Peer-Assisted Learning in the Safety Education course of College Students to Enhance Achievement, Cooperative ability and Satisfaction

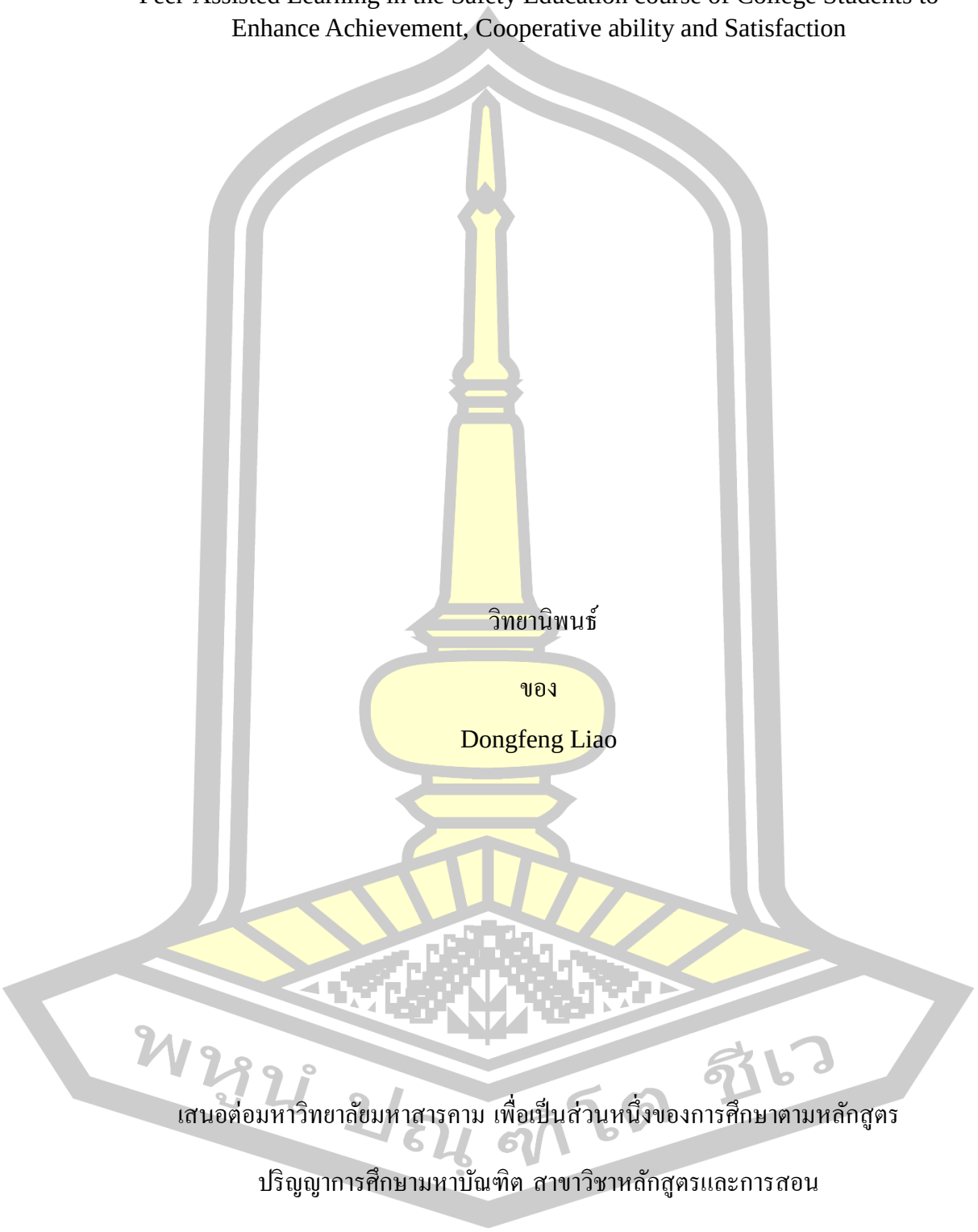
Dongfeng Liao

A Thesis Submitted in Partial Fulfillment of Requirements for

degree of Master of Education in Curriculum and Instruction

October 2023

Peer-Assisted Learning in the Safety Education course of College Students to Enhance Achievement, Cooperative ability and Satisfaction



วิทยานิพนธ์

ของ

Dongfeng Liao

เสนอต่อมหาวิทยาลัยมหาสารคาม เพื่อเป็นส่วนหนึ่งของการศึกษาตามหลักสูตร

ปริญญาการศึกษามหาบัณฑิต สาขาวิชาหลักสูตรและการสอน

ตุลาคม 2566

พหุน ปณฺ ฑิโต ชีเว

Peer-Assisted Learning in the Safety Education course of College Students to Enhance Achievement, Cooperative ability and Satisfaction

Dongfeng Liao

A Thesis Submitted in Partial Fulfillment of Requirements

for Master of Education (Curriculum and Instruction)

October 2023

พหุน ปณฺ ฑิโต ชีเว

The examining committee has unanimously approved this Thesis, submitted by Ms. Dongfeng Liao , as a partial fulfillment of the requirements for the Master of Education Curriculum and Instruction at Mahasarakham University

Examining Committee

.....Chairman
(Asst. Prof. Jiraporn Chano , Ph.D.)

.....Advisor
(Hemmin Thanapatmeemamee , Ph.D.)

.....Committee
(Apiradee Jansaeng , Ph.D.)

.....External Committee
(Asst. Prof. Tipaporn Sujaree , Ph.D.)

Mahasarakham University has granted approval to accept this Thesis as a partial fulfillment of the requirements for the Master of Education Curriculum and Instruction

.....
(Assoc. Prof. Chowwalit Chookhampaeng , Ed.D.)
Dean of The Faculty of Education

.....
(Assoc. Prof. Krit Chaimoon , Ph.D.)
Dean of Graduate School

TITLE Peer-Assisted Learning in the Safety Education course of College Students to Enhance Achievement, Cooperative ability and Satisfaction

AUTHOR Dongfeng Liao

ADVISORS Hemmin Thanapatmeemamee , Ph.D.

DEGREE Master of Education **MAJOR** Curriculum and Instruction

UNIVERSITY Mahasarakham University **YEAR** 2023

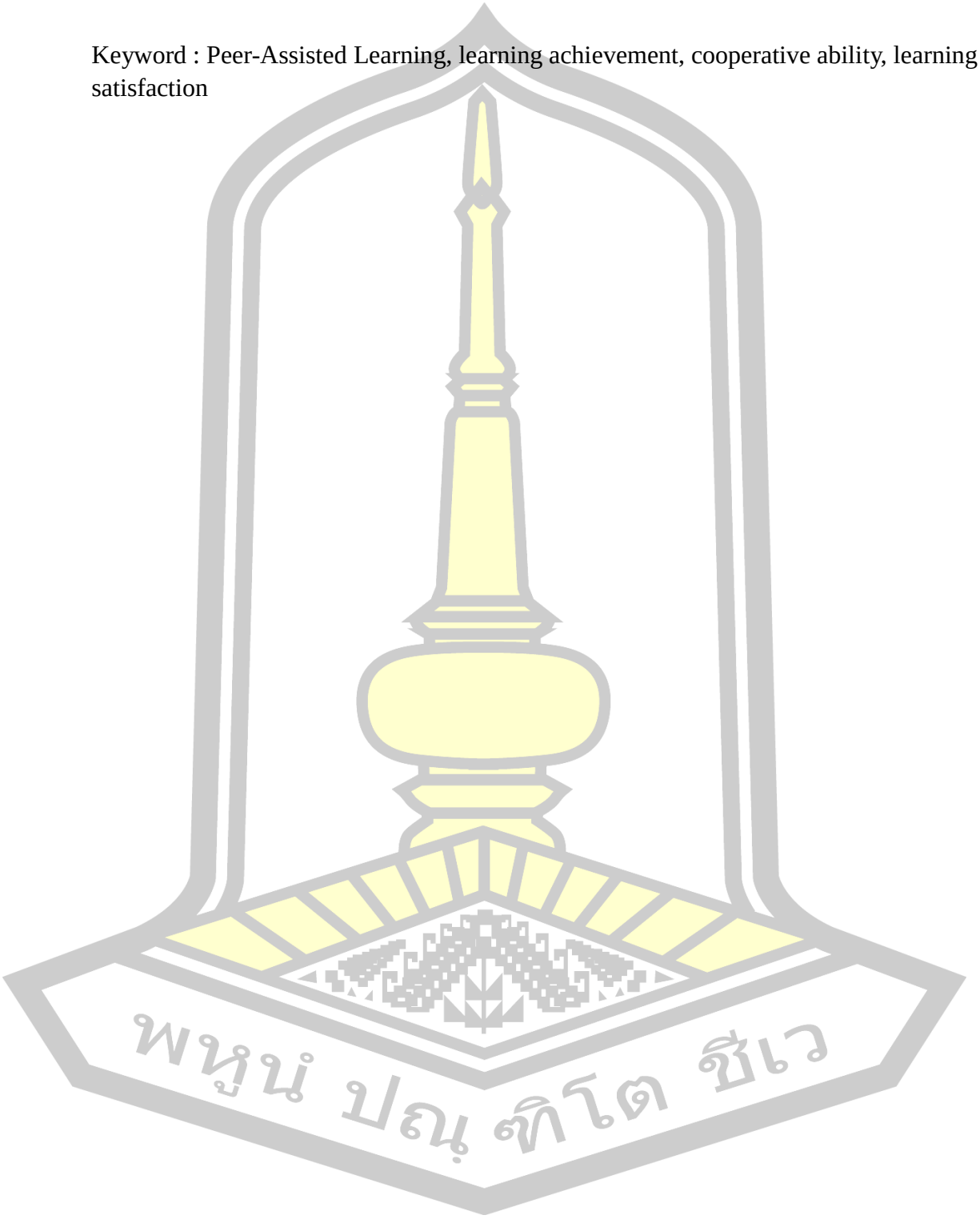
ABSTRACT

This study aimed (1) to explore applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' learning achievement of physics majors in Guangxi Normal University for Nationalities. (2) to explore applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' cooperative ability of physics majors in Guangxi Normal University for Nationalities. (3) to explore applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' learning satisfaction of physics majors in Guangxi Normal University for Nationalities. The research sample are 30 students in Physics class 1, College of Mathematics, Physics and Electronic Information Engineering of Guangxi Normal University for Nationalities, and they were taught Peer-Assisted Learning method. The data of this research comes from a test paper for pre-test and post-test, a pre-test and post-test questionnaire, and interview results. Input the test data into SPSS for descriptive statistics and data analysis; input the questionnaire data into SPSS for data analysis.

The findings revealed that: (1) the results of post-test are significantly higher than the results of the pre-test. peer-assisted learning can effectively improve the learning achievement of the safety education course of college students. (2) the mean score of each dimension has improved, and the cooperative ability has developed from a medium level to a high level. peer-assisted learning improves college students' cooperative ability in the safety education course of college students. (3) The mean score of each dimension has improved, and the learning satisfaction has developed from average effect to very good effect. peer-assisted learning improves college students' learning satisfaction in the safety education course of college

students.

Keyword : Peer-Assisted Learning, learning achievement, cooperative ability, learning satisfaction



ACKNOWLEDGEMENTS

The thesis would not have been accomplished if without the help from several people. First of all, I would like to thank my thesis advisor Dr.Hemmin Thanapatmeemanee for his professional guidance. He continues to expand my knowledge, broaden my vision, enhance my academic literacy, lay the foundation for the development of the dissertation, and continue to guide from the opening of the thesis to the final drafts of the paper, put forward opinions and suggestions, improve my thesis paper. Here I would like to express my most sincere thanks to my thesis advisor Dr.Hemmin Thanapatmeemanee.

I was very fortunate to have many teachers and friends both within and outside the Faculty of Education during my master life. I thank them all for their being very supportive.

I would also like to thank Asst.Prof.Dr. Jiraporn Chano. From the time of my master studying, Asst.Prof.Dr. Jiraporn Chano began to expand my knowledge from the daily guidance plan, and constantly answers related professional questions for me, so that I would be more scientific in the process of writing papers; thank Dr.Apiradee Jansang, Assoc.Prof.Dr. Prasert Ruannakarn and Asst.Prof.Dr.Tippaporn Sujaree for putting forward valuable amendments on my papers; thanks for all kinds of help from the teachers of Mahasarakham University; thanks for Mahasarakham University providing us with various learning environments.

I am deeply indebted to Yi Qishun, Li Fansheng, and Huang Lingzhi teacher of the Guangxi Normal University for Nationalities. Thanks for their put forward valuable suggestions and opinions for my test papers, questionnaires, interviews and other content, so that my research can be carried out normally. Thanks for all the teachers, I thank them all for their being very supportive.

I would also like to thank my senior sister Luo Menglan, Lu Yeyan and Liang

Yuping et al classmate in the process of writing the papers in my writing process.

I would also like to thank my students to fill in carefully, so that I have obtained effective thesis data.

Finally, I would also like to thank my family for their care and support silently behind it.

Dongfeng Liao

TABLE OF CONTENTS

Page

ABSTRACT ..... D

ACKNOWLEDGEMENTS ..... F

TABLE OF CONTENTS ..... H

LIST OF TABLES L

LIST OF FIGURES ..... M

Chapter I Introduction 1

1. Background 1

2. Research Problem 3

3. Purpose of the Research 3

4. Hypothesis of the Research 3

5. Research Significance 4

6. Scope of the Research 5

6.1 Population 5

6.2 Sampling 5

6.3 Variable to Study 6

6.4 Duration Time 6

6.5 Content of Courses 7

6.6 Term of Study 7

7. Definition 7

7.1 Peer-Assisted Learning 7

7.2 The Safety Education Course of College Students 8

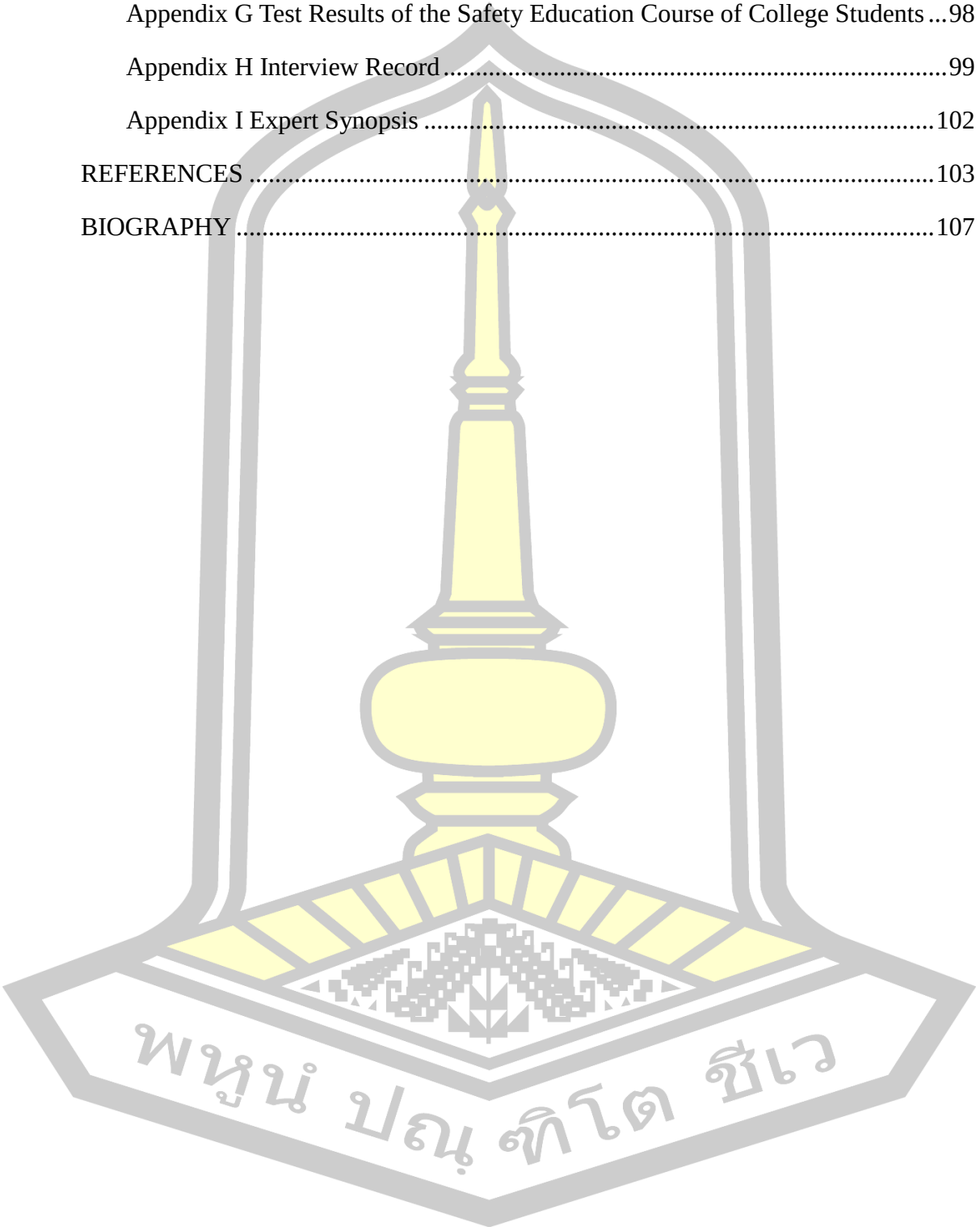
7.3 Learning Achievement 8

7.4 Cooperative Ability 8

7.5 Learning Satisfaction 9
Chapter II Literature Review and Conceptual Framework 10
1. The Importance of Research 10
1.1 The necessity of the safety education of college students 10
1.2 The importance of the safety education of college students 11
1.3 The importance of cultivating safety awareness 11
2. Peer-Assisted Learning 12
3. Learning Achievement 15
4. Cooperative Ability 16
5. Learning Satisfaction 18
6. Literature Review 21
6.1 Foreign Research Trends 21
6.2 Domestic Research Trends 23
7. Study Evaluation 27
8. Conceptual Framework 28
Chapter III Research Methods 32
1. Research Methods 32
2. Research Designs 36
3. Instrument 37
3.1 Teaching Design 37
3.2 Test 41
3.3 Questionnaire 47
3.4 Interview 53
3.5 Statistical Methods 55
4. Measurement and Data Collection 55
Chapter IV Results 58

