities from junior high school who are the non-only children in Hunan, China. And the hardiness of non-only child is significantly lower than that of only child; in addition, there are significant differences in the three dimensions of hardiness: A. control, B. challenges, C. investment, and there is no significant difference in resilience.

4.6.2 Answer to Research Question 2

Through statistical regression analysis, it is found that the perceived TS of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on LA, that is, the higher the level of perceived TS of students in free six-year normal universities from junior high schools in Hunan, China, the stronger the LA ability.

4.6.3 Answer to Research Question 3

Through statistical regression analysis, it is found that the perceived TS of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on LOC, that is, the higher the level of perceived LOC of students in free six-year normal universities from junior high schools in Hunan, China, the stronger the LOC ability.

4.6.4 Answer to Research Question 4

Through statistical regression analysis, it is found that the level of LOC of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on LA, that is, the higher the level of LOC of students in free six-year normal universities from junior high schools in Hunan, China, the stronger the LA ability.

4.6.5 Answer to Research Question 5

Statistical regression analysis in this study revealed that the perceived TS of students in free six-year normal universities from junior high schools in Hunan, China has an indirect effect on LA via LOC, that is, LOC plays a mediator role in the relationship between TS and LA, and there is a partial mediator role.

4.6.6 Answer to Research Question 6

Statistical regression analysis in this study revealed that the effect of perceived TS by students in free six-year normal universities from junior high schools in Hunan, China on LA shall be moderated by hardiness. And students with high-level hardiness have better performance in LA than those with low-level hardiness. With the improvement of hardiness level, LA effect of students with high-level hardiness becomes increasingly obvious than that of students with low-level hardiness.

4.7 The Verification Results of Hypotheses

After statistical analysis based on research data, the research conclusions for research hypotheses are concluded as shown in Table 4.28:

Table 4.28 Summary Table of Verification Results of Research Hypotheses

Hypothesis	Verification Results
H1: Different background variables (sex, grade, only child or not, school locus of controlation and origin of students) have significant differences in teacher support,locus of conterol , hardiness and learning adaptation .	Partially Confirmed
H2: The perception of TS of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on LA.	Confirmed
H3: The perception of TS of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on LOC.	Confirmed
H4: The LOC of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on LA.	Confirmed
H5: The LOC of students in free six-year normal universities from junior high schools in Hunan, China plays a mediator role in the effect of TS on LA.	Confirmed
H6: The hardiness of students in free six-year normal universities from junior high schools in Hunan, China plays a moderator role in the effect of TS on LA.	Confirmed

To sum up contents described in this chapter, based on the research hypotheses proposed in Chapter 3, independent-samples test and one-factor ANOVA variance test are used to carry out statistical analysis on the differences of different

background variables in each variable; explanatory and predictive relationships among variables are further discussed with linear regression analysis; according to mediator and moderator testing methods proposed by Baron and Kenny (1986), two regression model are built, which are respectively used to test the function of LOC as a mediator for TS and LA and the function of hardiness as a moderator for TS and LA. According to the results of the study: A. Different background variables (sex, grade, origin of student and being the only child or not) have significant differences in TS, LOC, hardiness and LA. B. The perception of TS of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on LA ($\beta=0.404$, $p<0.001$); C. The perception of TS of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on LOC ($\beta=0.61$, $p<0.001$); D. The LOC of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on LA ($\beta=0.366$, $p<0.001$; E. The LOC of students in free six-year normal universities from junior high schools in Hunan, China plays a mediator role in the effect of TS on LA. Standardized coefficient of TS descends from the original 0.543 ($p<0.001$) to 0.305 ($p<0.001$). Thus condition 3 is met: LOC has a significant effect on LA, and standardized coefficient of TS still have predictive effect after decreasing, indicating that LOC plays a partial mediator role in the effect of TS on LA. (6) Hardiness of students in free six-year normal universities from junior high schools in Hunan, China plays a moderator role in the effect of TS on LA. TS significantly and positively predicts LA ($\beta=0.404$, $p<0.001$), LOC significantly and positively predicts LA ($\beta=0.366$, $p<0.001$), and interaction of TS and LOC significantly and positively predicts LA ($\beta=0.233$, $p<0.001$), indicating that the effect of TS on LA is subject to the influence of moderator-hardiness.

CHAPTER 5
DISCUSSION

Based on the item analysis, exploratory factor analysis and reliability analysis in the initial questionnaire and the confirmatory factor analysis and reliability analysis in the formal questionnaire, it is found that the Questionnaire on the Learning Situation of Students in Free Six-year Normal Universities from Junior High Schools in Hunan Province of China, which consists of teacher support scale, learning adaptation scale, locus of control scale and hardiness scale, has good reliability and validity. This chapter first explains the current situation of teacher support, learning adaptation, locus of control and hardiness of students in free six-year normal universities from junior high schools in Hunan, China. Next, it sorts out the differences of different background variables on various research variables, the correlation among variables and the influence of teacher support of students in free six-year normal universities from junior high schools on learning adaptation . Finally, it discusses the mediating effect of locus of control on the influence of teacher support on learning adaptation and the moderating effect of hardiness on the influence of teacher support on learning adaptation.

5.1 The Current Situation and Differences of Background Variables of Students in Free Six-year Normal Universities from Junior High Schools in Teacher Support, Learning Adaptation, Locus of Control and Hardiness

5.1.1 The Current Situation and Difference of Teacher Support of Students in Free Six-year Normal Universities from Junior High Schools

The results show that the mean level of teacher support of students in free six-year normal universities from junior high schools is higher than the median (3), which is the above-average level. This indicates that students in free six-year normal universities from junior high schools have a certain confidence in perceiving the support and care from the teacher in the face of teacher support.

In addition, according to the analysis of the data of differences in the teacher support of students in free six-year normal universities from junior high schools with different background variables (sex, grade, only child or not, school location and origin of students):

There is a significant difference in teacher support perceived by students in free six-year normal universities from junior high schools with different gender , where male students are significantly lower than female students. The background variable of gender has a difference in teacher support, which is consistent with the results of other researchers (Marachi, Astor & Benbenishty, 2007, 2019).

There is no significant difference in teacher support of students in free six-year normal universities from junior high schools of different grade, failing to reach the significant level. This research result is inconsistent with other researchers (Clary & Elzinga, 2014; Sharma, 2016; Terry & Yu, 2019; Terhoeven, 2009; Uchenna & Onuoha, 2015). These different results may be due to the fact that students in free six-year normal universities from junior high schools have less contact with the teacher, and the teacher plays a dispensable role in the class management, while the grade counselor takes over some work of the teacher. The influence of the teacher is small, and student in each grade have low identification with the teacher.

There is a significance difference in the teacher support of students in free six-year normal universities from junior high schools in terms of only child or not, and the teacher support of non-only-child students is significantly lower than that of only-child students, which is consistent with the result of other researchers (Zhang Wenhong & Ruan Danqing, 1999).

There is a significant difference in teacher support of students in free six-year normal universities from junior high

schools of different schools, reaching the significant level. The background variable of school location has a difference in teacher support, which is consistent with the results of other researchers (Lee & Bierman, 2015; Marachi, Astor & Benbenishty, 2007, 2019; Terry, Clary & Elzinga, 2014; Terhoeven, 2009; Yu, 2019).

There is no significant difference in the teacher support of students in free six-year normal universities from junior high schools in terms of different origin of students , which is in agreement with other researchers (Sharma, 2016; Yu, 2019).

5.1.2 The Current Situation and Difference of Learning Adaptation of Students in Free Six-year Normal Universities from Junior High Schools

According to the overall descriptive statistics of learning adaptation of students in free six-year normal universities from junior high schools, it is found that their overall learning adaptation consists of five dimensions (learning motivation, teaching model, learning ability, learning attitude and environmental). The learning adaptation of the tested students in free six-year normal universities from junior high schools indicates that the learning adaptation of these students is above average.