1. The Effect of Peer-Assisted Learning Method on College Students' Learning Achievement 58
1.1 Pre -test and Post -test Learning Achievement's Test of Normality 58
1.2 Analysis of Pre -test and Post -test Pairing Sample Results 58
2. The Effect of Peer-Assisted Learning Method on College Students' Cooperative Ability 59
2.1 The Present Situation of Collaborative Ability of College Students 60
2.2 Comparison of college students' cooperative ability between pre-test and post-test 61
2.3 Interview results of college students' cooperative ability 62
3. The Effect of Peer-Assisted Learning Method on College Students' Learning Satisfaction 63
3.1 The Present Situation of Learning Satisfaction of College Students 63
3.2 Comparison of college students' learning satisfaction between pre-test and post-test 64
3.3 Interview results of college students' learning satisfaction 64
Chapter V Conclusion and Discussion 66
1. Purpose of the Research 66
2. Summary of the Major Research Finding 66
3. Conclusion of the Research 70
4. Limitations of the Research 72
5. Recommendations for Further Research 72
Appendix 74
Appendix A Teaching Design Case 74
Appendix B The Result of IOC Index of the Teaching Design Content 83
Appendix C Test Papers 84
Appendix D The Result of IOC Index of the Test Papers Content 90
Appendix E Questionnaire 94

Appendix F Interview 97
Appendix G Test Results of the Safety Education Course of College Students ...98
Appendix H Interview Record 99
Appendix I Expert Synopsis 102
REFERENCES 103
BIOGRAPHY 107



LIST OF TABLES

Page

Table 1The result of IOC index of the teaching design content.....39

Table 2: The result of IOC index of the test papers content 42

Table 3: The result of IOC index of the cooperative ability scale questionnaire 49

Table 4:The result of IOC index of the learning satisfaction questionnaire 52

Table 5: The results of IOC index of interview 55

Table 6: Test of Normality 58

Table 7: Pre-test and Post-test paired Samples statistics 59

Table 8: Pre-test and Post-test paired Samples Test.....59

Table 9: Comparison of the total cooperative ability means scores and the mean scores of each dimension 60

Table 10: Comparison of cooperative ability between pre-test and post-test 61

Table 11: Comparison of the total learning satisfaction means scores and the mean scores of each dimension.....63

Table 12: Comparison of learning satisfaction between pre-test and post-test..64

LIST OF FIGURES

Page

Figure 1paper framework.....31

Chapter I Introduction

In order to study Peer-Assisted Learning in the Safety Education Course of College Students to enhance learning achievement, cooperative ability and learning satisfaction, the chapter one is mainly introduced, which mainly expounds the status and background of the safety education of college students, research significance, research purpose, and research issues.

1. Background

The safety of students is the foundation of education. If the safety of students is not guaranteed, education will lose its most fundamental meaning. Therefore, the Safety Education of students should run through every stage of their growth, from kindergarten, primary school, middle school, university in different periods should pay attention to the training of students' safety awareness. In particular, the safety of college students directly affects the harmony and stability of the society, and the safety of every student may become a hot topic of concern.

In China, the safety education work for college students is basically completed by their colleges and universities. College students face the diversity and complexity of the social environment and various safety issues hidden in life, and their ability to foresee, judge and respond is weak. Internet-related surveys show that: 16% of college students have illegally used electrical appliances in their dormitories; 35% of college students do not know how to use fire extinguishers; about 24% of college students have no awareness of safety precautions; Call 119 for the fire alarm, but are at a loss as to how to eliminate fire hazards, escape from the scene, evacuate, and how to effectively prevent the spread of fire. These all show that college students in my country generally lack the ability to effectively respond to unsafe incidents (M. Jiang & Cai, 2017) .

The safety education of college students has gradually been paid more attention by colleges and universities, and has become a campus culture construction and compulsory course for colleges and universities. However, judging from the actual effect of safety education of college students, it is not very optimistic. It is still in the

stage of classroom education based on safety education theory. Students only attend classes to complete the class, and do not know how to deal with safety problems in real life. Incidents of students being violated or violated often occur: On the morning of November 14, 2008, a fire broke out in the girls' dormitory of Shanghai Business School. Four girls jumped from the 6-story dormitory to escape, and all died on the spot; on January 19, 2011, a college student from the Shijiazhuang Institute of Information Engineering committed suicide due to "overwhelming job-seeking pressure"(Xiao, 2011). Colleges and universities do not pay enough attention to the safety education of college students. The actual safety education courses of college students are basically taught intensively when freshmen enter school, and then each college conducts a safety education class once a semester. The content of the lectures is also a brief introduction to various security knowledge, or a temporary course is arranged according to some security time nodes and special events. The safety education courses of college students does not really run through the whole process of university education and teaching(M. Jiang & Cai, 2017) , make the safety education work of our country's colleges and universities become after the start of school, holidays, and special events, educational work with a certain timeliness, rather than a work that truly guides students to improve their awareness of prevention and cultivates students' awareness of "active safety". In the process of safety education, the traditional teaching methods of lecturing, indoctrination and duck-feeding are still adopted, which ignores the real learning needs of students and cannot really arouse students' sense of crisis. Students feel that those are all about other people's affairs, has nothing to do with oneself, resulting in the inability to effectively improve students' learning achievement, cooperative ability and learning satisfaction.

Relevant studies (Correa et al., 2009) show that Peer-Assisted Learning method can give full play to the active interaction between students in classroom teaching and carry out cooperative learning, which can make students become "teaching guides" in and out of the classroom, and teachers become teaching guides and improve the

teaching effect. Therefore, the author uses Peer-Assisted Learning method in the safety education course of college students to enhance learning achievement, cooperative ability and learning satisfaction through their own participation and mutual help among classmates.

2. Research Problem

This research has three questions, as follows:

(1) How to explore applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' learning achievement?

(2) How to explore applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' cooperative ability?

(3) How to explore applying Peer-Assisted Learning method to enhance college students' learning satisfaction?

3. Purpose of the Research

This research has three purposes, as follows:

(1) To explore applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' learning achievement of physics majors in Guangxi Normal University for Nationalities.

(2) To explore applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' cooperative ability of physics majors in Guangxi Normal University for Nationalities.

(3) To explore applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' learning satisfaction of physics majors in Guangxi Normal University for Nationalities.

4. Hypothesis of the Research

(1) The learning achievement of physics majors in Guangxi Normal University for Nationalities is higher after the application of the Peer-Assisted Learning method in the safety education courses of college students than before the study.

5. Research Significance

This research is to explore the use of peer-assisted learning teaching methods to improve the learning achievement, cooperative ability and learning satisfaction of college students in the safety education course of college students, so that students can learn to help each other, care for each other, learn from each other through peer-assisted learning, and finally work together. Improve the safety awareness of the students. Cultivating college students' safety awareness is the need to improve the safety awareness of the whole society, to improve the comprehensive quality of college students and their own development, and to build a harmonious society and school.

For students

(1) Applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' learning achievement.

(2) Applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' cooperative ability.

(3) Applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' learning satisfaction.

(4) Applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' safety awareness ensures life and health.

For teachers

(1) The results of this study will help teachers realize the role of applying peer-assisted learning method in classroom teaching of safety education courses of college students.

(2) Teachers should learn how to create a safety education course of college students’ education process that is conducive to guiding the teaching and learning process, improve classroom teaching effects, and improve students' safety awareness.

(3) The teaching method can be chosen to improve the quality of school teacher education.

For school

Creating a safe and harmonious campus is one of the requirements of the construction of a harmonious society for colleges and universities, and it is also an important part of it. As the most important subject of colleges and universities, college students are the objects of college education and training. Every move, every word and deed during their school days has been widely concerned by the country, society and family. If a "safety incident" involving college students occurs, it will inevitably affect the nerves of the society, family, publicity media and college student groups, affect the safety and stability of colleges and universities, and even have a strong negative impact on the whole society. Therefore, using peer-assisted learning teaching methods to improve college students' learning achievement, cooperative ability, and learning satisfaction in college students' safety education courses allows students to learn to help each other, care for each other, and learn from each other through peer-assisted learning, and finally make progress together. Improve the safety awareness of the students, pay attention to and strengthen the safety education of college students, and prevent problems before they happen.

6. Scope of the Research

6.1 Population

The study populations are students majoring in physics in College of Mathematics, Physics and Electronic Information Engineering of Guangxi Normal University for Nationalities, a college of higher education in Guangxi, China. There are two classes, with 30 students in each class，a total of 60 students. Physics Class 1, Grade 2020 and Physics Class 2, Grade 2020.

6.2 Sampling

In this study, through cluster random sampling methods, the Grade 2020 students of the College of Mathematics, Physics and Electronic Information Engineering of Guangxi Normal University for Nationalities are selected. The samples are selected from the Grade 2020 Physics Class 1, and the number of students is 30. The Safety

Education Course of College Students in Class 1, Grade 2020 students majoring in physics, College of Mathematics, Physics and Electronic Information Engineering, Guangxi Normal University for Nationalities was taught by Peer-Assisted Learning method. Explore the use of Peer-Assisted Learning method to enhance students' learning achievement, cooperative ability, and learning satisfaction in the safety education courses of college students.

6.3 Variable to Study

The research variables in this study are composed of one independent variable and three dependent variables.

(1) Independent variable: Peer-Assisted Learning method.

(2) Dependent variable: learning achievement, cooperative ability, learning satisfaction.

6.4 Duration Time

The research duration of this paper is about one year, and the general schedule is as follows:

The first stage: from August to October 2022, search for relevant literature at home and abroad, carefully study the literature and field safety survey on campus, determine the implementation plan, study of Peer-Assisted Learning method, write the proposal report, and complete the proposal defense.

The second stage: from November 2022 to April 2023, check out the information of the safety education courses of college students, and formulate the teaching design of the safety education courses of college students and formulate the test papers for the safety education courses of college students. One week before the experimental teaching starts, conduct pre-test tests for the research participants, record the results of the pre-test tests; then it conducts a six -week teaching experiment, and uses a certain "the safety education courses of college students" teaching design. After the experimental teaching is completed, the research objects are examined for post -test, and the test results are tested after recording. Check out the surveyed questionnaire on

Peer-Assisted Learning, and formulate survey questionnaires for students' cooperative ability and learning satisfaction. One week before the start of the teaching experiment, a pre-test questionnaire survey on the research participants; after the experimental teaching is completed, the post-test questionnaire survey is conducted on the research participants; Collect data on the survey of pre-test and post-test questionnaires. After the experimental teaching, the research participants are interviewed and a record of interviews.

The third stage: from May 2023 to August 2023, the data collected in the second stage will be processed and analyzed, the results will be summarized to write the thesis, the thesis research will be improved, and the thesis defense will be completed at last.

6.5 Content of Courses

The content taught in the safety education course of college students in this study is to learn the basic security knowledge. There are 6 chapters in total, 6 teaching designs, the chapter one is personal safety education, the chapter two is property security education, the chapter three is traffic safety education, the chapter four is fire safety education, the chapter five is mental health education, and chapter six is network security education.

6.6 Term of Study

The content of this research is taught in 6 chapters, each chapter is 3 hours, a total of 18 hours.

7. Definition

7.1 Peer-Assisted Learning

This article conducts research through the guidance direction of the "Peer-Assisted Learning ". Based on relevant theory and teaching practice, develop an understanding of the concept of peer-assisted learning in teaching. This thesis points out Peer-Assisted Learning refers to an activity in which peers are formed in a one-to-one combination way, and they can jointly promote learning and acquire skills and knowledge through mutual questioning and guidance. Based on the characteristics

of each pairing method and the actual situation of students, the pairing method adopted in this study is the combination of two people, combining heterogeneous pairing and homogeneous pairing. Specific activity group pairing situation is: according to the students' pre -testing results and other characteristics of students，in class 1 are divided into A type (Excellent Student) B type (medium level student) and C type (learning difficult students); then A type and C type students are two -way to autonomous choice for heterogeneous pairing form I type Peer-Assisted Learning group, type B and type B students to two -way autonomous choice for homogeneous pairing form II type Peer-Assisted Learning group; Teachers give positive guidance and coordination when students choose pairing companions, so physics class 1 can be divided into 15 Peer-Assisted Learning groups.

7.2 The Safety Education Course of College Students

The safety education course of college students is a public compulsory course offered by various majors in colleges and universities at present. It is an important part of quality education and ideological and political education in colleges and universities. It is a comprehensive course to help college student systematically master modern safety knowledge and skills, cultivate safety consciousness and form scientific safety concept.

7.3 Learning Achievement

Learning achievement, broadly speaking, is the result of a test of a certain learning ability; in a narrow sense, it refers to the score of a test. According to the relevant theory and teaching practice, the concept of learning achievement in this study is defined as follows: learning achievement is the test result that is reflected by the students' learning activities and learning ability through the course test scores during the period of study in school.

7.4 Cooperative Ability

According to relevant theoretical research, the definition of the concept of cooperative ability in this study is as follows: cooperative ability refers to the division

of labor and cooperation between two or more members in order to complete the common teaching goal, and the cooperation consciousness and quality shown in this process sum of personality traits.

Cooperative ability should include the following seven aspects: cooperative cognition, cooperative emotion, cooperative intention, interpersonal mutual assistance, emotional regulation, conflict management and organizational management.

The cooperative ability scale adopts a five-level scoring system, according to the five-point scale standard advocated by Wu Minglong: the average score of 1.80 and below is a low level, 1.81-2.60 is a middle-low level, and 2.61-3.40 is a medium level, 3.41-4.20 is the upper-middle level, 4.21 and above is the advanced level(Wang, 2020).

7.5 Learning Satisfaction

Different researchers have different emphases on the study of learning satisfaction. Some experts and scholars regard satisfaction as a feeling, attitude or psychological state, or as the fulfillment of personal wishes or needs. There are also some experts and scholars who define the concept of satisfaction as an attitude or feeling after personal wishes or needs are achieved. According to relevant theoretical research, combined with the research purpose of this article, the definition of learning satisfaction is as follows: Learning satisfaction refers to the achievements and feelings that learners get during the learning process and after the end of learning, that is, a psychological feeling formed during learning activities. The learning satisfaction in this study is mainly measured from the two dimensions of classroom teaching satisfaction and learning gain satisfaction(X. Zhang, 2022).

Chapter II

Literature Review and Conceptual Framework

In order to study Peer-Assisted Learning in the safety education course of college students to the impact of achievement, cooperative ability and satisfaction, the researchers consulted relevant documents and research, and proposed the following topics:

1. The Importance of Research

1.1 The necessity of the safety education of college students

1.2 The importance of the safety education of college students

1.3 The importance of cultivating safety awareness

2. Peer-Assisted Learning

3. Learning Achievement

4. Cooperative Ability

5. Learning Satisfaction

6. Literature Review

6.1 Foreign Research Trends

6.2 Domestic Research Trends

7. Study Evaluation

8. Conceptual Framework

1. The Importance of Research

1.1 The necessity of the safety education of college students

(1) Strengthening the safety education of college students is the need to maintain national security and interests

(2) Strengthening the safety education of college students is the need to cultivate high -quality qualified talents

(3) Strengthening the safety education of college students is the need for the development of the public security situation in colleges and universities

(4) Strengthening the safety education of college students is the need to create a harmonious campus

(5) Strengthening the safety education of college students is the need to improve the ability of college students to prevent self -prevention and self -protection

1.2 The importance of the safety education of college students

(1) Through the teaching of the safety education course of college students, 30 students majoring in physics of Guangxi Normal University for Nationalities have improved their cooperative ability through the application of Peer-Assisted Learning method.

(2) Through the teaching of the safety education course of college students, 30 students majoring in physics in Guangxi Normal University for Nationalities have been able to improve their learning satisfaction and arouse their interest in learning by applying Peer-Assisted Learning method.

(3) Through the teaching of the safety education course of college students, 30 students majoring in physics of Guangxi Normal University for Nationalities learned safety knowledge, improved their safety awareness, and reduced the occurrence of safety hazard accidents.

1.3 The importance of cultivating safety awareness

(1) Cultivating college students' awareness of safety is the need for improving the awareness of the entire social security.

(2) Cultivating the safety awareness of college students is the need for improving the comprehensive quality of college students and their own development.

(3) Cultivating the safety awareness of college students is the need to build social and school harmony.

2. Peer-Assisted Learning

Many researchers at home and abroad have studied Peer-Assisted Learning. The following are some related studies by researchers for Peer-Assisted Learning.

Topping, K. of Britain and Ehly, S. of the United States put forward the definition of it in the book Peer-Assisted Learning in 1998, refers to learning activities that acquire knowledge and skills through the proactive help and support of equal or matched partners(Topping & Ehly, 1998).

Luo Shiqi study “Effect of Peer-Assisted Learning on Senior High School Students Writing Competence in English Continuation Writing Task” study, apply the peer-assisted learning to the teaching of continuation writing task, aiming at exploring the influence of peer-assisted learning on the writing scores, accuracy, fluency and complexity of continuation writing task of senior high school students at different levels. Students from Class 9 and Class 11of a school in Sichuan Province were taken as research participants, in which Class 9 is the experimental class (EC) and Class 11 is the control class (CC). According to the pre-test results, the author divided 44 participants in EC into high-score group (HG) and low-score group (LG). The comparative experiment 1aste d for 11 weeks, in which every two weeks was a writing cycle, and six writing experiments were conducted. The EC was conducted under the peer-assisted 1earning mode, while the participants in cc complete d the writing task independently. It can be concluded that peer-assisted 1earning has positive effects on the writing scores, accuracy, fluency, and complexity of senior high English continuation writing task(Luo, 2020).

Dai Yarong believes that Peer-assisted Learning is a companion with the same cognitive ability. By helping each other to enhance the cognitive ability of the companion and promote the common progress of the companion, often form a companion in a one -to -one combination, and has a certain amount of certainty. Procedures, methods and rules to organize the learning process-a teaching strategy system, and "companion" continuously builds meaningful "learning" in the process of

" Peer-assisted Learning". She conducted a comparative test by selecting two classes in the second grade in high schools in various aspects. The experimental class adopted a peer -assisted learning method for biological classroom teaching. Traditional teaching methods were used to conduct two and a half months of teaching experiments. Perform pre -testing and post -testing of students' biological results and non -intellectual factors, and use tools such as SPSS, Excel and other tools for scientific analysis, and use questionnaire survey methods, interview investigation methods and other methods to supplement their results. Learn the actual teaching effect in teaching. Peer-Assisted Learning Peer pairing can be classified into different types according to different classification criteria. Pairing according to activity groups can be divided into: the number of people and the two people pairing, many companions are generally tasks by roles, usually in groups of four to six, learning efficiency is high, but there may be many people cognitive conflict, ominous competition, one person instead of the whole group, ignore the edge of the students, from top students better, poor student the situation of the more difficult it is to get promoted. In this case, everyone will be required to participate in the activities, otherwise the mutual learning activities cannot be carried out. This matching method can effectively avoid the phenomenon of wandering students and give consideration to each student(Dai, 2017).

Zhang Meijie believes that Peer-assisted learning refers to learning activities to acquire knowledge and skills through active assistance and support from partners of equal status or matching. From the perspective of positive, he selects two classes with the same basic situations in a senior high school in Wuhan to conduct a comparative experiment to study the actual effect of peer-assisted learning in high school English writing teaching. He sorts out the problems in the current senior high school English writing teaching by issuing questionnaires, interviews, and other forms. Then it constructs a flow chart of senior high school English writing teaching design based on peer-assisted learning and elaborates the analysis and design involved in the flow

chart. He selects two cases of peer-assisted learning, and verifies and analyzes the application effect of peer-assisted learning from four aspects: questionnaires, interviews, student compositions, and evaluation scales. His research results show that the implementation of peer-assisted learning in senior high school English writing teaching can better mobilize the enthusiasm of students, inspire students' interest in learning, cultivate students' mutual aid awareness in the learning process, and enhance students' independent thinking and communication expression and improve the level English writing(M. Zhang, 2018).

Chen Yunjuan believes that peer-assisted learning refers to a group of mutual aid learning groups with two people and a large group. Through the questionnaire survey method, she explored her peer-assisted learning to study in the development of high school physics exercises, and fully understood the students' awareness of mutual assistance and the status quo of mutual assistance. Then, according to the current status of the exercise class and the status quo of the students, the principles and strategies of mutual assistance to learn from the high school physics exercises. In the end, she chose a class in the second grade she taught to conduct two -month practice, and adopted the questionnaire survey method and interview method to understand the practical effect. According to analysis, the grouping of peer-assisted learning can achieve better results with heterogeneous grouping. Carrying out peer-assisted learning in the exercise class can improve students' mutual awareness, stimulate students' learning interest, enhance students' thinking ability and solve problems to solve problems the ability to promote students 'language expression and cooperation, and promote students' interpersonal communication ability(Chen, 2021).

Based on the "Peer-Assisted Learning" peer guidance, according to the related theory and teaching practice, to Peer-Assisted Learning in the teaching of the concept put forward understanding, this paper defines the concept of peer-assisted learning as: refers to form a one-to-one combination way, through questions and guide each other,

each other between the students work together to promote learning, gain skills and knowledge of an activity.

3. Learning Achievement

Many researchers have studied learning achievement. The following is a related interpretation of different researchers for learning achievement. Learning achievement, in a broad sense, is the test result of a learning ability; in a narrow sense, it refers to the score of the exam. Learning achievement is the most direct reaction form of learning behavior, which is affected by many factors.

Zhang Lanlan in her research “A STUDY ON COLLEGE STUDENTS' LEARNING ATTITUDE AND ACADEMIC PERFORMANCE IN MOOC – TAKING AEROBICS AS AN EXAMPLE”, learning achievement refers to the total scores of the Mu class platform, including the scores of learning, the scores of the chapters, the final examination results, and the results of the meeting(L. Zhang, 2019). Students' learning behavior runs through every process of learning, and the degree of investment in learning progress and learning is more specific. Only after completing the content of the course can get the final learning progress score. It is not difficult. For students with strong self -control, they can continue to learn according to their own learning plan and achieve good learning progress. However, for students who are not restrained by self -behavioral, it is difficult for them to persist in learning and seriously affect the scores of learning progress. In the final assessment requirements of the Mu class, the final test can only be performed only before the final test, which also shows that the persistence of learning behavior has a greater impact on academic performance. In the test, students can only reflect the authenticity of the results only by correcting their own test attitude, regulating their own learning behaviors, taking answers carefully, and observing the test discipline. In terms of the assessment of the meeting class, students can get the corresponding results only at each meeting class.

Zhang Yan of Shenyang Normal University mentioned in the "Experiment Study on Improving University Student's Performance with Learning Strategies' Training"

that the academic performance was defined as: during the study of students, the school's curriculum scores of the students' disciplines were accumulated or weighted. The effective evaluation and feedback comprehensive test scores made by students' staged learning activities and learning ability(Y. Zhang, 2011).

To sum up, according to the relevant theory and teaching practice, the concept of learning achievement in this study is defined as follows: learning achievement is the test result that is reflected by the students' learning activities and learning ability through the course test scores during the period of study in school.

4. Cooperative Ability

The concept of cooperative ability

In recent years, many researchers have studied cooperative ability. The following are the relevant interpretations of different researchers' cooperative ability.

Chinese psychologist Li Feifei believes that "cooperative ability is the sum of cooperation consciousness, relevant knowledge, cooperation skills and cooperation quality, and it is the individual psychological characteristics contained in the mutual cooperation and coordination among cooperative individuals for the common goal"(Li, 2009).

Liu Zenghui in his study" Research on the promotion of cooperation ability of third grade students by group tutoring in painting--Take Shenyang S Primary School as an example" believes that cooperative ability is the emotion, knowledge, skill, personality, attitude, etc. that people show when they cooperate and cooperate with each other in order to achieve the same goal. It is mainly reflected in the aspects of teamwork, learning ability, communication ability, willingness to help others, friendliness, etc., and the sum of the correlation coefficients shown in this process(Liu,2021). Through consulting materials and understanding the research status of domestic and foreign researchers on primary school students' cooperative ability, combined with previous studies, the cooperative ability is divided into three dimensions, namely, cooperative consciousness, cooperative skills and cooperative

quality. Each dimension contains two elements, which are team spirit and fair sense of responsibility; Communication skills, learning ability; Warm, sincere, tolerant.

Liang Beibei believes that the cooperation ability is to actively communicate and cooperate with others in order to better achieve a certain goal in life, study and social activities. The sum of the ability to find a good solution when the opinions conflict, including the sense of identity and honor, management and negotiation, expression and communication, reflection and evaluation (Liang, 2018).

Peng Yan believes that cooperative ability is the form of a team formed by two or more members for the common goal. In the team, each member must have individual ability and cooperation and coordination ability, and fulfill their duties in their own positions. Cooperative members understand and communicate with each other, learn from each other through continuous cooperation, and absorb the advantages of other members to make up for their own shortcomings(Peng, 2015).

According to relevant theoretical research, the definition of the concept of cooperative ability in this study is as follows: cooperative ability refers to the division of labor and cooperation between two or more members in order to complete the common teaching goal, and the cooperation consciousness and quality shown in this process sum of personality traits.

Components of cooperative ability

Lv Xiaojun and Su Yonghua (Lv & Su, 2005) proposed that cooperation ability includes two aspects: cooperative awareness and cooperative skills. Among them, cooperative awareness includes trust and collectiveness; cooperative skills include resource sharing, responsibility, cooperation and competition orientation, and diversity tolerance. Li Feifei (Li, 2009) redefines cooperative ability and believes that cooperative ability should include the following four aspects: cooperative awareness, cooperative skills, cooperative quality and related knowledge. Li Furong (Li, 2011)revised the cooperative ability scale of Lv Xiaojun and Su Yonghua to make the scale more suitable for the student population. On the basis of retaining the

original two dimensions of cooperative awareness and cooperative skills, each dimension was detailed point. The dimension of cooperative consciousness is divided into three aspects: cooperative cognition, cooperative emotion, and cooperative intention; the dimension of cooperative skills is divided into four aspects: interpersonal mutual assistance, emotional regulation, conflict management, and organizational management. This study adopts Li Furong's seven dimensions of cooperative ability, which should include the following seven aspects: cooperative cognition, cooperative emotion, cooperative intention, interpersonal mutual assistance, emotional regulation, conflict management and organizational management.

The cooperative ability scale adopts a five-level scoring system, according to the five-point scale standard advocated by Wu Minglong: the average score of 1.80 and below is a low level, 1.81-2.60 is a middle-low level, and 2.61-3.40 is a medium level, 3.41-4.20 is the upper-middle level, 4.21 and above is the advanced level(Wang, 2020).

5. Learning Satisfaction

Different researchers have different focus on learning satisfaction research. Some experts and scholars have regarded satisfaction as a feeling, attitude, or psychological state, or satisfying satisfaction as a personal desire or need. There are also some experts and scholars that define a satisfactory concept as a kind of attitude or feeling after achieving the expected goal. The following is a related interpretation of different researchers on learning satisfaction.

Jiang Xinxin believes that learning satisfaction is the degree of satisfaction of students in the school learning process. It is attitude or feeling for the learning process. The gap comparison. She takes a questionnaire survey on the study satisfaction of the volleyball options of public sports students in Anhui Province for public sports student volleyball option classes. The six dimensional analysis of the relationship between classmates and grade evaluation evaluates the satisfaction of the university students of Anhui Province for the study of volleyball options(X. Jiang, 2022).

Yuan Ying believes that learning satisfaction is the experience or experience of students' expectations of learning activities, school services and learning results after receiving higher education. Evaluation of the environment, regulations, rules and regulations, services and management, and interpersonal relationships. From the perspective of learners, she investigated the satisfaction of the professional degree graduate school in Henan Province's full -time sports master's degree, and deeply excavated the cause of the satisfaction of learning satisfaction of the master's degree in sports. The quality of the degree of the degree award provides a useful reference direction for the quality of the training of colleges and universities(Yuan, 2022).

Pu Qiuyu in her “Research on the Influencing Factors and Improvement Strategies of Online Course Resources Learning Satisfaction”, Studying the learning satisfaction of online curriculum resources refers to the learning effect that college students perceive after learning online curriculum resources, overall evaluation of the online curriculum resources learning process, and whether they meet students' learning needs. Subjective judgment. From the perspective of learning satisfaction, considering the problems of the application of online curriculum resources, she can provide curriculum resources that meet the expectations of students, thereby improving the learning effect of online curriculum resources. It has been found that many influencing factors of the learning satisfaction of online curriculum resources are found. However, during the epidemic period, colleges and universities have fully implemented networked teaching. The status and influencing factors of college students' learning satisfaction and influencing factors of college students need to be explored. The impact of clarifying the satisfaction of online curriculum resources learning has a positive effect on promoting online curriculum resources learning and application. Therefore, she used the learning satisfaction as the measurement standard to determine the influencing factors of learning satisfaction, and to build the influencing factors of the influencing factors of the satisfaction of the learning satisfaction of online curriculum resources; then, based on the structural model design

questionnaire, combined with empirical data to further explore online. The influence mechanism of curriculum resources learning satisfaction; finally, combine the influence mechanism, analyze the current status of online curriculum learning satisfaction, and propose to promote online Suggestions for the development of curriculum resources(Pu, 2022).

Wu Mingxia believes that learning satisfaction is a branch of satisfaction. It is used to evaluate the degree of satisfaction of the master's degree in education. It has the characteristics and stability characteristics. The learning environment and management services are measured by the dimensions of learning to be related to learning to reveal whether the learning has achieved the expectations of students. She first summarized and commented on the research results of learning satisfaction and the achievements of the master's degree in education. Secondly, carry out empirical research on the master's degree in education in Y University, and use questionnaire surveys and interview methods to learn about the status quo of the master's degree in education, study and research ability, internship practice, mentor evaluation, learning environment, management service, etc. And hidden issues. Finally, combined with the problems and cause analysis proposes countermeasures for improving the satisfaction of the master's degree in education(Wu, 2021).

Shi Qing put forward that learning satisfaction is a kind of feeling or attitude towards learning activities, which directly reflects the degree of satisfaction students hope to achieve in the learning process. Shi Qing research finally determines the five indicators to evaluate the satisfaction of college students' physical education classes, namely: teaching atmosphere and content, teacher teaching ability, classmate relationship, venue equipment and grade assessment, and preliminary teacher teaching ability in prediction research, teaching content, venue equipment, interpersonal relationships, learning environment and atmosphere and performance assessment are basically consistent(Shi, 2010).

According to relevant theoretical research, combined with the research purpose of this article, the definition of learning satisfaction is as follows: Learning satisfaction refers to the achievements and feelings that learners get during the learning process and after the end of learning, that is, a psychological feeling formed during learning activities. The learning satisfaction in this study is mainly measured from the two dimensions of classroom teaching satisfaction and learning gain satisfaction(W. Zhang, 2021).

The learning satisfaction questionnaire adopts the Likert five-point scale scoring method. Usually, the Likert five-point scale scoring method uses 3, 3.75, and 4.25 as critical values to judge the subjects' scores. Below 3, the effect is poor; between 3-3.75, the effect is average; between 3.75-4.25, the effect is good; above 4.25, the effect is very good(X. Zhang, 2022).

6. Literature Review

6.1 Foreign Research Trends

The original application of peer support theory in education and teaching can be traced back to ancient Greece, when Socrates, Plato and Aristotle and their colleagues often used peer exchange and debate to study and research.

Topping, K. of Britain and Ehly, S. of the United States put forward the definition of it in the book Peer-Assisted Learning in 1998, refers to learning activities that acquire knowledge and skills through the proactive help and support of equal or matched partners(Topping & Ehly, 1998).