There is a significant difference in the learning adaptation of students in free six-year normal universities from junior high schools who are of different gender, reaching to the significant level of 0.001, where the learning adaptation of male students is significantly lower than that of female students; this is in agreement with other research results (Chen & Xiong Yanmei, 2019; Lu , 2019; Ren , 2020; Sun & Fu , 2016; Yong, 2017). Different from other studies, Sun , Bao & Sun (2020) found that learning adaptation is independent of gender, which may be due to the difference in selecting subjects.

There is a significant difference in learning adaptation of students in free six-year normal universities from junior high schools who are in different grades, reaching to the significant level . After significant difference is found in the ANOVA analysis of learning adaptation and its dimensions, post-hoc test is carried out. In this study, Levene test for homogeneity of variance is conducted first, which does not reach the significant level, representing the homogeneity of variance of each sample, so LSD test is used for post-hoc test, and it is found that the value of grades four, five and six is significantly greater than that of grade one; and the value of grades four and six is significantly greater than that of grade two. There is a significant difference in learning ability of students in free six-year normal universities from junior high schools who are in different grades, reaching to the significant level . After significant difference is found in the ANOVA analysis of learning adaptation and its dimensions, post-hoc test is carried out. In this study, Levene test for homogeneity of variance is conducted first,which does not reach the significant level, representing the homogeneity of variance of each sample, so LSD test is used for post-hoc test, and it is found that the value of grades five and six is significantly greater than that of grade one; and the value of grade six is significantly greater than that of grades two and three. There is a significant difference in environmental factors of students in free six-year normal universities from junior high schools who are in different grades,reaching to the significant level . After significant difference is found in the ANOVA analysis of environmental factors and their dimensions, post-hoc test is carried out. In this study, Levene test for homogeneity of variance is conducted first, which does not reach the significant level, representing the homogeneity of variance of each sample, so LSD test is used for post-hoc test, and it is found that the value of grade four and five is significantly greater than that of grade one; and the value of grade four is significantly greater than that of grades two and three; while no significant difference is found in the aspects of learning motivation, teaching model and learning attitude. This is in agreement with other research results (Huang & Xu, 2004; He, Zhang & Li, 2004; Sun & Fu , 2016), while other studies have different results (Yong, 2017), that is, the background variable of grade is not significant in the difference of learning adaptation. This is associated with the different subjects (vocational college students and normal students). Students in free normal universities have a fixed job in future employment, with clear learning objectives and strong enterprising spirit.

There is a significant difference in the learning adaptation of students in free six-year normal universities from junior high schools who are the only children or not , where the learning adaptation of non-only-child students is significantly lower than that of only-child students; this is in agreement with other research results (He , Zhang & Li , 2004; Lu, 2019; Ren , 2020; Sun, Bao & Sun , 2020;Yong, 2017), while other studies have different results (Chen & Xiong , 2019), which may because the subjects of other researchs are art college students.

There is a significant difference in learning adaptation of students in free six-year normal universities from junior

high schools who are in different schools. After significant difference is found in the ANOVA analysis of learning adaptation and its dimensions, post-hoc test is carried out. In this study, Levene test for homogeneity of variance is conducted first, which does not reach the significant level, representing the homogeneity of variance of each sample, so LSD test is used for post-hoc test, and it is found that the value of local university B and local university C is significantly greater than that of provincial university A. In the literature research, no researchers have studied the background variable of school in terms of learning adaptation.

There is a significant difference in the learning adaptation of students in free six-year normal universities from junior high schools who are from different origin of students ; there is a significant difference in the learning adaptation perceived by students in free six-year normal universities from junior high schools who are in different grades , and the learning adaptation of rural students is significantly lower than that of urban students; this is in agreement with other research results (Chen & Xiong , 2019; Ren , 2020; Sun & Fu , 2016).

5.1.3 The Current Situation and Difference of Locus of Control of Students in Free Six-year Normal Universities from Junior High Schools

According to the overall descriptive statistics of locus of control of students in free six-year normal universities from junior high schools, it can be found that the locus of control of these students consists of three dimensions (inter focus of control, other influential person and opportunity). The locus of control of the tested students in free six-year normal universities from junior high schools is above average.

There is no significant difference in the locus of control of students in free six-year normal universities from junior high schools who are of different gender, , reaching to the significant level. This is in agreement with other research results (Gong & Huang , 2005; Gao *et al*., 2010; Li , Lin & Tian , 2017; Yong, 2017; Zhong & Li , 2004).

There is no significant difference in the locus of control and its three dimensions of students in free six-year normal universities from junior high schools who are in different grades, This is in agreement with other research results (Zhong & Li , 2004; Yong, 2017).

There is a significant difference in the locus of control of students in free six-year normal universities from junior high schools who are the non-only child . This is consistent with other research results (Gong & Huang , 2005; Li , Lin & Tian, 2017).

There is no significant difference in the locus of control, internal focus of control and opportunity of students in free six-year normal universities from junior high schools who are in different schools, and there is a significant difference in other influential person. This is inconsistent with other research results (Li , Lin & Tian , 2017). Due to different number of students with internal control and external control personality, the research results may vary.

There is no significant difference in the locus of control of students in free six-year normal universities from junior high schools who are from different origin of students . This is in agreement with other research results (Zhong & Li , 2004)

5.1.4 The Current Situation and Difference of Hardiness of Students in Free Six-year Normal Universities from Junior High Schools

According to the overall descriptive statistics of hardiness of students in free six-year normal universities from junior high schools, it can be found that the hardiness of these students consists of four dimensions (control, challenge, input and resilience). The hardiness of students in free six-year normal universities from junior high schools is at a moderate level.

There is a significant difference in the hardiness of students in free six-year normal universities from junior high schools, representing no significant difference. There is a significant difference in the dimensions of control and input, respectively, reaching the significant level. This is in agreement with other research results (kobasa, 1979; Li, 2020; Soderstrom, Dolbier, Liferman, *et al*., 2000; Sun & Fu , 2016;). This is inconsistent with other research results (Huang , 2017), which may be due to the fact that subjects are fresh graduates who are looking for a job and have different attitudes and thoughts in filling the questionnaire.

There is a significant difference in hardiness of students in free six-year normal universities from junior high schools

of different grades, This is in agreement with other research results (Luo, 2019; Li, 2020; Sun & Fu , 2016).

There is a significant difference in the hardiness perceived by students in free six-year normal universities from junior high schools who are the non-only child, where the hardiness of non-only-child students is significantly lower than that of only-child students ; in addition, there is a significant difference in the three dimensions of learning adaptation (control, challenge and input), respectively, all of which reach the significant level . There is no significant difference in resilience. This is in agreement with other research results (Luo, 2019), while other researchers have different results (Huang, 2017). The public opinion is generally that the only child born in the 90s is inferior to the non-only child in terms of perseverance. This study shows that the only child is superior to the non-only child in the dimension of control, while there is no difference in other dimensions regardless of only child or non-only child. This result is similar to most studies, that is, whether students are the only child or not generally does not affect their hardiness, because most of the setbacks faced by them entering the school environment after the age of six occur with peer groups. Compared with non-only child, the only child shows a higher level of control, which is related to the improvement of the overall economic environment. The normal demand of individual families, regardless of only child or non-only child, can generally be met. However, the non-only child enjoys few resources and needs more resources, and only strives for more resources. However, once faced with setbacks, it is often ideal to support individual beliefs. The only child born after 90 has sufficient conditions and energy to pursue his/her ideals on the abundant material basis.

There is a significant difference in hardiness of students in free six-year normal universities from junior high schools,reaching the significant level of. This is in agreement with other research results (Li , 2020; Sun & Fu , 2016).