Abroad for Peer-Assisted Learning theory research mainly divided into two schools, respectively is "peer guidance" and "cooperative learning", peer guidance mainly pointer to specific course content, has a clear program structure of the interactive learning activities, in this activity, learners were specified for the mentor and the director, Its main representative figures are Toping K. J in Britain and Greenwood, C.R. in the United States. Cooperative learning is structured positive interdependence

in pursuit of common specific goals or results, and its main representatives are Slavin R. E., Johnson D.W. & Johnson R. T and so on.

Lynda. Crowley-Cyr and James. Hevers(Crowley-Cyr & Hevers, 2021) in their study "Using Peer Assisted Learning to improve academic engagement and progression of first year online law students", The University of Southern Queensland with over 16,000 students studying online, their online study environment continues to grow. Their article usefully analyses quantitative data in order to evaluate the effectiveness of the pilot of an online peer-assisted learning program for first-year Law students. Their results were positive and are a productive contribution to the literature on online peer-assisted learning.

Yarhands Dissou Arthur, Courage Simon Kofi Dogbe and Samuel Kwesi Asiedu-Addo study "Enhancing Performance in Mathematics Through Motivation, Peer Assisted Learning, And Teaching Quality: The Mediating Role of Student Interest", Their study explored the role of motivation, peer assisted learning, quality of teaching and student interest on student performance in mathematics. Their research results showed that students learning interest in mathematics partially mediated the relationships between mathematics learning motivation and performance in mathematics; as well as between mathematics teaching quality and performance in mathematics. The effect of peer assisted learning on performance in mathematics was however fully mediated by students learning interest in mathematics.

In the study of peer assisted learning practice, foreign researchers have conducted comparative studies on students of different age levels, different intelligence levels, different races, different types or regional schools, students of different family economic status and students of different genders. Foreign researchers mostly focused on Peer-Assisted Learning to study the effect of the research in all the subjects, the existing research mainly include the reading, writing, mathematics, and study of second language courses, and then extended to study the influence of sports, in the university have been expanded to the law, business studies, environmental science, medicine and

so on the influence of the multi-discipline research. Foreign scholars also pay much attention to the effectiveness of Peer-Assisted Learning and the influence of internal structure and its optimization strategy.

6.2 Domestic Research Trends

In China, the earliest education expo "to learn" is mentioned in this classic: "learn alone without friends, uncultured and widowhood smell", meaning is the absence of communication between the schoolmate if learning to learn, will inevitably lead to knowledge narrow, pointy-haired, points out the peer discussion between communication is very important for learners to master the knowledge. There is also the famous educator Confucius mentioned in the Analects of Confucius, "three people, there must be a teacher," this sentence also mentioned the role of peer guidance.

By searching the keyword "Peer-Assisted Learning" in CNKI, download the literature on Peer Learning and read about it. In China, the research on Peer-Assisted Learning started relatively late. Through classification and comparison, it is found that the main research contents include: (1) Theoretical research, such as the concept, characteristics and strategies of Peer-Assisted Learning, representative articles such as Zuo Huang, Huang Fuquan's two articles" The Meaning of the Peer-Assisted Learning and the Research on It "(Zuo & Huang, 2010) and " The Progress and Prospective of Peer-Assisted Learning Research in Foreign Countries", discussed in detail the theoretical content of Peer-Assisted Learning and related research progress(Zuo & Huang, 2008). Many scholars combined with practice research only from single one subject and grade, did not form a integrated system research, combined with the situation of our country's study also is less, not formed a complete theory, with the localization of the theory of the related studies mostly abroad theory were summarized on the basis of the analysis, the lack of theory and practice related to our country early fusion, Therefore, it is necessary for scholars to combine the characteristics of Chinese education in theoretical research, consider the characteristics of Chinese students, and form a theoretical system in line with the requirements of China's educational practice

reform: (2) the practice research, this part of the study is more, Han Xiaona from Nanjing Normal University carried out an experimental study on mutual aid groups in the practical research of carrying out Peer-Assisted Learning in physics teaching in senior high school(Han, 2017). Jin Erhong from Shanghai Normal University elaborated the current situation of Peer-Assisted Learning in the practice and theory of Peer-Assisted Learning, analyzed the reasons, and also put forward the strategy of Peer-Assisted Learning(Jin, 2012). Guo Yaowei from Nanjing Normal University conducted a detailed study on the effect feedback of Peer-Assisted Learning help practice research on the practice of Peer-Assisted Learning in high school physics exercise class (Guo, 2015).

Zhang Meijie from Central China Normal University to study the actual effect of peer-assisted learning in high school English writing teaching. From the perspective of positive, he selects two classes with the same basic situations in a senior high school in Wuhan to conduct a comparative experiment， He sorts out the problems in the current senior high school English writing teaching by issuing questionnaires, interviews, and other forms. Then it constructs a flow chart of senior high school English writing teaching design based on peer-assisted learning and elaborates the analysis and design involved in the flow chart. He selects two cases of peer-assisted learning, and verifies and analyzes the application effect of peer-assisted learning from four aspects: questionnaires, interviews, student compositions, and evaluation scales. His research results show that the implementation of peer-assisted learning in senior high school English writing teaching can better mobilize the enthusiasm of students, inspire students' interest in learning, cultivate students' mutual aid awareness in the learning process, and enhance students' independent thinking and communication expression and improve the level English writing(M. Zhang, 2018).

He Xian from Yunnan Normal University to test the impact of the companion's mutual assistance learning strategy on the reading results of the fourth grade, she divided the two classes into two groups: one class was 49 students in the control group,

and the traditional teaching method was used for English reading teaching; There are 49 students in the experimental group who use their companion mutual assistance learning strategies to teach English. According to the characteristics of the companion's mutual assistance learning strategy, the students of the experimental group were divided into 24 for mutual assistance reading activities. She uses the method of pre-test and post-test, and the classroom observation method before and after the experiment. Through the 18-week experiment every Wednesday, the results of the pre-testing and post-testing of the experimental group show that the companion mutual assistance learning strategy effectively improves The English reading performance of the fourth grade students; the use of companion mutual assistance learning strategies has promoted the English reading cooperation of companions, and the companion's interaction between reading learning and emotional interaction is more closely held; Willing to use companion mutual assistance strategies to participate in English reading activities(He, 2020).

Huang Shihe study “Effects of Peer-assisted Learning on Senior High School Students’ English Grammar Learning”. He carried out grammatical teaching through the combination of conventional grammar teaching methods, combining conference mutual assistance learning and conventional grammatical teaching through comparison and experimental classes. The entire experiment lasted for 8 weeks. Collect experimental data of research tools such as front and back testing questionnaires, front and rear grammar test papers, and interviews to conduct statistical analysis. Research found that companion mutual assistance learning can effectively improve the attitude of English grammar learning in high school students. The main manifestations are that students' learning methods have gradually changed from boring grammar learning to active learning and cooperation with companions, and the classroom atmosphere becomes active and positive. As the enthusiasm of student grammar learning has continued to improve, students' English grammar achievements have also made great progress. The results of the study show that the combination of companion mutual assistance learning as a kind of auxiliary means for teachers and high school English

grammar teaching is conducive to high school students 'English grammar learning, and provide useful reference for high school English teachers' grammar teaching(Huang, 2020).

Chen Yunjuan from Nanjing Normal University through the questionnaire survey method, she explored her peer-assisted learning to study in the development of high school physics exercises, and fully understood the students' awareness of mutual assistance and the status quo of mutual assistance. Then, according to the current status of the exercise class and the status quo of the students, the principles and strategies of mutual assistance to learn from the high school physics exercises. In the end, she chose a class in the second grade she taught to conduct two -month practice, and adopted the questionnaire survey method and interview method to understand the practical effect. According to analysis, the grouping of peer-assisted learning can achieve better results with heterogeneous grouping. Carrying out peer-assisted learning in the exercise class can improve students' mutual awareness, stimulate students' learning interest, enhance students' thinking ability and solve problems to solve problems the ability to promote students 'language expression and cooperation, and promote students' interpersonal communication ability(Chen, 2021).

Zhang Wenya from Harbin Normal University application of peer-assisted learning in high school English application writing is written for classroom teaching, and research methods combined with quantitative analysis and qualitative analysis are adopted. First of all, in order to understand the attitude of research objects for English application writing and peer-assisted learning, and the current status of writing, let these 61 research objects fill in the questionnaire, complete the writing test, and randomly extract 5 research objects for interviews. Then, the "peer-assisted learning" was used in the English application of high school as a classroom, and a three -month teaching experiment was conducted. After three months of teaching experiments, questionnaire surveys, post-experimental testing, and randomly extracted five research objects were conducted on 61 research objects for interviews. Finally, the

questionnaires, test results, interview texts, and application text writing forms before and after experiments are compiled into data forms, and data analysis and discussion are performed. The analysis results show that peer-assisted learning not only effectively alleviates the anxiety before the writing of high school students in English applied, and enhances the interest in English application writing, but also largely improves the writing performance of high school students and English application writing ability. Experiments show that the new teaching method of "peer-assisted learning" is applied to high school English application text writing teaching(W. Zhang, 2021).

Through literature review, it is found that the research directions and methods of Peer-Assisted Learning are different in different disciplines. Domestic research on the theory and practice of "Peer-Assisted Learning" is constantly developing. The research on the practical direction is still relatively scattered and has not yet formed complete and systematic results. There are very few practical studies on Peer-Assisted Learning in the safety education course of college Students.

7. Study Evaluation

(1) Test evaluation before and after experimental teaching: The ability to solve the basic knowledge, basic theory and actual safety issues in the main assessment of safety uses a 100 -point system. One week before the start of the experimental teaching, the research participants was conducted in the pre-test, and the previous test scores were recorded; then the six-week Peer-Assisted Learning teaching experiments were conducted, and the teaching design of the safety education course of college students was used. After the research participant is conducted, the test results are recorded after the record. Organize the analysis and discussion of the results of the pre-test and the post-test, and improve the Learning achievement in the safety education course of college students by comparing the use of Peer-Assisted Learning and teaching methods.

(2) Experience and feedback before and after experimental teaching: Check out the questionnaire on the learning of Peer-Assisted Learning, and formulate questionnaires for student cooperative ability and learning satisfaction. One week

before the start of the teaching experiment, conduct a pre -test questionnaire survey on the research participants; After the experimental teaching is completed, the research participants after testing the questionnaire is conducted; After the experimental teaching, the research participants was interviewed and a record of interviews. Corresponding analysis and discussions on the data of the pre-test, the post-test and the content of the interview, and improve the students' cooperative ability and learning satisfaction in the safety education courses of college students through comparison with the use of Peer-Assisted Learning methods.

8. Conceptual Framework

This paper study Peer-Assisted Learning in the Safety Education Course of College Students to Enhance Achievement, Cooperative ability and Satisfaction. This research is roughly divided into 3 phases:

Preparation before teaching experiments:

1. Search and find relevant literature on Peer-Assisted Learning, learning achievement cooperative ability, learning satisfaction, etc. to understand relevant knowledge, organize and analyze relevant materials, and provide a firm theoretical basis for the smooth progress of this research.

2. Find the information on the safety education course of college students. According to the requirements of the teaching design, study and design the teaching design of the safety education course of college students related to Peer-Assisted Learning methods. After review by experts, the final the safety education course of college students teaching design is written.

3. Find the test materials of the safety education course of college students, and study and design targeted the safety education course of college student test paper with other teachers. After the expert review and suggestion, the suggestion is modified to write the final the safety education course of college student test papers. One week before the start of the experiment, through physics class 1 of research participants conduct pre -test testing, record pre-test results.

4. Find relevant questionnaires and interview materials, write questionnaires and interview questions related to cooperation ability and learning satisfaction, and then review and determine the experts, and finally write the content of the questionnaires and interviews. One week before the start of the experiment, physics class 1 of research participants perform pre -test questionnaire, record the data of pre-test questionnaire.

5. Understand teaching research objects, popularize students' Peer-Assisted Learning activities, and guide companions to match, according to the students' pre -testing results and other characteristics of students， in class 1 are divided into A type (Excellent Student) B type (medium level student) and C type (learning difficult students); then A type and C type students are two -way to autonomous choice for heterogeneous pairing form I type Peer-Assisted Learning group, type B and type B students to two -way autonomous choice for homogeneous pairing form II type Peer-Assisted Learning group; Teachers give positive guidance and coordination when students choose pairing companions, so physics class 1 can be divided into 15 Peer-Assisted Learning groups. After the pairing is completed, the pairing students are at the same table of each other. If there are special circumstances, they will be fine -tuned to the seats of some students.

Teaching experiment process:

By conducting Peer-Assisted Learning teaching in the safety education course of college students, Class 1 student in physics of research participants, actual classroom observation, understanding the participation of students' Peer-Assisted Learning, observe the specific performance of students in the process of studying the implementation of students in the process of learning and implementation, give full play to the role of Peer-Assisted Learning, improve the practical effect of teaching.

After the teaching experiment is over:

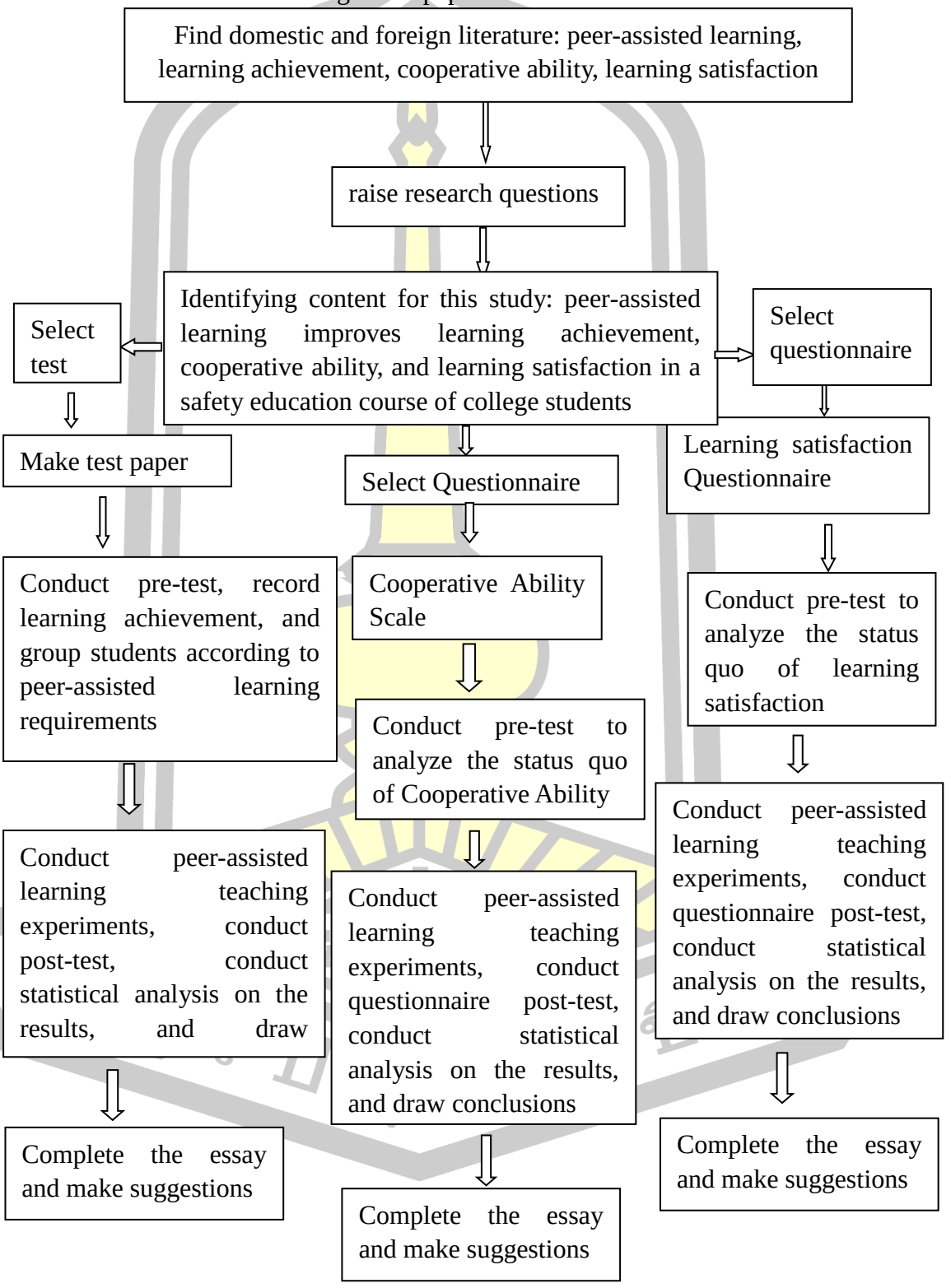
1. Through physics class 1 of research participants conduct post-test testing, record post-test results.

2. Through physics class 1 of research participants conduct post-test questionnaire and interview, record the data of post-test questionnaire and record interview content.

3. Results analysis: Based on the test, questionnaire, interview, makes an overall analysis on whether Peer-Assisted Learning can improve cooperative ability and learning satisfaction, which is analyzed by SPSS and other tools. Feedback and improvement of existing problems. Finally, summarize and reflect.

The research framework of this paper is shown in Figure 1.

Figure 1paper framework



Chapter III

Research Methods

In order to study Peer-Assisted Learning in the Safety Education Course of College Students to the impact of achievement, cooperative ability and satisfaction, the chapter three mainly states the research method and research design, the tools, data measurement and collection, data analysis, and my third chapter will be carried out according to the following topics:

1. Research Methods
2. Research Designs
3. Instrument
   3.1 Teaching Design
   3.2 Test
   3.3 Questionnaire
   3.4 Interview
   3.5 Statistical Methods
4. Measurement and Data Collection

1. Research Methods

According to the research content of this paper, the research methods involved in the research are sorted out as follows:

Literature survey method:

Literature survey method is a scientific method to collect literature, extract useful information, collate and analyze. I collected literatures and periodicals related to this research through CNKI, and searched relevant literatures such as " Peer-Assisted Learning ", cooperative ability and learning satisfaction, so as to understand relevant knowledge, sort out and analyze relevant materials, and provide a firm theoretical basis for the smooth progress of this research. Through advanced teaching theories and

experiences at home and abroad, this paper provides theoretical basis for exploring how Peer-Assisted Learning teaching methods can improve college students' learning achievement, cooperative ability and learning satisfaction in safety education courses, so as to realize the application of Peer-Assisted Learning in practical teaching, change the teaching status and change the teaching concept, improve teaching and learning effect.

Questionnaire survey method:

Questionnaire survey, also known as questionnaire method, is a survey method in which surveyors use uniformly designed questionnaires to learn about the situation or ask for opinions from the selected survey objects. This study refers to a large number of questionnaires related to Peer-Assisted Learning, and ADAPTS according to the actual situation of this study. Through conducting Peer-Assisted Learning in the Safety Education Course of College Students, questionnaires are conducted on the research objects to understand the participation of students in Peer-Assisted Learning, and an overall analysis is made on whether Peer-Assisted Learning can improve cooperative ability and learning satisfaction. The author adopts the questionnaire survey method before and after the experiment. The two questionnaires were participated in 30 students in the experimental research. In the two survey questionnaire distribution, the author explained the purpose of the questionnaire, and emphasized that the questionnaires were anonymous. It was just to cooperate with this experimental study and required students to fill in according to their learning situation and real ideas, and promised not to affect the students' performance and performance in school. In the end, 30 questionnaires were distributed before and after the experiment, and all were recovered. The author checked the students' answers, which met the requirements.

Interview survey method:

Interview survey method is referred to as "interview method". Interview is one of the oldest and most commonly used methods in social surveys. It is an investigation method in which investigators collect verbal data by talking with the subject of

investigation. This study is mainly to conduct individual interviews with students, understand the students' attitudes and feedback of the attitude of companions for mutual assistance, and conduct overall analysis of whether the Peer-Assisted Learning can improve cooperative ability and learning satisfaction. After the teaching experiments, after the students' consent, of the students at different levels of the study objects, two excellent students, two medium level students, and two learning difficult students from the students at different levels of research targets were randomly drawn from them. Interviews and interviews Researchers conduct text records of the content of the interview, and replenish the experimental results through the results of the interview results.

Literature survey method, questionnaire survey method, and interview survey method is a research method used by many researchers, such as Zhang Meijie in her research "The Research on Application Effect of Peer-Assisted Learning in Senior High School English Writing Teaching" Chinese and foreign databases input keywords, "English Writing", "High School English Writing", "Peer-Assisted Learning", etc. Research status of teaching; read the literature of other disciplines in other disciplines, and extract and summarize the connotation and application strategy of Peer-Assisted Learning. The investigation and research method of this study mainly includes the questionnaire method and interview method. She distributed a pre -designed questionnaire before and after the experiment through the questionnaire survey, mainly to measure the changes in students' learning interest, mutual assistance consciousness, and classroom participation. The interview survey law interviewed the students and teachers of the experimental class before and after the experiment. Some middle school English teachers before the experiment. The interviews after the experiment are mainly for teachers in the experimental class; in terms of students, students at different levels of experimental classes are mainly interviewed to understand the current situation of high school English writing teaching and their feelings for mutual assistance learning and harvest in Peer-Assisted Learning(M. Zhang, 2018). The first research method used

by Wu Mingxia is the literature survey method. By consulting the literature, analysis and sorting out the research results of learning satisfaction and master's degree in education at home and abroad, the literature reviews accordingly. Secondly, the questionnaire survey method is an important way to collect empirical data. This research method can help researchers to infer the characteristics of the entire group through analysis of samples. And the questionnaire survey has high efficiency, suitable for computer processing data for quantitative analysis. Finally, the interview survey method, the reaction obtained by giving a group of representative interviewees is based on the prediction of the attitudes and behavior reactions of all the specific problems(Wu, 2021). Pu Qiuyu through the literature survey method through comprehensive collection, sorting and analyzing the development status of students' learning satisfaction on online curriculum resources. She uses the interview with college students through interviews with online curriculum resources to learn about the effects of online curriculum resource design and students' learning satisfaction. According to the interview results, the influencing factors are screened and the subsequent questionnaires are modified. Experts consultation, clarify the effects of influencing factors of online curriculum resource learning satisfaction, so as to prepare effective scientific questionnaires based on influencing factors models. She designed the "Influential Factors of Online Curriculum Resources Learning Satisfaction Factors" through the actual application of the questionnaire survey method. By conducting a questionnaire survey to college students, and scientifically handled and analyzed the data, it was based on determining that it would affect students online The main factors of the satisfaction of curriculum resources, clarify the current situation of the learning satisfaction of online curriculum resources(Pu, 2022). Researchers such as Zhang Meijie, Wu Mingxia, Pu Qiuyu used the literature survey method, questionnaire survey method, and interview investigation method. These three research methods are effective. Therefore, according to the needs of this article, these three effective research methods have also been used.

2. Research Designs

Preparation before teaching experiments:

1. Find the information on the safety education course of college students. According to the requirements of the teaching design, study and design the teaching design of the safety education course of college students related to Peer-Assisted Learning methods. After review by experts, the final the safety education course of college students teaching design is written.

2. Find the test materials of the safety education course of college students, and study and design targeted the safety education course of college student test paper with other teachers. After the expert review and suggestion, the suggestion is modified to write the final the safety education course of college student test papers. One week before the start of the experiment, through physics class 1 of research participants conduct pre -test testing, record pre-test results.

3. Find relevant questionnaires and interview materials, write questionnaires and interview questions related to cooperation ability and learning satisfaction, and then review and determine the experts, and finally write the content of the questionnaires and interviews. One week before the start of the experiment, physics class 1 of research participants perform pre -test questionnaire, record the data of pre-test questionnaire.

4. Understand teaching research objects, popularize students' Peer-Assisted Learning activities, and guide companions to match, according to the students' pre -testing results and other characteristics of students in class 1 are divided into A type (Excellent Student) B type (medium level student) and C type (learning difficult students); then A type and C type students are two -way to autonomous choice for heterogeneous pairing form I type Peer-Assisted Learning group, type B and type B students to two -way autonomous choice for homogeneous pairing form II type Peer-Assisted Learning group; Teachers give positive guidance and coordination when students choose pairing companions, so physics class 1 can be divided into 15 Peer-Assisted Learning groups. After the pairing is completed, the pairing students are

at the same table of each other. If there are special circumstances, they will be fine -tuned to the seats of some students.

Teaching experiment process:

By conducting Peer-Assisted Learning teaching in the safety education course of college students, Class 1 student in physics of research participants, actual classroom observation, understanding the participation of students' Peer-Assisted Learning, observe the specific performance of students in the process of studying the implementation of students in the process of learning and implementation, give full play to the role of Peer-Assisted Learning, improve the practical effect of teaching.

After the teaching experiment is over:

1. Through physics class 1 of research participants conduct post-test testing, record post-test results.

2. Through physics class 1 of research participants conduct post-test questionnaire and interview, record the data of post-test questionnaire and record interview content.

3. Results analysis: Based on the test, questionnaire, interview, makes an overall analysis on whether Peer-Assisted Learning can improve cooperative ability and learning satisfaction, which is analyzed by SPSS, EXCEL and other tools. Feedback and improvement of existing problems. Finally, summarize and reflect.

3. Instrument

3.1 Teaching Design

By designing the teaching design of the Safety Education course of College Students about Peer-Assisted Learning method, the students of Class 1, Grade 2020 students majoring in physics, College of Mathematics, Physics and Electronic Information Engineering, Guangxi Normal University for Nationalities, were carried out Peer-Assisted Learning activities to learn the course content.

The Validity of Teaching Design

1. The researchers have compiled the teaching design of college students' safety education curriculum according to the principle of teaching design, and write the

teaching design of college student safety education curriculums related to mutual assistance learning teaching methods. A total of 6 chapters, 6 teaching designs, each teaching design content includes teaching goals, teaching focus and learning difficulty, teaching content and time arrangement, teaching content organization and process design.

2. The researchers handed the teaching design to three experts who have the following criteria:

(1). Higher qualification in education and teaching involvement.

(2). At least 10 years working experience in education and development.

(3). Supportive and eager in education enhancement.

The 3 experts consisted of:

Expert 1: Yi Qishun, a professor, 26 years working experience in education，working in Guangxi Normal University for Nationalities.

Expert 2: Li Fansheng, a professor, 26 years working experience in education，working in Guangxi Normal University for Nationalities.

Expert 3: Huang Lingzhi, lecturer, director of teaching and research of the safety education course of college students, 25 years working experience in education working in Guangxi Normal University for Nationalities.

3. Then，experts then verify the content of the teaching design. The teaching design content is measured by the Item Objective Congruency Index (IOC Index). More specifically, a content expert evaluated each item by giving the item a rating scale as follows:

1 Refers to experts sure the item responds the content.

0 Refers to experts are not sure the items respond the content.

-1 Refers to experts are sure the items does not respond the content

The IOC index ranged from -1 to 1. The acceptable range of the International Olympic Committee Index should be higher than 0.5. The teaching design content with less than 0.5 should be improved or modified.

The result of IOC index of the teaching design content was 0.67-1. For the teaching design content, the result of IOC index of Chapter 1 Personal Safety education was0.67-1, the result of IOC index of Chapter 2 Property security education was 0.67-1, the result of IOC index of Chapter 3 Traffic safety education was 0.67-1, the result of IOC index of Chapter 4 Fire safety education was 0.67-1, the result of IOC index of Chapter 5 Mental health education was 0.67-1, the result of IOC index of Chapter 6 Network security education was 0.67-1, all the teaching design content had IOC index higher than 0.5. Nevertheless, the experts also put forward some suggestions accordingly, it is recommended to increase peer-assisted learning in the design of the teaching process.

Table 1The result of IOC index of the teaching design content

Teaching design content	Experts 1	Experts 2	Experts 3	IOC
Chapter 1 Personal Safety education				
Teaching goals	1	1	1	1.00
Teaching focus and learning difficulty	1	1	1	1.00
Teaching content and time arrangement	1	1	1	1.00
Teaching content organization and process design	1	0	1	0.67
Chapter 2 Property security education				
Teaching goals	1	1	1	1.00
Teaching focus and learning difficulty	1	1	1	1.00
Teaching content and time arrangement	1	1	0	0.67
Teaching content organization and process design	1	1	0	0.67
Chapter 3 Traffic safety education				
Teaching goals	1	1	1	1.00
Teaching focus and learning difficulty	1	1	1	1.00

Teaching design content	Experts 1	Experts 2	Experts 3	IOC
Teaching content and time arrangement	1	1	1	1.00
Teaching content organization and process design	1	0	1	0.67
Chapter 4 Fire safety education				
Teaching goals	1	1	1	1.00
Teaching focus and learning difficulty	1	1	1	1.00
Teaching content and time arrangement	1	1	1	1.00
Teaching content organization and process design	0	1	1	0.67
Chapter 5 Mental health education				
Teaching goals	1	1	1	1.00
Teaching focus and learning difficulty	1	1	0	0.67
Teaching content and time arrangement	1	1	1	1.00
Teaching content organization and process design	0	1	1	0.67
Chapter 6 Network security education.				
Teaching goals	1	1	1	1.00
Teaching focus and learning difficulty	1	1	1	1.00
Teaching content and time arrangement	1	1	1	1.00
Teaching content organization and process design	1	1	0	0.67

4. The researchers make amendments to the teaching design content according to the suggestions made by the experts. After the modification is completed, the experts are reviewed. After the expert review and confirm, the teaching design will be finalized. See Appendix for details of teaching design case.

3.2 Test

Before and after test papers: In order to test the impact of Peer-Assisted Learning method of the Safety Education Course of College Students, this study has designed targeted the Safety Education Course of College Students test papers. The test papers are the same set of test questions. There are five types of questions, which are single selection questions, multiple choice questions, judgment questions, short answers, and comprehensive questions. The total score is 100 points. It mainly evaluates the basic knowledge, basic theory and practical safety issues of safety.

The Validity of Test Papers

The first step, researchers make test papers for students, There are five types of questions in this test papers, which are single selection questions (there are 6 small questions in this major question, 3 points for each small question, a total of 18 points), multiple choices questions (a total of 6 small questions in this big question, 5 points for each small question, a total of 30 points), judgment questions (a total of 10 questions in this major question, 2 points for each small question, 20 points in total), simple answers questions (5 small questions in this big question, 5 points for each question, 25 points in total) and comprehensive questions (a small question in this big question, 7 points for each small question, 7 points in total), the main ability to evaluate the basic knowledge, basic theory and actual safety issues in safety issues. The test results are the main data of this study, which is used to analyze the impact of Peer-Assisted Learning in the safety education course of college students.

The second step, the researchers handed the test papers to three experts who have the following criteria:

(1). Higher qualification in education and teaching involvement；

(2). At least 10 years working experience in education and development；

(3). Supportive and eager in education enhancement.

The 3 experts consisted of:

Expert 1: Yi Qishun, a professor, 26 years working experience in education，working in Guangxi Normal University for Nationalities.

Expert 2: Li Fansheng, a professor, 26 years working experience in education，working in Guangxi Normal University for Nationalities.

Expert 3: Huang Lingzhi, lecturer, director of teaching and research of the safety education course of college students, 25 years working experience in education，working in Guangxi Normal University for Nationalities.

Then，experts then verify the content of the test papers. The test papers content is measured by the IOC Index (Item Objective Congruency Index). More specifically, a content expert evaluated each item by giving the item a rating scale as follows:

1 Refers to experts sure the item responds the content.

0 Refers to experts are not sure the items respond the content.

-1 Refers to experts are sure the items does not respond the content

The IOC index ranged from -1 to 1. The acceptable range of the International Olympic Committee Index should be greater than 0.5. The test papers content with less than 0.5 should be improved or modified.