There is a significant difference in hardiness of students in free six-year normal universities from junior high schools who are from different origin of students , where the learning adaptation of rural students is significantly lower than that of urban students; in addition, there is a significant difference in the four dimensions of hardiness (control, challenge, input and resilience), respectively, all of which reach the significant level . This is in agreement with other research results (Luo , 2019; Sun & Fu , 2016), but is inconsistent with other research results (Huang, 2017). The possible reason is different subjects. Fresh graduates may have a better family background than free normal students, and they are more mature in psychology and physiology and have a stronger psychological endurance. In comparison, students in free six-year normal universities from junior high schools are much more immature, and they are characterized by "three more and one less", i.e., more rural students, more non-only children, less rich families and more minority students. These students have a weak psychological endurance.

5.2 The Impact of Teacher Support of Students in Free Six-year Normal Universities from Junior High Schools on Learning Adaptation.

This study finds that teacher support of students in free six-year normal universities from junior high schools has a significant positive influence on learning adaptation, that is, the former is in direct proportional to the latter. Reddy, Rhodes and Mulhall (2003) found that the relationship of teacher support and school adaptation has a significant positive effect on the dimension of learning adaptation. Garcia-Reid and Peterson (2005) also verified the importance of teacher support for academic input of the students. Uchenna C. Onuoha (2015) found and verified the positive effects of teacher support in helping students complete courses, while limiting their participation in dangerous actions. Xiao (2016) studied the relationship between teacher support and school adaptation has a significant positive effect on the dimension of learning adaptation. Rueger, Malecki and Demaray (2010) found that teacher support is able to significantly predict the learning adaptation of students. Xu *et al.*. (2005) found that there is a significant positive correlation between the learning adaptation of college students and their social support. That is to say, college students performs better in learning adaptation if they have more social supports. This indicates that social support may have a promoting effect on the learning adaptation of universities students.

Bandura (1977, 1986) analyzed the theory of social persuasion originated from the individual self-efficacy in the social learning theory, and pointed out that: in the social system composed of other important persons, individuals get a higher sense of self-efficacy for various incentives or praises in the process of completing tasks, so that individuals are more likely to put in more efforts and perseverance in the face of difficulties, especially when individuals feel struggling or doubt themselves, and the persuasion in social organization system is more obvious at this time. Therefore, under the interaction of self-efficacy

and support and encouragement from other persons, individuals' self-confidence is continuously enhanced, and then they establish a positive psychological state. Therefore, in the process of individuals completing learning tasks, support from other important persons (family members, teachers or classmates, etc.) from time to time, such as verbal incentives, is more conducive to strengthening students' determination to continue to complete tasks when facing learning difficulties (Zhou & Guo , 2006). There is a significantly positive relationship between the teacher support of students in free six-year normal universities from junior high schools and the learning adaptation, which is in agreement with the theory of social persuasion in the social learning theory of Bandura (1977, 1986). Hence, the results of this study are in concert with the social learning theory of Bandura (1977, 1986).

5.3 The Impact of Teacher Support of Students in Free Six-year Normal Universities from Junior High Schools on Locus of Control.

In this study, it is found that the teacher support of students in free six-year normal universities from junior high schools has a significantly positive influence on the locus of control. Cao and Zeng (2008) found that when students get more social support (such as getting praise from teachers, caring from relatives and help from classmates), they think that the praise and help they get are related to their efforts, which leads to positive self-evaluation. This positive self-evaluation is a manifestation of internal control. As a part of social support, the influence of teacher support on locus of control can arouse students' positive self-evaluation and promote their learning adaptation.

In addition, according to the ternary learning theory of Bandura (1986) originated from the social learning theory, psychological function, from the perspective of social learning, is the continuous interaction among the three dimensions of environment, people and behavior, and any dimension is not affected by any single dimension, but the influence among the three factors may occur simultaneously. This also indicates that behavior is the result of the interaction between determinants of an individual and the environment. In other words, the environment will interact with the individuals' cognition to affect the process of psychological behavior (Yang , 2006). Hence, the results of this study are in concert with the social learning theory of Bandura (1977, 1986).

5.4 The Impact of Locus of Control of Students in Free Six-year Normal Universities from Junior High Schools in Learning Adaptation.

This study finds that there is a positive relationship between the locus of control of students in free six-year normal universities from junior high schools and the learning adaptation. Compas, Connorsmith, Saltzman, Thomsen and Wadsworth (2001) believed that school adaptation is one of the most important forms of adaptation of students, and is closely related to psychological health. Yu (2007) found that school maladaptation tends to cause psychological problems such as self-abasement and loneliness. In various studies on school adaptation, personality factor is a variable greatly concerned with scholars. Previous studies have found that personality factor is an important factor that affects school adaptation, and can be used to effectively predict the learning adaptation of freshmen. Locus of control is an important personality variable for predicting learning adaptation, and internal control has a positive influence on learning adaptation (BAR-TAL, KFIR, BAR-ZOHAR & Chen, 1980; Twenge, Zhang & Im, 2004). There is a systematic relationship between the internal control of locus of control and the behavior which may improve learning adaptation (BAR-TAL & BAR-ZOHAR, 1977). Rotter (1975) found that locus of control is one of the important psychological factors that affect learning adaptation, which refers to the individuals' cognition or orientation of their behavior and responsibility for behavioral outcome. Huang *et al.*, (2011) found that: School adaptation of college students is closely related to their self-esteem and locus of control. The locus of control has a significant predictive effect on school adaptation, and the more students tend to internal control, the better they adapt to school. Xu (2005) found that the trait anxiety of college students is in direct proportional to their external control, and is inversely proportional to their learning adaptation. On the contrary, universities students' sense of happiness is positively related to their learning adaptation.

Bandura (1977) emphasized that: only environmental factors cannot decide people's learning behavior; in addition to environmental factors, one's own cognition of people, thing and object in the environment is an important factor in learning

behavior. In the learning environment, environmental factors, one's cognition of the environment and personal behavior interact with each other, and finally the behavior learned is determined. Hence, the results of this study are in concert with the social learning theory of Bandura (1977).

5.5 Partial Mediating Effect of Locus of Control of Students in Free Six-year Normal Universities from Junior High Schools in the Influence of Teacher Support on Learning Adaptation.

Through statistical analysis, this study finds that the locus of control has a mediating effect in the influence of teacher support perceived by students in free six-year normal universities from junior high schools on learning adaptation. Among the studies on locus of control as a mediating variable, Nehra (2018) found that the tendency of internal control plays as a partial mediator in personality integration and self-betrayal. Toni, Bergeman *et al.,* (1999) indicated that locus of control plays a role of mediator between social support and subjective well-being.

In addition, according to the social learning theory of Bandura (1977, 1986), one's different expectations for behavior or result is partially determined by his or her self-efficacy, and the self-motivated behavior can be changed to influence the actual dynamic psychological process in the activity. Phillips and Gully (1997) suggested that there is a positive relationship between locus of control and self-efficacy, and internals have stronger self-efficacy than externals. The present study finds that locus of control and self-efficacy, as one's characteristics, have the equal status in the social learning theory of Bandura (1977, 1986). The external environment (teacher support) perceived by students in free six-year normal universities from junior high schools will impose influence on the individual's behavior (e.g., learning adaptation) through individual characteristics (locus of control). Hence, the results of this study are in concert with the social learning theory of Bandura (1977, 1986).

5.6 Moderating Effect of Hardiness of Students in Free six-Year Normal Universities from Junior High Schools in the Influence of Teacher Support on Learning Adaptation.