Table 2: The result of IOC index of the test papers content

test papers content	Experts			IOC
	1	2	3	
single selection questions				
1.Xiao Li was preparing to take a car home from the train station, and suddenly found that a strange man in front of him threw his wallet behind him. At this time, Xiao Li's correct approach was ().	1	1	1	1.00
2.Xiao Sang received an unfamiliar phone call. The other party said that because of the mistakes of customer service, Xiao Sang made a mistake into a platinum	1	1	1	1.00

test papers content	Experts			IOC
	1	2	3	
member. If the member did not cancel it, it would generate an annual fee of 600 yuan. In order to help Xiao Sang cancel the membership, I hope she can cooperate with customer service staff to complete a series of refund procedures. The following statement is correct ().				
3.The mobile QQ suddenly received a news from my roommate. The roommate told you that he had hit an old man on the road to part -time. Now he needs 2,000 yuan in hospitalization. He has no money at this time. Or a WeChat transfer, wait for him to return to school and pay you back. At this time you should ().	1	1	1	1.00
4. Facing various types of sales in college campuses, the following statement is correct ().	1	1	1	1.00
5. What should you pay attention to when college students live in a collective dormitory ()	1	0	1	0.67
6. The useful lifestyle of university campuses includes ()	1	1	1	1.00
multiple choices questions				
1. The following practices when riding, the correct are( ).	1	1	1	1.00
2. Scammers who called home and played their family's voice recording, indicating that they were abducted. In this case, the correct approach ().	1	1	1	1.00
3. There are many types of fires, and there are various methods of fire extinguishing. The following methods are correct ().	1	1	1	1.00

test papers content	Experts			IOC
	1	2	3	
4. To avoid robbery, which behaviors are correct ().	1	1	1	1.00
5. Swimming is a very beneficial physical exercise. In order to ensure safety, college students should do ().	1	1	1	1.00
6. How can college students choose part -time jobs, how to prevent being deceived? ()	1	1	1	1.00
judgment questions				
1. QQ, fetion, and WeChat's winning information pops up are credible. ()	1	1	1	1.00
2. The reputation of the online generation is illegal and illegal, and most of them are fraud trap. ()	1	1	1	1.00
3. When filling in various questionnaires on the Internet or campus, you need to be sober when you need to detailed personal information, pay attention to protecting personal information security, and beware of leakage. ()	1	1	1	1.00
4. In public places, you should be vigilant for strangers without using their drinks and food; do not go to a remote place with strangers, do not talk to strangers. ()	1	1	1	1.00
5. In the case of a secluded place or inability to resist, we should give up the property and keep the personality. When you are in a safe state, you should call the police as soon as possible. ()	1	1	0	0.67
6. On the university campus, public places such as student dormitories, classrooms, libraries and other public places are key places where student property is easily stolen. ()	1	1	1	1.00
7. When riding a bicycle, the bag and the leather bag	1	1	1	1.00

test papers content	Experts			IOC
	1	2	3	
should be carried with you instead of putting the bag in the car frame or frame. ()				
8. The bank card should be contacted with the bank in time when swallowing the card by ATM to prevent criminals from using the name of the bank to deceive the bank card information and password. ()	1	0	1	0.67
9. There are other students in the bedroom when they are sleeping, and there is no need to close the door when going out. ()	1	1	1	1.00
10. Students shall not participate in illegal MLM and cultivate cults and feudal superstition activities. ()	1	1	1	1.00
simple answers questions				
1. The concept of fraud	1	1	1	1.00
2. The concept of theft	1	1	1	1.00
3. The concept of road traffic accidents	1	0	1	0.67
4. The concept of personal injury accidents of college students	1	1	1	1.00
5. The concept of mental health	1	1	1	1.00
comprehensive questions				
1. Know the concept of fire and the main measures to prevent fires.	1	1	1	1.00

The result of IOC index of the test papers content was 0.67-1, For the test papers content, the result of IOC index of the single selection questions was 0.67-1, the result of IOC index of the multiple choices questions was 1, the result of IOC index of the judgment questions was 0.67-1, the result of IOC index of the simple answers

questions was 0.67-1, the result of IOC index of the comprehensive questions was 1, all the test papers content had IOC index higher than 0.5. Experts also brought some suggestions accordingly.

Researchers conduct the content of the test papers according to the suggestions made by the experts. After the modification is completed, the experts are reviewed. After the expert review and confirm, the final test paper is finalized.

Pre-test papers are issued before the experiment. After the teaching experiments are over, the test paper is issued to the students for post-test testing, and the test data after the collection is collected for analysis.

The Reliability of Test Papers

1.Distribute the test papers to physics class 2 students for two pre-tests, record the scores of the two pre-test and import them into SPSS for reliability analysis.

2.Reliability values are calculated using Cronbach's alpha to ensure internal consistency within the project. George Darren and Mallery Paul (2010) state that the values of the Cronbach coefficient are as follows:

>0.9=excellent, >0.8=good, >0.7=acceptable, >0.6=problematic, ≥0.5=poor, and <0.5=unacceptable. Therefore, in order for a research test papers to be reliable, its Cronbach coefficient Alpha value must be at least 0.7. According to the pre-test, Cronbach's Alpha is 0.997, so the test papers is very reliable.

The Difficulty of test papers

Difficulty calculation formula applicable to subjective and objective test papers:

$$P=(P_H+P_L)/2$$

P_H and P_L are the difficulty values of the test paper for high-group and low-group students respectively. The difficulty should be moderate, and the difficulty of the test paper should be between 0.3-0.7. The test papers with a difficulty value greater than or equal to 0.7 are regarded as easy questions; Questions greater than 0.4 and less than 0.7 are defined as mid-level questions; Test papers less than and equal to 0.4 are considered difficult.

The steps are: Arrange the total scores of the first pre-test of the physics class 2 students from high to low. 27% of all test papers are taken from the highest score downwards as the high group, P_H = 0.746; 27% of all test papers are taken from the lowest score upwards as the low group, P_L= 0.555; It is calculated that the difficulty of test paper is P=0.651, which is moderately difficult and belongs to the middle-level questions.

The Discrimination of test papers

1.The formula for calculating the discrimination degree of the test paper is:

$$D=2(X_H-X_L)/W$$

Among them, D is the discrimination degree of the test paper, X_H is the average score of the 27% high group, X_L is the average score of the 27% low group, and W is the total score of the test paper. Discrimination (D) ranges from -1.00 to +1.00. Usually D is a positive value, called positive discrimination; negative value of D is called negative discrimination; D value of 0 is called no discrimination. Test papers with positive discrimination effect, the larger the D value, the better the discrimination effect. The discrimination degree of the test paper is above 0.4, indicating that the discrimination degree of this question is very good, 0.3-0.39 indicates that the discrimination of this question is better, 0.2-0.29 indicates that the discrimination of this question is not very good and needs to be revised, below 0.19 indicates that the discrimination of this question is not good and should be eliminated.

2. Arrange the total scores of the first pre-test of the physics class 2 students from high to low. 27% of all test papers are taken from the highest score downwards as the high group, X_H =74.6; 27% of all test papers are taken from the lowest score upwards as the low group, X_L=55.5, It is calculated that the discrimination degree of test papers is D=0.383, which indicates that the discrimination degree of this question is better.

3.3 Questionnaire

Questionnaires before and after testing: In order to study the influence of students 'cooperative ability and student learning satisfaction in the teaching of

Peer-Assisted Learning in the Safety Education Course of College Students, the same setting questionnaire is used before and after the experiment. The questionnaire survey results are the main data of this study.

The Validity of Questionnaire

The first step, the researchers prepared the cooperative ability scale and the learning satisfaction questionnaire for the students respectively.

(1) The cooperative ability scale includes the following seven aspects: cooperative cognition, cooperative emotion, cooperative intention, interpersonal mutual assistance, emotional regulation, conflict management and organizational management. The cooperative ability scale questionnaire is composed of 36 questions, and adopts a five-point scoring system. According to the five-point scale standard advocated by Wu Minglong: the average score of 1.80 and below is the low level, and the average score of 1.81-2.60 is the middle and lower level. 2.61-3.40 is a medium level, 3.41-4.20 is an upper-middle level, and above 4.21 is a high level (Wang, 2020).

(2) Learning satisfaction includes classroom teaching satisfaction and learning gain satisfaction. The learning satisfaction questionnaire is composed of 6 questions and adopts the Likert five-point scale scoring method. Usually, the Likert five-point scale scoring method uses 3, 3.75, and 4.25 as critical values to judge the subjects' scores. Below 3, the effect is poor; between 3-3.75, the effect is average; between 3.75-4.25, the effect is good; above 4.25, the effect is very good (Zhang Xinyi,2022).

Then, the researchers handed the questionnaire to three experts who have the following criteria:

(1). Higher qualification in education and teaching involvement；

(2). At least 10 years working experience in education and development；

(3). Supportive and eager in education enhancement.

The 3 experts consisted of:

Expert 1: Yi Qishun, a professor, 26 years working experience in education，working in Guangxi Normal University for Nationalities.

Expert 2: Li Fansheng, a professor, 26 years working experience in education，working in Guangxi Normal University for Nationalities.

Expert 3: Huang Lingzhi, lecturer, director of teaching and research of the safety education course of college students, 25 years working experience in education，working in Guangxi Normal University for Nationalities.

The third step, Experts verify the content of the questionnaire. the content of the questionnaire were measured by using Item Objective Congruency Index. The IOC index ranged from -1 to 1. More specifically, a content expert evaluated each item by giving the item a rating scale as follows:

1 Refers to experts sure the item responds the content.

0 Refers to experts are not sure the items respond the content.

-1 Refers to experts are sure the items does not respond the content

The acceptable range of the International Olympic Committee Index should be greater than 0.5. The question with less than 0.5 should be improved or modified.

Table 3: The result of IOC index of the cooperative ability scale questionnaire

the cooperative ability scale questionnaire	Experts			IOC
	1	2	3	
cooperation awareness				
1. I believe that the development and progress of individuals and organizations cannot be separated from the cooperation between people.	1	1	1	1
2. I think that to be successful is not to be an enemy, but to cooperate with others.	1	1	1	1
3. I think cooperating with others can form a good team spirit.	1	1	1	1
4. I think that cooperating with others can help each other and	1	1	1	1

the cooperative ability scale questionnaire	Experts			IOC
	1	2	3	
make progress together.				
5. I believe that only by being good at cooperation can we win development.	1	1	1	1
6. I think cooperation is everywhere.	1	1	1	1
7. I think that cooperating with others is a must-have ability for everyone.	1	1	1	1
8. I believe that working with others can lead to a sense of belonging and fulfillment.	1	1	1	1
9. I don't feel left out when working with people.	1	1	1	1
10. I feel free when working with others.	1	1	1	1
11. I appreciate any benefits that cooperation brings to me.	1	1	1	1
12. I am very willing to cooperate with others.	1	1	1	1
13. I have high hopes for working with people.	1	1	1	1
14. I am willing to take on extra work for the team when working with others.	1	1	1	1
15. I will choose to cooperate with others even if I am frustrated.	1	1	1	1
16. In order to accomplish common goals, I am willing to dedicate and sacrifice.	1	1	1	1
17. I don't hesitate to contribute when a team or organization needs me to contribute.	1	1	1	1
cooperation skills				
18. When I work with others, I like to help each other.	1	1	1	1
19. I will complete my tasks with due diligence.	1	1	1	1
20. When someone asks me for help, I will give him tips and	1	1	1	1

the cooperative ability scale questionnaire	Experts			IOC
	1	2	3	
guidance.				
21. I am willing to share my experience or resources with others.	1	1	1	1
22. I am willing to obtain new information and information from other members of the group.	1	1	1	1
23. The expectation and encouragement among my peers will enhance my sense of responsibility and confidence in completing tasks.	1	1	1	1
24. I candidly express my views, opinions, and feelings.	1	1	1	1
25. During discussions, I ask questions proactively and express disagreement reasonably.	1	1	1	1
26. When the reasonable suggestions put forward are denied, I will look for another opportunity to express my views.	1	1	1	1
27. I clarify my job responsibilities and rights.	1	1	1	1
28. I can give myself fair evaluations.	1	1	1	1
29. I can give my peers an objective and fair evaluation.	1	1	1	1
30. I understand and tolerate the mistakes or mistakes of others.	1	1	1	1
31. I can control my emotions well.	1	1	1	1
32. I rarely have conflicts with my friends, and when I do, I resolve them quickly.	1	1	1	1
33. I adjust when my or others' attention strays from the intended task.	1	1	1	1
34. I reasonably question the opinions or actions of others.	1	1	1	1
35. I am good at breaking down work to the right people.	1	1	1	1

the cooperative ability scale questionnaire	Experts			IOC
	1	2	3	
36. I promote cooperation between myself and my team with other members and teams.	1	1	1	1

Table 4:The result of IOC index of the learning satisfaction questionnaire

the learning satisfaction questionnaire	Experts			IOC
	1	2	3	
classroom teaching satisfaction				
1. You think the atmosphere of the safety education course of college students is active.	1	1	1	1.00
2. You think that the safety education course of college students learning is interesting, you like to go to the safety education course of college students.	1	1	1	1.00
3. You will focus on the whole process and participate in class activities.	1	1	0	0.67
learning gain satisfaction				
4. Do you think you have the ability to express the content you understand clearly to your classmates.	1	1	1	1.00
5. You think that in the safety education course of college students, the ability to connect theoretical connection will be improved, the ability to analyze and solve problems.	1	1	1	1.00
6. You think you can benefit a lot while helping students learn.	1	1	1	1.00

The result of IOC index of the cooperative ability scale questionnaire was shown in table 3 and the results of IOC index of the learning satisfaction questionnaire was

shown in table 4. For the cooperative ability scale questionnaire, the result of IOC index was 1. For the learning satisfaction questionnaire，the result of IOC index of the interview was 0.67-1, all questionnaire had IOC index higher than 0.5. Nevertheless, experts have made some suggestions.

The fourth step, the researchers make modification based on the suggestions made by the experts. After the modification is completed, the experts are reviewed. After the expert review and confirm, the final questionnaire will be determined.

The fifth step, Before the experiment, the questionnaire was distributed to the students to conduct pre-test questionnaire survey, and collected the previous test paper survey data for analysis. After the teaching experiments are over, the questionnaire is issued to the classmates to conduct a post-test questionnaire survey, and the after-collected inspection papers survey data is analyzed for analysis.

Reliability of the questionnaire

1. Before the experiment started, the cooperative ability scale and the learning satisfaction questionnaire were distributed to 60 students majoring in physics for pretest, and the pretest results were imported into SPSS for reliability analysis.

2. Reliability values are calculated using Cronbach's alpha to ensure internal consistency within the project. George Darren and Mallery Paul (2010) state that the values of the Cronbach coefficient are as follows:

>0.9=excellent, >0.8=good, >0.7=acceptable, >0.6=problematic, ≥0.5=poor, and <0.5=unacceptable. According to the pretest, the Cronbach's Alpha of the cooperative ability scale is 0.849, and the Cronbach's Alpha of the learning satisfaction questionnaire is 0.84, indicating that the cooperative ability scale and the learning satisfaction questionnaire have good reliability, so they can be used for research.

3.4 Interview

In order to study the influence of students 'cooperative ability and student learning satisfaction in the teaching of Peer-Assisted Learning in the Safety Education Course of College Students, after the teaching experiments are completed, the

students with the consent of the students are randomly selected from the three different levels of students with high scores, medium, and low. The researchers recorded the text records of the interview, and the experimental results were supplemented through the interview results.

The Validity of Interview Question

Write the interview questions and submit the interview questions to three experts.

who have the following criteria for review:

(1). Higher qualification in education and teaching involvement；

(2). At least 10 years working experience in education and development；

(3). Supportive and eager in education enhancement.

The 3 experts consisted of:

Expert 1: Yi Qishun, a professor, 26 years working experience in education，working in Guangxi Normal University for Nationalities.

Expert 2: Li Fansheng, a professor, 26 years working experience in education，working in Guangxi Normal University for Nationalities.

Expert 3: Huang Lingzhi, lecturer, director of teaching and research of the safety education course of college students, 25 years working experience in education，working in Guangxi Normal University for Nationalities.

Then, Experts verify the content of the Interview Questions. the content of the Interview Questions were measured by using Item Objective Congruency Index. More precisely, experts evaluate every question by scoring each question. The IOC index ranged from -1 to 1. More specifically, a content expert evaluated each item by giving the item a rating scale as follows:

1 Refers to experts sure the item responds the content.

0 Refers to experts are not sure the items respond the content.

-1 Refers to experts are sure the items does not respond the content

The acceptable range of the International Olympic Committee Index should be greater than 0.5. The question with less than 0.5 should be improved or modified.

Table 5: The results of IOC index of interview

question	Experts 1	Experts 2	Experts 3	IOC
Use Peer-Assisted Learning in the safety education course of college students. What do you think is the biggest gain?	1	1	1	1.00
Do you think the safety education course of college students is boring and tasteless? Do you like the safety education course of college students?	1	1	0	0.67

The result of IOC index of the interview was shown in table 5 and the result of IOC index of the interview was 0.67-1, all questionnaire had IOC index higher than 0.5. Nevertheless, experts have made some suggestions. Explain that the interview question is valid.

3.5 Statistical Methods

SPSS tool was used for data analysis. The test scores of the Safety Education course of College Students were input into SPSS software for data analysis; The collected questionnaire data were input into SPSS software for data analysis.

4. Measurement and Data Collection

In order to explore the influence of students' learning achievement, student cooperative ability, and student learning satisfaction in the Safety Education Course of College Students in Peer-Assisted Learning method, this study conducted teaching experiments on the objects of research and collected related data. The relevant data of this study mainly comes from the following five parts:

(1) Pre -test score data collection

In order to ensure the reliability and effectiveness of this research, the author's first week of the study of Class 1, Grade 2020 students majoring in physics, College of Mathematics, Physics and Electronic Information Engineering, Guangxi Normal University for Nationalities at the beginning of the experiment was carried out in advanced testing of college students' safety education knowledge. Researchers have collected the knowledge of safety education in college students in recent years as the previous test papers, and after the previous test, teachers do not explain the test papers of the previous test. A total of 30 test papers were distributed, and 30 test papers were collected, of which 30 were effective test papers and 0 test papers were invalid. Therefore, the test papers were available for this study and analysis.