Through statistical analysis, this study finds that hardiness plays a role of moderator between teacher support perceived by students in free six-year normal universities from junior high schools and the learning adaptation. Students with strong hardiness have better learning adaptation than those with poor hardiness, which is more obvious with the improvement of students' hardiness. The reasons may be that: Students who perceived teacher support have a more optimistic evaluation of their learning ability and have more confidence in learning, which will increase their enthusiasm for learning and participating in learning activities, so that they experience more success. The results show that there is a significant positive correlation between the total score of hardiness and that of learning adaptation. Individuals with strong hardiness can deal with external stress more calmly and actively seek external support to get more social resources; in addition, individuals with high scores of hardiness will adjust themselves to adapt to the outside world when facing different setbacks or external stresses and unfamiliar environments, and they will make unremitting efforts to achieve their goals without flinching or compromising. During university, the primary task of students is to gradually adapt to and integrate into the society. Confronting the future, they shall begin to consider their personal development, make personal career planning and adapt to new learning atmosphere.

The research result is that: hardiness is a moderator between teacher support and learning adaptation, which is in agreement with other studies. Lu (2008) found that hardiness can alleviate the negative impact of stress on mental and physical health, and is a moderator in the relationship between stress and psychological symptoms. Sun and Fu (2016) introduced hardiness into the study of school adaptation, and used it as a regulating variable to study its relationship with universites students' stress and school adaptation.

CHAPTER 6

RESEARCH CONCLUSION、LIMINTATIONS AND SUGGESTIONS

Based on Chapter IV (Research Results) and Chapter V (Discussion), the research conclusions, limitations and suggestions are discussed in this chapter in three sections. The first section is research conclusion of this study; the second section is about the limitations of the study; the third section puts forward some suggestions for parents, school-related educational institutions and future studies with regard to the conclusions and limitations of the study. This study aims to provide references for the future teaching and mental health counseling of pilot colleges and universities enrolling students in free six-year normal universities from junior high schools on the one hand, and indicate the direction for related research fields in the future.

6.1 Research Conclusion

The conclusions of this study showed：

Different background variables (sex, grade, only child or not, school locus of controlation and origin of students) have significant differences in teacher support, locus of control, hardiness and learninsenior adaptation ,The perception of teacher support of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on learning adaptation, The perception of teacher support of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on locus of control,The locus of control of students in free six-year normal universities from junior high schools in Hunan, China has a significant positive effect on learning adaptation,The locus of control of students in free six-year normal universities from junior high schools in Hunan, China plays a mediator role in the effect of teacher support on learning adaptation,The hardiness of students in free six-year normal universities from junior high schools in Hunan, China plays a moderator role in the effect ofteacher support on learning adaptation.

6.2 Limitations

Although some expected results have been achieved, there are still some deficiencies due to the limitations of research skills and level. The following part summarizes the limitations of this study from the perspectives of object, method and content of the study.

6.2.1 Limitation of Study Sample

In terms of sampling, limited by the time and ability of researchers, the study only takes students in free six-year normal universities from junior high schools of three colleges and universities in Hunan as the object, while those students in other provinces are not involved, so the interpretation and induction of the study results are limited.

6.2.2 Limitation of Study Variables

For the students themselves, various factors may affect their learning adaptation according to researches and working practices (Jin, 2020). However, this study is confined to three influencing factors, including teacher support, locus of control and hardiness. Through literature search, there are: studies on the relationship between life stress and learning adaptation (Tian , 2019; Ye , 2016); study on the relationship between active coping style, life stress and learning adaptation (Tian , 2020);

study on the relationship between life stress, psychological resilience and learning adaptation (Zhang, 2016); study on the relationship between college students' adaptability and adult attachment (Zhou , Hu and Chen, 2019); close relationship between learning adaptation and learning burnout (Chen, Pan, 2019); influence of academic self-efficacy on learning adaptation (Chemers, Hun & Garcia, 2001; Li & Yang, 2018;); influence of proactive personality on learning adaptation (Liang & Chen , 2018; Ma , 2017; Wang , Lei & Wang , 2016; Wang & Guan, 2018); study on college students' learning adaptability its relationship with personality traits and social support (Xu , *et al*., 2005); relationship between learning adaptability, general self-efficacy and social support of college students (Huang & Xu, 2004); study on relationship between learning adaptation and mental health of college students (Wang & Li , 2015). Therefore, the above factors such as life stress, active coping style, psychological resilience, adult attachment, learning burnout, academic self-efficacy, proactive personality and mental health can be taken as variables in the future studies.

6.2.3 Limitation of Research Methods

This study is carried by way of self-stated questionnaire, and the data of students in free six-year normal universities from junior high schools is collected in terms of personal background variables, teacher support, learning adaptation, locus of control and hardiness. However, whether the subjects can really express and reflect the truth will have a biased influence on the correctness of the study results. Besides, the quantitative method only uses data results for hypothesis inference, and there is a lack of theoretical inference by detailed study in qualitative method. If the qualitative method (e.g., interviewing with teachers and students) can be adopted simultaneously, the study result will be more objective and profound in terms of its interpretation and inference.

6.3 Suggestions

6.3.1 Suggestions for teacher

This study puts forward suggestions for teacher that teacher support has a great influence on the learning adaptation of students in free six-year normal universities from junior high schools, and can effectively prevent various maladaptation issues in learning; in addition, through the analysis of individual characteristics of students with different personality, teacher support helps students to recognize their personality traits, strengthen the communication with teachers and reduce the behavior of learning maladaptation in the learning process.

6.3.2 Suggestions for Family

This study puts forward suggestions for parents that students in free six-year normal universities from junior high schools still needs care from and communication with parents and teachers. Parents should enhance communication with the children and pay attention to their daily study and life at school. Parents should care the children more so that they can perceive more care. When the children encounter learning dilemma in higher vocational colleges, parents should give more encouragement and praise to increase their confidence. At the same time, the counselor should communicate with the children more frequently to know their performance in school all the time. This will help them to more effectively regulate their behavior and mood, and improve their ability to adapt to environmental changes. Xu *et al.,* (2005) constructed a social support network for college students with family and school as the core and a school support system with teacher-student relationship and classmate relationship as the core, which have a positive role in college students' adaptation to or even competence for school life.

6.3.3 Suggestions for Related Educational Units

According to the discussion and limitations of this study, the education of students in free six-year normal universities from junior high schools is taken as the reference for relevant educational institutions and teachers:

In this study, it is found that teacher support of students in free six-year normal universities from junior high schools can be used to predict the locus of control and learning adaptation. In other words, the higher the level of teacher support perceived by the students, the better the learning adaptation of both internals and externals.

Gardner (1983) argued that human intelligence is diversified, and everyone has different intelligence advantages.

In usual teaching and communication with students, teachers or counselors should have a deep understanding of students' characteristics and potential, explore their learning advantages, give full play to their strengths appropriately, and increase their chances of success and self-confidence. Teachers can combine different intelligence advantages with the active cooperative learning mode in order to coordinate and influence each other, so that students' ability and learning effect can be improved together, thus enhancing their confidence in learning. Furthermore, in normal teaching, students can be guided to complete certain difficult learning tasks through their own efforts, so that they have a successful experience, thus cultivating the self-confidence of students in free six-year normal universities from junior high schools, which is conducive to learning adaptation.

Schools should lay emphasis on the role of teachers in the management and teaching of students in free six-year normal universities from junior high schools. In China's education, class teachers are the main body of class management in primary and secondary schools, but in universities, counselors and class teachers manage classes together, and the power of class teachers is weakening. This study finds that in the management and teaching of students in free six-year normal universities from junior high schools, the management methods of other undergraduate colleges cannot be directly adopted, but should be based on the age, psychology and physiology of these students. According to this study, a number of college students cannot fully adapt to or even become competent for learning in university. In view of the fact that the prominent feature of learning in university is autonomous learning, it has higher requirements for students' learning adaptation. Therefore, only when college students have strong learning adaptation, can they complete their studies in college and finally produce the awareness and ability of autonomous learning. Obviously, the improvement of contemporary college students in learning adaptation still requires lots of work. On the one hand, college students themselves should gradually learn to consciously stimulate learning motivation, reasonably formulate learning plans and rationally use learning methods to gradually improve their learning adaptation; on the other hand, schools and teachers should emphasize the guidance of universities students' learning adaptation. They should not only guide and interfere with universities students' learning adaptation at the beginning of entering the school, but also teach them to master rational and effective learning methods and reasonably integrate the relationship between short-term and long-term goals.

Schools should pay attention to the cultivation and improvement of hardiness, and actively explore ways to cultivate hardiness, such as increasing physical exercise, carrying out frustration education, conducting stress training, organizing group psychology counseling, etc. (Sun & Fu , 2015).

It is suggested that normal colleges and universities that cultivate free normal students should take the initiative to improve education and teaching measures, deepen the reform of educational pattern, attach importance to curriculum content setting and create a good learning atmosphere, and also adopt appropriate incentive mechanisms, so as to make the training of free normal students more targeted, professional and comprehensive.

6.3.4 Suggestions for Further Research

According to the discussion and limitations of this study, this paper puts forward suggestions from the perspectives of object, method and content of the study to provide references for future academic research:

A. Expand the research object and scope

In this study, the objects are students in free six-year normal universities from junior high schools in Hunan, China, while Hong, Huang and Qiu (2014) believed that learners from different places will have different personalities and local backgrounds, which will affect their goals and beliefs. Therefore, if the research scope in the future can be expanded to students in free six-year normal universities from junior high schools in other provinces and municipalities in China, such as Beijing, Guangdong, Shandong, the number of research samples is increased to collect more comprehensive data. Furthermore, it will be more meaningful to study students in free six-year normal universities from junior high schools at different levels.

B. Incorporate other study variables related to learning adaptation

This study is a cross-sectional study, which is difficult to define the causal relationship between variables in a strict significance, so in-depth study should be carried out in combination with longitudinal studies.

In the future, researchers are suggested to include factors such as life stress, active coping style, psychological

resilience, adult attachment, learning burnout, academic self-efficacy, proactive personality and mental health into the study as variables, and to reorganize and sort out the relationship between these variables, so as to obtain more new findings.

C. Mixed-methods research

Mixed-methods research has received more and more attention and application in social science research. advocated that researchers can clarify subtle differences and interactively verify research findings by using a mixed method that combines qualitative and quantitative methods. argued that quantitative research can only measure some superficial and quantifiable parts of things, but cannot obtain specific content. What is measured is only a point in time, and the process of event development cannot be seen; only the previous theory is verified, but the perspectives and views of the parties concerned cannot be confirmed; the results can only explain the average case, but cannot take into account special circumstances; the control of variables is difficult, so that the naturalness of the research scenario cannot be easily achieved. As for the advantages of qualitative research, it is able to describe and analyze psychological phenomena on a micro level, and to understand the way and point of view from the perspective of the parties concerned; the life events are studied under a natural setting to understand the dynamic process of event development; theories are established by the method of induction to innovate theories. These advantages seem to be tailored to make up for the deficiencies of quantitative research. Meanwhile, some deficiencies of qualitative research are just made up for by the advantages of quantitative research, such as inability to study large samples or popularize the results, lack of unified procedures, and so on, all of which are exactly the advantages of quantitative research. Therefore, in the social sciences, if we can combine these two methods very well, we can systematically and comprehensively study social psychological phenomena, and at the same time, these two methods exactly embody the unity of scientific and humanistic methods. In the future, it is suggested to adopt the qualitative method (e.g., interviewing with teachers and students) simultaneously, so that the study result will be more objective and profound in terms of its interpretation and inference. Combined with interviews, case studies and longitudinal surveys, we can investigate the status and influencing factors of learned helplessness of in free six-year normal universities from junior high schools college students in detail, systematically and comprehensively, and make up for the shortcomings of cross-sectional surveys and quantitative statistical methods in this study through longitudinal and in-depth quantitative and qualitative exploration.

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Appendix I

Respected Ph.D. advisor, professor,

Hello!

JIANYONG-CHEN , a doctoral candidate in the Department of Educational Management and Philosophy of our school (Dhurakij Pundit University China-Asean International College (CAIC) is conducting his dissertation research entitled A Study on the Relationship between Perceived Teacher Support and Learning Adaption of Chinese Six-year Normal Students: Taking Locus of Control as Mediator and Hardiness as Moderator. The student has already finished the first draft of the questionnaire. I have great admiration for your professionalism, dedication to education, salutary influence, and the enthusiasm for guiding and supporting your pupil, therefore, I would like to send you the questionnaire and it would be nice if you could fill in the questionnaire.

The questionnaire was formulated based on the purpose of the research, please help me evaluate the applicableness of each question, and check with a [√] in the □ following the three options including fit, unfit and fit after revision. If there is any amendment, please write down in the column of suggestion for revision or directly modify the questions.

Please read the instruction for filling the expert validity before evaluating this questionnaire.

Due to the limited time, at your convenience, I would really appreciate if you finish it within a week and send it back to the researcher.

With your assistance, this student's research will be successfully completed and teacher's positive influence will be exerted better. Sincerely thanks for your assistance and support, and your efforts and time are very much appreciated!

With very best wishes and much gratitude!

Yours truly

PHD JIANYONG-CHEN

January 20, 2020

The questionnaire is as follows:

I. Subject Questionnaire

This is a questionnaire about how to explain why something happens. Just like other questionnaires, answers to questions in the question won't be judged to be right or wrong. Carefully read questions and add "√" to the corresponding position in light of your own situation with 1= "Strongly disagree", 2= "Basically disagree", 3="Agree", 4=="Somewhat agree" and 5= "Totally agree".

Part I: Teacher Support Scale

Dimensions	Item content	Suggestions on revision
Learning Support	1. When you answer the question, the teacher will tell me whether I answer it rightly or wrongly	
	2. The teacher will praise me when I behave myself in class	
	3. The teacher hints me to answer the question with encouraging eyes	
	4. The teacher deems that I'm always able to complete difficult assignment or task	
	5. The teacher always criticizes me when I fail to answer the question or give a wrong answer to the question	
	6. The teacher always support me to participate in various activities and competitions	
	7. The teacher often repeatedly explains the question asked to me when I fail to answer it	
	8. When a wrong answer is given, the teacher will explain the cause of the wrong answer and how to make correction to me	
	9. If I fail to answer the question, the teacher will often provide me with prompt until I can answer it	
Emotion Support	1. The teacher is kind to me	
	2. The teacher looks me in the eye when I answer the question	
	3. My homework is usually commended by the teacher	
	4. The teacher asks me to answer the question in class	
	5. The teacher looks at me with smile on his/her face when I answer the question	
	6.The teacher often encourages me in the learning and life	
Capacity Support	1. The teacher puts forward strict requirements against me in the learning and life	
	2. The teacher often asks me to take charge of class issues	
	3. The teacher often recommends me to take part in all kinds of activities or competitions	
	4. I often feel that the teacher gives me high expectations	

Part II：Learning Adaptation Scale

Dimensions	Item content	Suggestions on revision
Learning motivation	1. I feel I adapt to the university learning 2. I have my own learning method and plan and can put them into practice 3. I feel I lost the goal of learning. 4. I become lazy obviously after attending university 5. I cannot arrange the time without urgency of learning 6. My learning objective becomes more definite after attending university 7. My learning is very effective 8. I feel the lack of my knowledge, so I study harder	
Teaching mode	1. The university teacher's teaching method always makes me uncomfortable 2. I don't adapt to the university timetable 3. I neglect my studies because of adverse opinions regarding college students in the society (such as "uselessness of getting schooling") 4. I feel uncomfortable because the university learning is out of touch with middle school 5. The management style against students in the university is worse than that of the middle school 6. I catch many bad habits after attending university 7. I often cherish the memory of previous classmates and things and cannot help myself	
Learning ability	1. My way of thinking becomes more mature after attending university 2. I think that I become more flexible after attending university 3. My independence is remarkably strengthened after attending university 4. I think I have a wider understanding about the world with clearer future after attending university 5. I always make unremitting efforts to improve myself due to fierce competition in the university 6. My practical ability is markedly enhanced after attending university	

Part II：Learning Adaptation Scale (Continue)

Dimensions	Item content	Suggestions on revision
Learning attitude	1. My learning initiative is affected because I'm not interested in the professional courses. 2. The university learning relies on personal interest other than method. 3. I study only for credits and diploma. 4.Why take it too seriously! You will adapt to the university learning if you turn a blind eye to it	
Environmental factors	1. The family economic conditions have a big influence on learning. 2. The college living conditions have a big influence on learning. 3. The employment status in the future influences my learning a lot. 4. The interpersonal relationship in university has a great influence on learning.	