(2) Pre -test questionnaire survey results collection

In order to study Peer-Assisted Learning method in the teaching ability of students in the Safety Education Course of College Students, the impact of students 'cooperative ability and the satisfaction of student learning, Before the experiment was carried out, this study conducted a questionnaire survey on the cooperative ability and learning satisfaction of the research sampling, and distributed 30 portion questionnaires for the cooperative ability scale and 30 portion questionnaires for learning satisfaction questionnaire. A total of 60 questionnaires were distributed and 60 were returned, all of which were valid questionnaires.

(3) Post-test score data collection

Peer-Assisted Learning method conducted 6 weeks of teaching in the Safety Education Course of College Students, and conducted post testing of college students' safety education knowledge for the study of the students of Class 1, Grade 2020 students majoring in physics, College of Mathematics, Physics and Electronic Information Engineering, Guangxi Normal University for Nationalities. The test papers are the same set of test papers as the previous test papers. A total of 30 test papers were distributed, and a total of 30 test papers were collected, of which 30 test papers were effective and 0 test papers were invalid.

(4) Post-test questionnaire survey results collection

After conducting the experiment of Peer-Assisted Learning method, the second questionnaire survey of the research sampling's cooperative ability and learning satisfaction was carried out, and distributed 30 portion questionnaires for the cooperative ability scale and 30 portion questionnaires for learning satisfaction questionnaire. A total of 60 questionnaires were distributed and 60 were returned, all of which were valid questionnaires.

(5) Interview results collection

In order to further understand the changes in the cooperative ability and learning satisfaction of the students of Class 1, Grade 2020 students majoring in physics, College of Mathematics, Physics and Electronic Information Engineering, Guangxi Normal University for Nationalities. After the teaching experiments are completed, the students with the consent of the students are randomly selected from the three different levels of students with high scores, medium, and low. The researchers recorded the text records of the interview, and the experimental results were supplemented through the interview results.

Chapter IV Results

In order to explore the effect of Peer-Assisted Learning Method on college students' learning Achievement, it is described and analyzed by pre -test and post -test Learning Achievement. At the same time, the data collected by pre -test and post -test questionnaire were described and analyzed, and the content of the interview content was recorded and analyzed to explore the effect of Peer-Assisted Learning Method on college students' cooperative ability and learning satisfaction

1. The Effect of Peer-Assisted Learning Method on College Students' Learning Achievement

In order to explore the effect of Peer-Assisted Learning method on college students' learning achievement, this study implemented Pre -test and Post-test of the Safety Education Course of College Students, and used SPSS23.0 to analyze the data collected Pre -test and Post -test.

1.1 Pre -test and Post -test Learning Achievement's Test of Normality

Table 6: Test of Normality

	Shapiro-Wilk		
	Statistic	df	Sig.
Pre -test	.940	30	.090
Post -test	.936	30	.070

From the results, the number of samples is 30, freedom=30， Pre-test: Sig=0.09>0.05, Post-test: Sig=0.07>0.05, in line with normal distribution, can perform T test.

1.2 Analysis of Pre -test and Post -test Pairing Sample Results

This study adopts SPSS statistical software to match the tested sample T test of the pre –test and post -test score data collected by the collected university safety education，as shown in Table 7 and Table 8.

Table 7: Pre-test and Post-test paired Samples statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair1 Post-test	89.8333	30	5.42716	.99086
Pre-test	65.7667	30	7.26201	1.32586

From the data of Table 7: Before the experiment, the Pre-test Mean of the research object was 65.7667 points; after the experiment, Post-test Mean of the research object was 89.8333 points.

Table 8: Pre-test and Post-test paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair1 Post-test- Pre -test	24.06667	4.79176	.87485	22.27740	25.85594	27.509	29	.000

From Table 8, it can be seen that the average of the research objects after experiment increased by 24.06667 points, Sig. (2-tailed) = 0.000, less than 0.05, and the difference between 95%was between 22.27740 and 25.85594. It shows that there is a statistically significant difference in the learning achievement of the research subjects. Therefore, it shows that the use of Peer-Assisted Learning method to improve college students' learning achievement.

2. The Effect of Peer-Assisted Learning Method on College Students' Cooperative Ability

In order to explore the influence of peer-assisted learning teaching method on the cooperative ability of college students, this study conducted targeted pre-test and post-test cooperative ability scale questionnaires and interviews for the research subjects. The pre-test and post-test questionnaires used the same set of cooperative ability scale questionnaires. The cooperative ability scale questionnaire is composed of

36 questions, and adopts a five-point scoring system. In this study, SPSS was used to analyze the questionnaire results of the cooperative ability scale, and the interview content was recorded and summarized.

2.1 The Present Situation of Collaborative Ability of College Students

The researchers conducted a pre-test on the students in the study using the cooperative ability scale. After statistical analysis of the survey data, the comparison of the total mean score and the mean score of each dimension is shown in the Table 9:

Table 9: Comparison of the total cooperative ability means scores and the mean scores of each dimension

cooperative ability dimension	mean
cooperative ability	3.14
cooperative cognition	3.13
cooperative emotion	3.21
cooperative intention	3.06
interpersonal mutual assistance	3.12
emotional regulation	3.21
conflict management	3.11
organizational management	3.14

The cooperative ability scale includes the following seven aspects: cooperative cognition, cooperative emotion, cooperative intention, interpersonal mutual assistance, emotional regulation, conflict management and organizational management. According to the five-point scale standard advocated by Wu Minglong: the average score of 1.80 and below is the low level, and the average score of 1.81-2.60 is the middle and lower level. 2.61-3.40 is a medium level, 3.41-4.20 is an upper-middle level, and above 4.21 is a high level(Wang, 2020). As shown in Table 9, the total cooperative ability mean scores is 3.14, which is at a medium level. The mean score of the cooperative cognitive dimension is 3.13, the dimension of cooperative emotion is 3.21, the dimension of cooperative intention is 3.06, the dimension of interpersonal mutual assistance is 3.12,

the dimension of emotional regulation is 3.21, the dimension of conflict management is 3.11, and the dimension of organization management is 3.14; The mean score of cooperative emotion and emotional regulation is the highest, and the mean score of cooperative intention dimension is the lowest. It can be seen that college students' cooperative ability is the best in cooperative emotion and emotional regulation, but they lack cooperative intention.

2.2 Comparison of college students' cooperative ability between pre-test and post-test

The researchers conducted a post-test on the students in the study using the Cooperative Ability Scale. After statistical analysis of the pre-test and post-test data, the comparison of the total mean score and the mean score of each dimension of the pre-test and post-test is shown in Table 10.

Table 10: Comparison of cooperative ability between pre-test and post-test

cooperative ability dimension	pre-test mean	post-test mean
cooperative ability	3.14	4.21
cooperative cognition	3.13	4.18
cooperative emotion	3.21	4.24
cooperative intention	3.06	4.14
interpersonal mutual assistance	3.12	4.20
emotional regulation	3.21	4.27
conflict management	3.11	4.20
organizational management	3.14	4.20

As shown in Table 10, the total cooperative ability mean scores is 4.21, which is at a high level. The mean score of the cooperative cognitive dimension is 4.18, the dimension of cooperative emotion is 4.24, the dimension of cooperative intention is 4.14, the dimension of interpersonal mutual assistance is 4.20, the dimension of

emotional regulation is 4.27, the dimension of conflict management is 4.20, and the dimension of organization management is 4.20; The mean score of each dimension has been improved, and the cooperative ability has developed from a medium level to a high level, which shows that the peer-assisted learning method can effectively improve the cooperative ability of college students.

2.3 Interview results of college students' cooperative ability

Similarly, for this part, I “uses companions to learn from each other in the safety education course of college students. What do you think is the biggest gain?" This issue interviews two students with high, medium and low levels in the research object class. Through the interview summary, the students said that they experienced the fun of cooperating with each other after the peer mutual assistance learning experiments. And learned to cooperate and learn, and improve the ability of cooperation.

Part of the interview content record

A1: During this time, my results have improved, and then I have gained deeper friendship, so that I have a more pleasant mood to learn. I will study with my companions. I will understand the content that my companion doesn’t understand Listen, in this process, my knowledge points have also been consolidated, the memory will be deeper, and it is very fulfilled. By communicating with our companions, we have improved our ability to cooperate. I think this is my biggest gain.

B1: The use of Peer-Assisted Learning in the safety education course of college students. I think the biggest gain is to help each other between students, unite and cooperate with each other, can grow up and make up, and improve our cooperation capabilities.

C1: I think the biggest harvest of using Peer-Assisted Learning in the safety education course of college students is that I can ask my classmates when I encounter knowledge points that I don’t understand, and I am very harmonious with my current companion. So humorous and easy to understand, people are willing to learn. Through mutual help, unity and cooperation, we also improve our ability to unite and cooperate.

3. The Effect of Peer-Assisted Learning Method on College Students' Learning Satisfaction

In order to explore the influence of peer-assisted learning teaching method on the learning satisfaction of college students, this study conducted targeted pre-test and post-test learning satisfaction questionnaire and interviews for the research subjects. The pre-test and post-test questionnaire used the same set of learning satisfaction questionnaire. The learning satisfaction questionnaire is composed of 6 questions, and adopts a five-point scoring system. In this study, SPSS was used to analyze the questionnaire results of the learning satisfaction, and the interview content was recorded and summarized.

3.1 The Present Situation of Learning Satisfaction of College Students

The researchers conducted a pre-test on the students in the study using the Learning Satisfaction Questionnaire. After statistical analysis of the survey data, the comparison of the total mean score and the mean score of each dimension is shown in the Table11.

Table 11: Comparison of the total learning satisfaction means scores and the mean scores of each dimension

learning satisfaction dimension	pre-test mean
learning satisfaction	3.12
classroom teaching satisfaction	3.08
learning gain satisfaction.	3.17

Learning satisfaction includes classroom teaching satisfaction and learning gain satisfaction. The learning satisfaction questionnaire is composed of 6 questions and adopts the Likert five-point scale scoring method. Usually, the Likert five-point scale scoring method uses 3, 3.75, and 4.25 as critical values to judge the subjects' scores. Below 3, the effect is poor; between 3-3.75, the effect is average; between 3.75-4.25, the effect is good; above 4.25, the effect is very good (X. Zhang, 2022).

As shown in Table 11, the all mean score of college students' learning satisfaction is 3.12, indicating that the effect is average. The mean score of classroom teaching satisfaction is 3.08, and the mean score of learning gain satisfaction is 3.17. It can be seen that the effect of college students on classroom teaching satisfaction and learning gain satisfaction is average.

3.2 Comparison of college students' learning satisfaction between pre-test and post-test

The researchers conducted a post-test on the students in the study using the learning satisfaction questionnaire. After statistical analysis of the pre-test and post-test data, the comparison of the total mean score and the mean score of each dimension of the pre-test and post-test is shown in Table 12.the mean score of post-test of college students' learning satisfaction is 4.26, indicating that the effect is very good. The mean score of the classroom teaching satisfaction dimension is 4.16, indicating that the effect is good; the mean score of the learning gain satisfaction dimension is 4.37, indicating that the effect is very good; the mean score of each dimension has improved, and the learning satisfaction has developed from the average effect to the very good effect. This shows that the peer-assisted learning method can effectively improve the learning satisfaction of college students.

Table 12: Comparison of learning satisfaction between pre-test and post-test

learning satisfaction dimension	pre-test mean	post-test mean
Learning satisfaction	3.12	4.26
classroom teaching satisfaction	3.08	4.16
learning gain satisfaction.	3.17	4.37

3.3 Interview results of college students' learning satisfaction

Similarly, for this part, after experiment, the author "Do you think the safety education class of college students is boring? Do you like to take college students 'safety education lessons?" This issue interviews two students with high, medium and low levels in the study class. Through the interview, students have a negative learning

satisfaction with college students' safety education. The atmosphere of the Safety Education Course of College Students has become easy and lively, vivid and interesting, and their learning interest has been inspired, and the confidence of learning has also increased. With the continuous learning time of companions, they gradually trust their companions, and they also experience the fun of cooperating with each other. They think that the current college students' safety education courses are very interesting and they are willing to go to college students' safety education courses, which improves students' learning satisfaction.

Part of the content record

A1: I don't think the safety education course of college students is boring. I like to go to the safety education course of college students now. In the past, I listened to the teacher seriously, and then completed the assignments arranged by the teacher. There was no excessive communication with my classmates. Therefore, many students in the class thought that I was not good at getting along, and I rarely asked me the question. However, the teacher's safety education teacher gave us a group. My partner is a very active person. His enthusiasm drives me. In the classroom, we communicate with each other. And the current class of college students' safety education class is very active, and I think it is quite interesting.

B1: I think the safety education course of college students is not boring. The current atmosphere of the safety education class of college students is very active. Everyone actively raises hands to speak, which is very interesting. It also improves the friendship between students and improves our learning satisfaction.

C1: I think the safety education course of college students is very active, it makes people feel boring, and the learning efficiency is naturally much higher; and before mutual assistance, we have time to think independently. I like the safety education course of college students.

Chapter V Conclusion and Discussion

This chapter contents are purpose of the research, summary of the major research finding, conclusion of the research, limitations of the research and recommendations for further research. The content of research is described as follows:

1. Purpose of the Research
2. Summary of the Major Research Finding
3. Conclusions of the Research
4. Limitations of the Research
5. Recommendations for Further Research

1. Purpose of the Research

This research has three purposes, as follows:

(1) To explore applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' learning achievement of physics majors in Guangxi Normal University for Nationalities.

(2) To explore applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' cooperative ability of physics majors in Guangxi Normal University for Nationalities.

(3) To explore applying Peer-Assisted Learning method in the safety education course of college students to enhance college students' learning satisfaction of physics majors in Guangxi Normal University for Nationalities.

2. Summary of the Major Research Finding

The results of this research were discussed based on the research questions as follows:

1. Peer-Assisted Learning can effectively improve the learning achievement of the safety education course of college students.

In the first week of the experiment, the research target conducted a pre -test of the safety education knowledge of college students. Then, the Peer-Assisted Learning

were applied to the safety education course of college students, and the 6 -week experimental teaching was conducted. After the experimental teaching, the research objects were tested after the research objects. Finally, test results before and after experiments, sort out data forms, and perform data analysis and discussion. Experimental data shows that the results of post-test are significantly higher than the results of the pre-test. The analysis results show that Peer-Assisted Learning can effectively improve the learning achievement of the safety education course of college students. Zhang Wenya application of Peer Assisted Learning in high school English application writing is written for classroom teaching, and a three -month teaching experiment was conducted. After three months of teaching experiments, after experimenting with 61 research objects, the test scores before and after experiments were tested into data forms, and data analysis and discussion were performed. The analysis results show that the study of Peer Assisted Learning not only effectively alleviates the anxiety before most of the English applied text writing of high school students, enhances the interest in English application writing, but also largely improves the writing performance and English application writing ability of high school students to a large extent(Zhang,2021). Luo Shiqi from Southwest University in her study “Effect of Peer-assisted Learning on Senior High School Students Writing Competence in English Continuation Writing Task”, apply the peer-assisted learning to the teaching of continuation writing task, aiming at exploring the influence of peer-assisted learning on the writing scores, accuracy, fluency and complexity of continuation writing task of senior high school students at different levels. Students from Class 9 and Class 11of a school in Sichuan Province were taken as research participants, in which Class 9 is the experimental class (EC) an d Class 11 is the control class (CC). According to the pre-test results, the author divided 44 participants in EC into high-score group(HG)and low-score group (LG). The comparative experiment 1aste d for 11 weeks, in which every two weeks was a writing cycle, and six writing experiments were conducted. The EC was conducted under the

peer-assisted 1earning mode, while the participants in cc complete d the writing task independently. it can be concluded that peer-assisted 1earning has positive effects on the writing scores, accuracy, fluency, and complexity of senior high English continuation writing task(Luo, 2020). The research results of this paper are also consistent with the research results of Shen Zhengfu, Qi Yulong, Feng Lili, Chen Xiaobin (Shen et al., 2014) et al. studied “Application of Peer-Assisted Learning in the safety education course of medical students”. Therefore, Peer-Assisted Learning can effectively improve the learning achievement of the Safety Education Course of College Students.

2. Peer-Assisted Learning improves college students' cooperative ability in the safety education course of college students.