Part III: LOC Scale

Dimensions	Item content	Suggestions on revision
Internal focus of control	1. I'm chosen as class leader due to my own ability	
	2. I'm almost sure I can execute it when I make a plan	
	3. I often discover those to occur are meant to happen	
	4. I can totally control everything in my life	
	5. I can protect my own interests generally	
	6. I get what I want usually because I work hard for it	
	7. My life is determined by my behavior	
Other influential person	1. Although my ability is good enough, I won't be entrusted with an important post if I don't draw persons in high position over to my side	
	2. How do I determine the number of friends I have.	
	3. In case of the conflict between influential groups, people like me can rarely have a chance to protect own personal interests	
	4. In my opinion, making a plan early isn't always wise because many things are proven to depend on luck	
	5. I need to play up to someone more powerful than me for the sake of getting what I want	
	6. If an important figure dislike me, I may not make too many friends	
	7. Whether a car accident happens to me depends on other driver	
	8. To implement my plan, I'm sure such plan meets the taste of persons more powerful than me	
	9. No matter more or less, the number of friends I have mainly depends on fate	
Opportunities	1. My life is controlled by accidents to a great extent	
	2. I feel the thing happening in my life is controlled by the influential person	
	3. Whether a car accident occurs to me relies on my cycling technology	
	4. I cannot protect my own interests in case of encountering unlucky things	
	5. I get what I pursue often because I'm lucky	
	6. My life is often controlled by influential persons	
	7. Whether a car accident happens to me mainly depends on luck	
	8. Whether I can be an official depends on whether I'm lucky enough and in the right position at the right time	

Part IV: Hardiness Scale

Dimensions	Item content	Suggestions on revision
Control	1. I will try every means to find the solution for the difficulty	
	2. I will do my best to turn the scale in case of encountering the wrong end of the stick	
	3. I can still keep my spirits up even under bad circumstances	
	4. I will try my best to find the cause of the problem	
	5. I will try to calm down the person who is angry with me	
	6. I can always get my ideas into shape quickly regardless of how complicated the problem is	
	7. I often regard the difficult in life as challenge other than threat	
	8. I will keep my head in case of being criticized	
Challenges	1. The change in life and work usually makes me feel excited	
	2. I like to try something new and exciting	
	3. I prefer challenging and changeable jobs	
	4. I prefer to take on important work	
	5. I'm motivated to study by breaking the routine	
	6. I'm willing to give up the stability of life to get the opportunity of facing major challenges	
	7. Embracing new situations is an important thing in my life	
Involvement	1. Work and learning will give me fun	
	2. I look forward to working/studying almost every day	
	3. Doing things actively and diligently makes me excited	
	4. Busy pace of life makes me feel fulfilled	
	5. I'm always passionate about working	
	6.I do simple things very dedicating	
Resilience	1. I can always achieve the goal by my own efforts	
	2. I can insist on doing a difficult thing as long as it is meaningful	
	3. I am not afraid of any difficulty if I decide to do it	
	4. I won't easily give up my own ideal and pursuit	
	5. I can overcome any difficulty as long as I make great efforts	
	6. I won't give up easily even though encountering the obstacle if the goal is confirmed	

Reviewed by:

Serving school / tile:

Appendix II: Pre- test Questionnaire

My dear students,

Greeting! A questionnaire about your university life is provided to know some of your feelings in life. The answer won't be judged to be right or wrong. Answer the question as per your physical truth. Our questionnaire is anonymous with the result used for academic research. Don't worry but answer it truthfully. Thank you for your cooperation!

PHD Class of Education Management Department of Dhurakij Pundit University

Advising professor:
Dr JIANHAO- HUANG
PHD JIANYONG-CHEN
Yours Truly
E-mail: 1151923468@qq.com

A. Basic Information on the Individual

1. Sex: Female ( ) Male ( )
2. Grade: Grade one ( ) Grade two ( ) Grade three ( ) Grade four ( ) Grade five ( ) Grade six ( )
3. Only child or not: Yes ( ) No ( )
4. School Location : Provincial Capital ( ) Local university ( )
5. Origin of Students: Rural ( ) city ( )

B. Subject Questionnaire

This is a questionnaire about how to explain why something happens. Just like other questionnaires, answers to questions in the question won't be judged to be right or wrong. Carefully read questions and add "√" to the corresponding position in light of your own situation with 1= "Strongly disagree", 2= "Basically disagree", 3="Agree", 4=="Somewhat agree" and 5= "Totally agree".

Part I: Teacher Support Scale

Teacher Support	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
1. The teacher puts forward strict requirements against me in the learning and life	1	2	3	4	5
2. The teacher often asks me to take charge of class issues	1	2	3	4	5
3. The teacher is kind to me	1	2	3	4	5
4. When you answer the question, the teacher will tell me whether I answer it rightly or wrongly	1	2	3	4	5
5. The teacher often recommends me to take part in all kinds of activities or competitions	1	2	3	4	5
6. The teacher will praise me when I behave myself in class	1	2	3	4	5
7. The teacher hints me to answer the question with encouraging eyes	1	2	3	4	5
8. The teacher deems that I'm always able to complete difficult assignment or task	1	2	3	4	5
9. The teacher looks me in the eye when I answer the question	1	2	3	4	5
10. My homework is usually commended by the teacher	1	2	3	4	5
11. The teacher always criticizes me when I fail to answer the question or give a wrong answer to the question	1	2	3	4	5
12. The teacher always support me to participate in various activities and competitions	1	2	3	4	5
13. The teacher asks me to answer the question in class	1	2	3	4	5
14. The teacher often repeatedly explains the question asked to me when I fail to answer it	1	2	3	4	5
15. The teacher looks at me with smile on his/her face when I answer the question	1	2	3	4	5
16. The teacher often encourages me in the learning and life.	1	2	3	4	5
17. I often feel that the teacher gives me high expectations	1	2	3	4	5
18. When a wrong answer is given, the teacher will explain the cause of the wrong answer and how to make correction to me	1	2	3	4	5
19. If I fail to answer the question, the teacher will often provide me with prompt until I can answer it	1	2	3	4	5

Part II: Learning Adaptation Scale

Learning Adaptation	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
1. I feel I adapt to the university learning.	1	2	3	4	5
2. The university teacher's teaching method always makes me uncomfortable.	1	2	3	4	5
3. I have my own learning method and plan and can put them into practice.	1	2	3	4	5
4. I don't adapt to the university timetable.	1	2	3	4	5
5. I feel I lost the goal of learning.	1	2	3	4	5
6. My way of thinking becomes more mature after attending university.	1	2	3	4	5
7. I think that I become more flexible after attending university.	1	2	3	4	5
8. My learning initiative is affected because I'm not interested in the professional courses.	1	2	3	4	5
9. The family economic conditions have a big influence on learning.	1	2	3	4	5
10. My independence is remarkably strengthened after attending university.	1	2	3	4	5
11. I neglect my studies because of adverse opinions regarding college students in the society (such as "uselessness of getting schooling").	1	2	3	4	5
12. I become lazy obviously after attending university.	1	2	3	4	5
13. I think I have a wider understanding about the world with clearer future after attending university.	1	2	3	4	5
14. The university learning relies on personal interest other than method.	1	2	3	4	5
15. I always make unremitting efforts to improve myself due to fierce competition in the university.	1	2	3	4	5
16. I feel uncomfortable because the university learning is out of touch with middle school.	1	2	3	4	5
17. The management style against students in the university is worse than that of the middle school.	1	2	3	4	5
18. I catch many bad habits after attending university.	1	2	3	4	5
19. I study only for credits and diploma.	1	2	3	4	5
20. I often cherish the memory of previous classmates and things and cannot help myself.	1	2	3	4	5

Part II: Learning Adaptation Scale (Continue)

College students' LA	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
21. My practical ability is markedly enhanced after attending university.	1	2	3	4	5
22. Why take it too seriously! You will adapt to the university learning if you turn a blind eye to it.	1	2	3	4	5
23. The college living conditions have a big influence on learning.	1	2	3	4	5
24. The employment status in the future influences my learning a lot.	1	2	3	4	5
25. The interpersonal relationship in university has a great influence on learning.	1	2	3	4	5
26. I cannot arrange the time without urgency of learning	1	2	3	4	5
27. My learning objective becomes more definite after attending university.	1	2	3	4	5
28. My learning is very effective.	1	2	3	4	5
29. I feel the lack of my knowledge, so I study harder	1	2	3	4	5

Part III: Locus of Control Scale

LOC	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
1. I'm chosen as class leader due to my own ability	1	2	3	4	5
2. My life is controlled by accidents to a great extent	1	2	3	4	5
3. I feel the thing happening in my life is controlled by the influential person	1	2	3	4	5
4. Whether a car accident occurs to me relies on my cycling technology	1	2	3	4	5
5. I'm almost sure I can execute it when I make a plan	1	2	3	4	5
6. I cannot protect my own interests in case of encountering unlucky things	1	2	3	4	5
7. I get what I pursue often because I'm lucky	1	2	3	4	5
8. Although my ability is good enough, I won't be entrusted with an important post if I don't draw persons in high position over to my side	1	2	3	4	5
9. The number of my friends depends on my moral quality	1	2	3	4	5
10. I often discover those to occur are meant to happen	1	2	3	4	5
11. My life is often controlled by influential persons	1	2	3	4	5
12. Whether a car accident happens to me mainly depends on luck	1	2	3	4	5
13. In case of the conflict between influential groups, people like me can rarely have a chance to protect own personal interests	1	2	3	4	5
14. In my opinion, making a plan early isn't always wise because many things are proven to depend on luck	1	2	3	4	5
15. I need to play up to someone more powerful than me for the sake of getting what I want	1	2	3	4	5
16. Whether I can be an official depends on whether I'm lucky enough and in the right position at the right time	1	2	3	4	5

Part III: LOC Scale (Continue)

LOC	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
16. Whether I can be an official depends on whether I'm lucky enough and in the right position at the right time	1	2	3	4	5
17. If an important figure dislike me, I may not make too many friends	1	2	3	4	5
18. I can totally control everything in my life	1	2	3	4	5
19. I can protect my own interests generally	1	2	3	4	5
20. Whether a car accident happens to me depends on other driver	1	2	3	4	5
21. I get what I want usually because I work hard for it	1	2	3	4	5
22. To implement my plan, I'm sure such plan meets the taste of persons more powerful than me	1	2	3	4	5
23. My life is determined by my behavior.	1	2	3	4	5
24 The number of my friends mainly relies on luck	1	2	3	4	5

Part IV: Hardiness Scale

Hardiness	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
1. I can always achieve the goal by my own efforts	1	2	3	4	5
2. The change in life and work usually makes me feel excited	1	2	3	4	5
3. I like to try something new and exciting	1	2	3	4	5
4. I prefer challenging and changeable jobs	1	2	3	4	5
5. I can insist on doing a difficult thing as long as it is meaningful	1	2	3	4	5
6. Work and learning will give me fun	1	2	3	4	5
7. I look forward to working/studying almost every day	1	2	3	4	5
8. I will try every means to find the solution for the difficulty	1	2	3	4	5
9. Doing things actively and diligently makes me excited	1	2	3	4	5
10. I prefer to take on important work	1	2	3	4	5
11. Busy pace of life makes me feel fulfilled	1	2	3	4	5
12. I am not afraid of any difficulty if I decide to do it	1	2	3	4	5
13. I won't easily give up my own ideal and pursuit	1	2	3	4	5
14. I will do my best to turn the scale in case of encountering the wrong end of the stick	1	2	3	4	5
15. I can still keep my spirits up even under bad circumstances	1	2	3	4	5
16. I'm always passionate about working	1	2	3	4	5
17. I do simple things very dedicatedly	1	2	3	4	5
18. I'm motivated to study by breaking the routine	1	2	3	4	5

Part IV: Hardiness Scale (Continue)

Hardiness	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
19. I can overcome any difficulty as long as I make great efforts	1	2	3	4	5
20. I will try my best to find the cause of the problem	1	2	3	4	5
21. I will try to calm down the person who is angry with me	1	2	3	4	5
22. I can always get my ideas into shape quickly regardless of how complicated the problem is	1	2	3	4	5
23. I won't give up easily even though encountering the obstacle if the goal is confirmed	1	2	3	4	5
24. I'm willing to give up the stability of life to get the opportunity of facing major challenges	1	2	3	4	5
25. Embracing new situations is an important thing in my life	1	2	3	4	5
26. I often regard the difficult in life as challenge other than threat	1	2	3	4	5
27. I will keep my head in case of being criticized	1	2	3	4	5

My dear students, The questionnaire is over. Check whether the omission happens to the questionnaire and thank you a lot for your contributions to the research!

Appendix III: Formal- test Questionnaire

My dear students,

Greeting! A questionnaire about your university life is provided to know some of your feelings in life. The answer won't be judged to be right or wrong. Answer the question as per your physical truth. Our questionnaire is anonymous with the result used for academic research. Don't worry but answer it truthfully. Thank you for your cooperation!

PHD Class of Education Management Department of Dhurakij Pundit University

Advising professor:
Dr JIANHAO-HUANG
PHD JIANYONG-CHEN
Yours Truly
E-mail: 1151923468@qq.com

A. Basic Information on the Individual

1. Sex: Female ( ) Male ( )
2. Grade: Grade one ( ) Grade two ( ) Grade three ( ) Grade four ( ) Grade five ( ) Grade six ( )
3. Only child or not: Yes ( ) No ( )
4. School Location : Provincial Capital ( ) Local university ( )
5. Origin of Students: Rural ( ) city ( )

B. Subject Questionnaire

This is a questionnaire about how to explain why something happens. Just like other questionnaires, answers to questions in the question won't be judged to be right or wrong. Carefully read questions and add "√" to the corresponding position in light of your own situation with 1= "Strongly disagree", 2= "Basically disagree", 3="Agree", 4=="Somewhat agree" and 5= "Totally agree".

Part I: Teacher Support Scale

Dimensions	Item content	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
Learning Support	1. When you answer the question, the teacher will tell me whether I answer it rightly or wrongly	1	2	3	4	5
	2. The teacher will praise me when I behave myself in class	1	2	3	4	5
	3. The teacher hints me to answer the question with encouraging eyes	1	2	3	4	5
	4. The teacher deems that I'm always able to complete difficult assignment or task	1	2	3	4	5
	5. The teacher always criticizes me when I fail to answer the question or give a wrong answer to the question	1	2	3	4	5
	6. The teacher always support me to participate in various activities and competitions	1	2	3	4	5
	7. The teacher often repeatedly explains the question asked to me when I fail to answer it	1	2	3	4	5
Emotion Support	1. The teacher is kind to me	1	2	3	4	5
	2. The teacher looks me in the eye when I answer the question	1	2	3	4	5
	3. My homework is usually commended by the teacher	1	2	3	4	5
	4. The teacher asks me to answer the question in class	1	2	3	4	5
	5. The teacher looks at me with smile on his/her face when I answer the question	1	2	3	4	5
	6. The teacher often encourages me in the learning and life.	1	2	3	4	5

Part I: Teacher Support Scale（continue）

Dimensions	Item content	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
Capacity Support	1. The teacher puts forward strict requirements against me in the learning and life	1	2	3	4	5
	2. The teacher often asks me to take charge of class issues	1	2	3	4	5
	3. The teacher often recommends me to take part in all kinds of activities or competitions	1	2	3	4	5
	4. I often feel that the teacher gives me high expectations	1	2	3	4	5

Part II：Learning Adaptation Scale

Dimensions	Item content	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
Learning motivation	1. I feel I adapt to the university learning.	1	2	3	4	5
	2. I have my own learning method and plan and can put them into practice.	1	2	3	4	5
	3. I feel I lost the goal of learning.	1	2	3	4	5
	4. I become lazy obviously after attending university.	1	2	3	4	5
	5. I cannot arrange the time without urgency of learning	1	2	3	4	5
	6. My learning objective becomes more definite after attending university.	1	2	3	4	5
	7. My learning is very effective.	1	2	3	4	5
	8. I feel the lack of my knowledge, so I study harder	1	2	3	4	5
Teaching mode	1. The university teacher's teaching method always makes me uncomfortable.	1	2	3	4	5
	2. I don't adapt to the university timetable.	1	2	3	4	5
	3. I neglect my studies because of adverse opinions regarding college students in the society (such as "uselessness of getting schooling").	1	2	3	4	5
	4. I feel uncomfortable because the university learning is out of touch with middle school.	1	2	3	4	5
	5. The management style against students in the university is worse than that of the middle school.	1	2	3	4	5
	6. I catch many bad habits after attending university.	1	2	3	4	5

Part II：Learning Adaptation Scale（continue）

Dimensions	Item content	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
	7. I often cherish the memory of previous classmates and things and cannot help myself.	1	2	3	4	5
Learning ability	1. My way of thinking becomes more mature after attending university.	1	2	3	4	5
	2. I think that I become more flexible after attending university.	1	2	3	4	5
	3. My independence is remarkably strengthened after attending university.	1	2	3	4	5
	4. I think I have a wider understanding about the world with clearer future after attending university.	1	2	3	4	5
	5. I always make unremitting efforts to improve myself due to fierce competition in the university.	1	2	3	4	5
	6. My practical ability is markedly enhanced after attending university.	1	2	3	4	5

Part II：Learning Adaptation Scale (Continue)

Dimensions	Item content	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
Learning attitude	1. My learning initiative is affected because I'm not interested in the professional courses.	1	2	3	4	5
	2. The university learning relies on personal interest other than method.	1	2	3	4	5
	3. I study only for credits and diploma.	1	2	3	4	5
	4. Why take it too seriously! You will adapt to the university learning if you turn a blind eye to it.	1	2	3	4	5
Environmental factors	1. The family economic conditions have a big influence on learning.	1	2	3	4	5
	2. The college living conditions have a big influence on learning.	1	2	3	4	5
	3. The employment status in the future influences my learning a lot.	1	2	3	4	5
	4. The interpersonal relationship in university has a great influence on learning.	1	2	3	4	5

Part III: LOC Scale

Dimensions	Item content	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
Internal focus of control	1. I'm chosen as class leader due to my own ability	1	2	3	4	5
	2. I'm almost sure I can execute it when I make a plan	1	2	3	4	5
	3. I often discover those to occur are meant to happen	1	2	3	4	5
	4. I can totally control everything in my life	1	2	3	4	5
	5. I can protect my own interests generally	1	2	3	4	5
	6. I get what I want usually because I work hard for it	1	2	3	4	5
	7. My life is determined by my behavior.	1	2	3	4	5
Other influential person	1. Although my ability is good enough, I won't be entrusted with an important post if I don't draw persons in high position over to my side	1	2	3	4	5
	2. How do I determine the number of friends I have.	1	2	3	4	5
	3. In case of the conflict between influential groups, people like me can rarely have a chance to protect own personal interests	1	2	3	4	5
	4. In my opinion, making a plan early isn't always wise because many things are proven to depend on luck	1	2	3	4	5
	5. I need to play up to someone more powerful than me for the sake of getting what I want	1	2	3	4	5
	6. If an important figure dislike me, I may not make too many friends	1	2	3	4	5
	7. Whether a car accident happens to me depends on other driver	1	2	3	4	5

Part III: LOC Scale (Continue)

Dimensions	Item content	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
	8. To implement my plan, I'm sure such plan meets the taste of persons more powerful than me	1	2	3	4	5
Opportunities	1. My life is controlled by accidents to a great extent	1	2	3	4	5
	2. I feel the thing happening in my life is controlled by the influential person	1	2	3	4	5
	3. Whether a car accident occurs to me relies on my cycling technology	1	2	3	4	5
	4. I cannot protect my own interests in case of encountering unlucky things	1	2	3	4	5
	5. I get what I pursue often because I'm lucky	1	2	3	4	5
	6. My life is often controlled by influential persons	1	2	3	4	5
	7. Whether a car accident happens to me mainly depends on luck	1	2	3	4	5
	8. Whether I can be an official depends on whether I'm lucky enough and in the right position at the right time	1	2	3	4	5

Part IV: Hardiness Scale

Dimensions	Item content	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
Control	1. I will try every means to find the solution for the difficulty	1	2	3	4	5
	2. I will do my best to turn the scale in case of encountering the wrong end of the stick	1	2	3	4	5
	3. I can still keep my spirits up even under bad circumstances	1	2	3	4	5
	4. I will try my best to find the cause of the problem	1	2	3	4	5
	5. I will try to calm down the person who is angry with me	1	2	3	4	5
	6. I can always get my ideas into shape quickly regardless of how complicated the problem is	1	2	3	4	5
	7. I often regard the difficult in life as challenge other than threat	1	2	3	4	5
	8. I will keep my head in case of being criticized	1	2	3	4	5
Challenges	1. The change in life and work usually makes me feel excited	1	2	3	4	5
	2. I like to try something new and exciting	1	2	3	4	5
	3. I prefer challenging and changeable jobs	1	2	3	4	5
	4. I prefer to take on important work	1	2	3	4	5
	5. I'm motivated to study by breaking the routine	1	2	3	4	5
	6. I'm willing to give up the stability of life to get the opportunity of facing major challenges	1	2	3	4	5
	7. Embracing new situations is an important thing in my life	1	2	3	4	5

Part IV: Hardiness Scale (Continue)

Dimensions	Item content	Strongly Disagree	Basically Disagree	Agree	Somewhat Agree	Totally Agree
Involvement	1. Work and learning will give me fun	1	2	3	4	5
	2. I look forward to working studying almost every day	1	2	3	4	5
	3. Doing things actively and diligently makes me excited	1	2	3	4	5
	4. Busy pace of life makes me feel fulfilled	1	2	3	4	5
	5. I'm always passionate about working	1	2	3	4	5
	6. I do simple things very dedicating	1	2	3	4	5
Resilience	1. I can always achieve the goal by my own efforts	1	2	3	4	5
	2. I can insist on doing a difficult thing as long as it is meaningful	1	2	3	4	5
	3. I am not afraid of any difficulty if I decide to do it	1	2	3	4	5
	4. I won't easily give up my own ideal and pursuit	1	2	3	4	5
	5. I can overcome any difficulty as long as I make great efforts	1	2	3	4	5
	6. I won't give up easily even though encountering the obstacle if the goal is confirmed	1	2	3	4	5

My dear students, The questionnaire is over. Check whether the omission happens to the questionnaire and thank you a lot for your contributions to the research!