Before conducting the experiment, a pre-test questionnaire of the cooperative ability scale was conducted. After conducting the peer-assisted learning teaching experiment, the researchers used the cooperative ability scale to conduct a second questionnaire survey on the research subjects. At the same time, among the excellent students, middle-level students and students with learning difficulties, two students were randomly selected to accept their interviews through the results of the interviews to supplement the results of the experiment. Finally, the results of the pre-test and post-test of the cooperative ability scale questionnaire were organized into a data table, and the data analysis and discussion were carried out. The total mean post-test score of college students' cooperative ability is 4.21, which is higher than the total mean score of college students' cooperative ability pre-test, which is 3.14. The mean score of each dimension has improved, and the cooperative ability has developed from a medium level to a high level. Therefore, Peer-Assisted Learning improves college students' cooperative ability in the safety education course of college students.

The research results of this thesis are consistent with Chen Yunjuan's research on how peer assisted learning can improve students' cooperative ability in high school physics exercises. Chen Yunjuan through the questionnaire survey method, she

explored her peer-assisted learning to study in the development of high school physics exercises, and fully understood the students' awareness of mutual assistance and the status quo of mutual assistance. Then, according to the current status of the exercise class and the status quo of the students, the principles and strategies of mutual assistance to learn from the high school physics exercises. In the end, she chose a class in the second grade she taught to conduct two -month practice, and adopted the questionnaire survey method and interview method to understand the practical effect. According to analysis, the grouping of peer-assisted learning can achieve better results with heterogeneous grouping. Carrying out peer-assisted learning in the exercise class can improve students' mutual awareness, stimulate students' learning interest, enhance students' thinking ability and solve problems to solve problems The ability to promote students 'language expression and cooperation, and promote students' interpersonal communication ability(Chen, 2021). This paper explains that cooperative ability includes cooperative cognition, cooperative emotion, cooperative intention, interpersonal mutual assistance, emotional regulation, conflict management and organizational management. Therefore, improving mutual awareness, cooperation awareness, interpersonal communication and other abilities is equivalent to improving cooperation ability. The research results of this paper are also consistent with the research results of Shen Zhengfu, Qi Yulong, Feng Lili, Chen Xiaobin (Shen et al., 2014) studied “Application of Peer-Assisted Learning in the safety education course of medical students” and found that the PAL teaching practice improved the cooperative ability of medical students. so peer-assisted learning improves college students' cooperative ability in the safety education course of college students.

3. Peer-Assisted Learning improves college students' learning satisfaction in the safety education course of college students.

Before conducting the experiment, a pre-test questionnaire survey of learning satisfaction was conducted among the research subjects. After 6 weeks of peer-assisted learning teaching experiment, the researchers used the learning satisfaction

questionnaire to conduct a second questionnaire survey on the research subjects. At the same time, among the excellent students, middle-level students and students with learning difficulties, two students were randomly selected to accept their interviews through the results of the interviews to supplement the results of the experiment. Finally, the results of the pre-test and post-test of the learning satisfaction questionnaire are organized into a data table, and the data analysis and discussion are carried out. The total mean score of the post-test of college students' learning satisfaction is 4.26, which is higher than the total mean score of 3.12 of the pre-test of college students' learning satisfaction. The mean score of each dimension has improved, and the learning satisfaction has developed from average effect to very good effect. The peer-assisted learning method can effectively improve the learning satisfaction of college students.

The research results of this paper are consistent with the research results of Shen Zhengfu, Qi Yulong, Feng Lili, Chen Xiaobin (Shen et al., 2014) studied “Application of Peer-Assisted Learning in the safety education course of medical students”, enhanced the ability of medical students to solve practical safety problems and autonomous learning, and improved teaching satisfaction. Therefore, the peer-assisted learning method can improve the learning satisfaction of college students.

3. Conclusion of the Research

Peer-Assisted Learning has a great positive impact on the safety education course of college students. The specific performance is as follows:

First of all, Peer-Assisted Learning can effectively improve the learning achievement in the safety education course of college students. According to the data of the pre -test papers and post -test papers of the Safety Education Course of College Students, it can be seen that there are significant differences in the scientific sense of the research objects in the statistically sense. Therefore, this study believes that Peer-Assisted Learning can effectively improve the learning achievement of the safety education course of college students.

Secondly, peer-assisted learning improves the cooperative ability of college students in the safety education course of college students. Before the experiment, the willingness to cooperate among the students was not strong, and the unity and cooperation were not enough. After the experiment, the students' willingness to help each other increased. Peers learn from each other, supervise each other, help each other, cooperate in solidarity, and improve the cooperative ability of students.

Finally, peer-assisted learning improves the learning satisfaction of college students in the safety education course of college students. Before the experiment, students were not very satisfied with the active classroom atmosphere of safety education for college students, lacked interest in learning, and could not concentrate on learning. After the experiment, the students expressed their willingness to take the safety education class for college students. They felt that the safety education class for college students was lively and interesting, and they were satisfied with the effect of peer-assisted learning in the safety education course of college students. In short, the use of peer-assisted learning can make the classroom atmosphere active, classroom learning more lively and interesting, students can concentrate more on participating in classroom activities, students have the ability to clearly express what they understand to classmates, and improve the connection between theory and practice. The ability to analyze and solve problems further explains the improvement of learning satisfaction.

Peer-Assisted Learning in the safety education course of college students to enhance learning achievement, cooperative ability and satisfaction, and learning satisfaction. In the process of mutual assistance, the group members discuss, care and support each other, can improve team cooperation capabilities, and increase trust, understanding, and emotions between mutual. A positive companion relationship between students has a positive and important impact on their learning, promoting students' cognition, emotion and social development.

4. Limitations of the Research

With the continuous research of teaching experiments, the author realizes that there are some shortcomings in this study, mainly as follows:

First, the samples are less. This study only experimented with 30 students from the students of Class 1, Grade 2020 students majoring in physics, College of Mathematics, Physics and Electronic Information Engineering, Guangxi Normal University for Nationalities. Its sample objects may not be a typical representative of Chinese college students. For quantitative analysis, the more samples, the more scientific the experimental results. Therefore, I hope that the future research will expand the sample volume accordingly to make the results more convincing.

Secondly, due to the limited teaching experience and ability of personal teaching, the teachers need to have high professional qualities and multiple roles to change in the safety education course of college students where Peer-Assisted Learning. Therefore, I will continue to strengthen their own quality in the future.

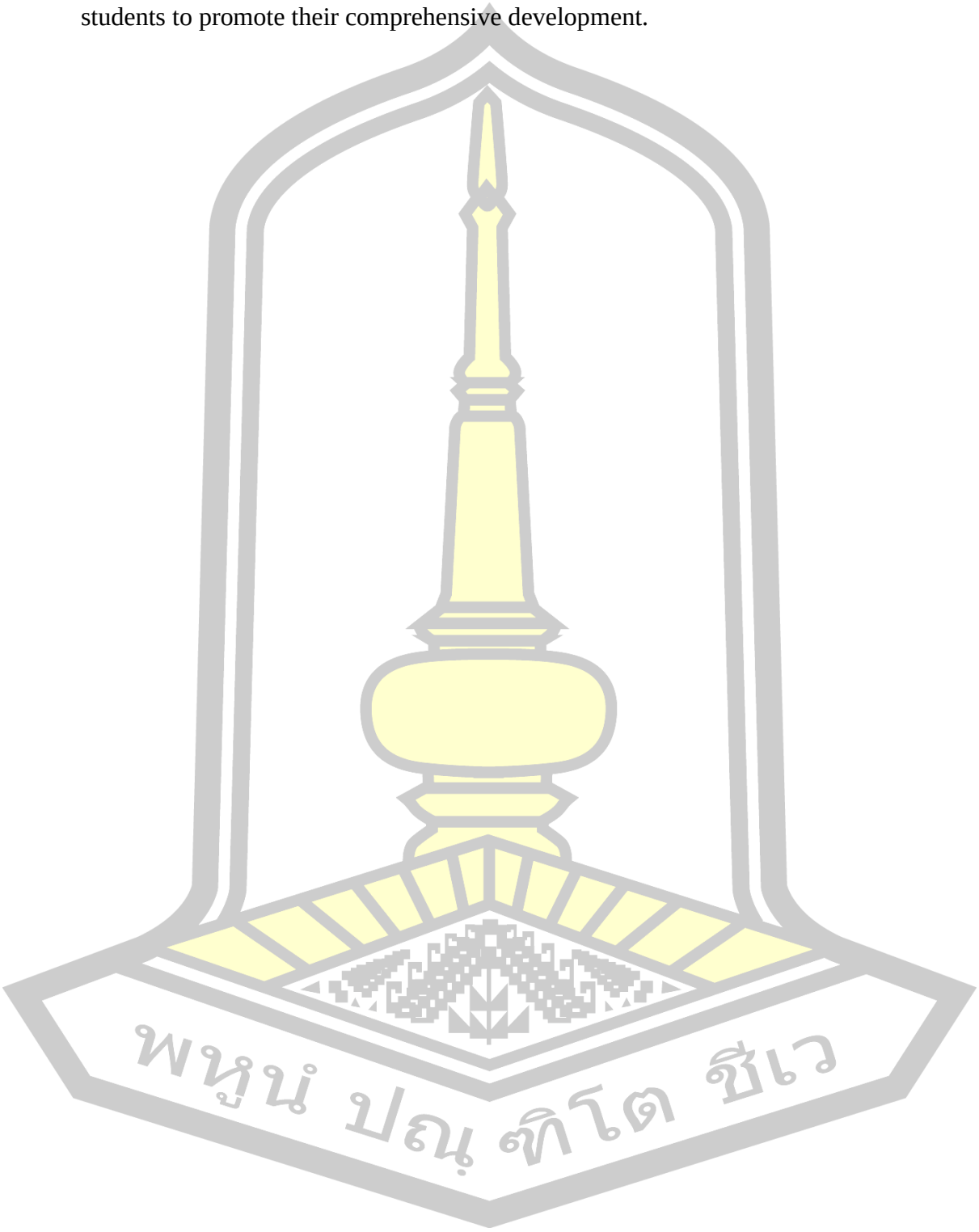
5. Recommendations for Further Research

After the experiment, the author reflects the results of this experiment. The following suggestions are made on how teachers implement Peer-Assisted Learning in the safety education course of college students:

First of all, the use Peer-Assisted Learning in the safety education course of college students, students are the main body of knowledge construction. Teachers should pay attention to role conversion, based on the long -term development of students, guide students, and change the previous conventional teaching methods.

Secondly, teachers should attach importance to the way of cultivating students' extra - Peer-Assisted Learning. The classroom time is very limited. It is not enough to rely on the Peer-Assisted Learning of peers in the class. It is also necessary to unite and collect college students' safety education knowledge in unity and mutual assistance of college students. In particular, the theory is connected with the actual situation. Therefore, teachers should pay attention to reasonable arrangement of extra

- Peer-Assisted Learning to learn the tasks to better develop and exercise all aspects of students to promote their comprehensive development.



Appendix

Appendix A Teaching Design Case

Chapter 1 Personal Safety education
Teaching goals:
1. The concept of understanding personal injury 2. Compare the differences between "personal injury accidents" and "personal injury cases" 3. Recognize the characteristics and types of college students' personal injury accidents 4. Reasons to understand the personal injury accident of college students 5. Prevention measures for personal injury accidents of college students 6. Recognize the characteristics and types of college students' personal injury cases 7. Remember the point of prevention of intentional damage cases such as robbery, snatch, intentional injury, disturbance, sexual assault, etc. 8. Remember the response measures for intentional damage cases such as robbery, robbery, intentional injury, disturbance, and sexual assault 9. Know the concept and establishment conditions of legitimate defense 10. Common situations of college students wrong use of legitimate defense
Teaching focus :
1. Preventive measures for personal injury accidents of college students 2. Copy the point of preventing the cases of intentional injury cases such as robbery, robbery, intentional damage, disturbances, and sexual assault 3. Copy measures to respond to intentional injury cases such as robbery, robbery, intentional damage, disturbances, and sexual assault 4. Proper defense power to protect the personal safety of college students
Learning difficulty:

Master measures to prevent and do personal injury and cases.	
Teaching content and time arrangement(180 minutes):	
1. Concept introduction	15 minutes
2. The characteristics and type of personal injury accidents of college students	20 minutes
3. The cause of the personal injury of college students	10 minutes
4. Prevention measures for personal injury accidents of college students	20 minutes
5. The characteristics and types of college students' personal injury cases	20 minutes
6. The main points of preventing the prevention of intentional damage cases	30 minutes
7. Copy measures to deal with intentional injury cases	30 minutes
8. Know the concept of legitimate defense and the establishment conditions	15 minutes
9. Common situations for college students to use legitimate defense	20 minutes
Teaching content organization and process design:	
Teaching implementation: Teachers introduce basic concepts, interact with students, and students take the initiative to raise their hands to speak: Personal safety: The general category: including human life, health, freedom of action, residential, personality, reputation and other safety. Narrow category: For example, the original meaning of personal safety in criminal law is the safety of the body of a natural person itself. The personal safety of college students refers to the life, health, and actions of college students without illegal infringement. It is the	

primary condition for college students to survive and complete their studies. It is the most fundamental safety. Personal injury accidents in college students: (generally refers to accidents that cause death, disease, damage, damage or other losses), including personal injury accidents in college students in college students in college groups, sports, and experimental internships; Cases of personal injury caused by artificial infringement: (related incidents on litigation and illegal), including intentional injury, robbery, snatch, disturbance, and sexual assault. Part I. Personal injury accident of college students (writing on the blackboard) (1) The concept of personal injury accidents of college students (study and discuss each other between students) In educational and teaching activities implemented by universities or off -campus activities organized by school organizations, as well as school buildings, venues, other education and teaching facilities, and living facilities that are responsible for management responsibilities, causing accidents in college students' personal damage. (2) Perspective discussion of the characteristics of college students' personal injury accidents 1. The specificity of the damage object ——In college students studying and living in colleges and universities 2. The specificity of the damage location ——In school buildings, venues and other education facilities, living facilities, and living facilities with responsibilities	Key point: The difference between personal injury accidents and personal injury cases.

in schools, as well

3. The specificity of the damage time

——The period of study and life in school

(3) The type of a companion discussed the type of personal injury accidents of college students

Divided from the cause of the accident:

1. Responsibility accident: accidents caused by a certain fault of the responsible subject caused personal injury caused by college students. Including school responsibility accidents, college students' own responsibility accidents, responsibility accidents of other relevant personnel, and hybrid liability accidents.

Case I (Play Video): Drunk Student Frozen Campus

Teachers ask questions, companions discuss and raise their hands to answer questions: What are the responsible subjects in this case? What responsibilities should they assume separately?

2. Accidents: Personal injury accidents of college students due to failure to resist or unpredictable.

3. Natural disasters: personal injury accidents caused by natural factors, such as earthquakes, snow disasters, mudslides, and so on.

Division from different occasions from accidents:

1. Universities group activities

1) Types and characteristics of college group activities

2) Causes of personal injury accidents in college students during group activities.

Case 2 (Play Video): Fireworks accident 56 people injured in a school in the Philippines

3) Perspective discussion of the prevention measures for personal injury accidents in college students in group activities

Case 3 (Play Video): Stealing accident of German Music Festival 2. Sports 3. Personal injury accident in college students during experiment internships. Part II. Cases of personal injury of college students (writing on the blackboard) (1) The concept of personal injury cases of college students The case of college students' personal injury refers to a case that occurs in the high school and the campus around the campus, illegally infringe on the personal rights of college students, and causes the consequences of the personal damage of college students. (2) intentional damage 1. The concept of intentional injury The intentional damage to college students refers to the illegal intentional damage to the health of college students, which is a serious violation of the personal rights of college students. This is the most important type of personal injury cases of college students. 2. Features of intentional injury cases It has serious harm Various manifestations:) Do the actor's unilateral intentional infringement Case 4 (Play Video): Central South University: Girls in the University of China: ② The fighting and fighting behavior of both sides Case 5 (Play Video): Kunming-Drinking and Drinking of Technical Secondary Schools and Drinking	Key point: Precautions for participating in group activities. Key point: Master the correct way

Most occurred in public places. 3. Reasons for the discussion of companions to cause intentional injury cases 4. Measures of companion discussing the case of preventing intentional injury cases Strengthen the concept of legal discipline Strengthen ideological and moral cultivation Correctly resolve disputes 5. Coupled discussion measures when encountering intentional injuries (3) robbery and robbing 1. The concept and difference between companions discussed robbery and robbing 2. The characteristics of companions discussed the case of university robbery and robbery cases Time, place, goals, and means presents regularity Case 5: Two boy small forests were robbed Case 6 (Play Video): Xi'an "Anesthesia Robbery" specializes in migrant workers and college students Through cases, students can understand the characteristics of robbery cases and avoid robbery cases. Case 7 (Play Video): Late Night Speed Bag Through cases, students can intuitively understand the process of flying bags. 3. Prevention measures for companions to discuss university robbery and snatch cases It is necessary to attract high attention from ideology, strictly abide by the relevant safety regulations formulated by the school, and	to resolve disputes and avoid the occurrence of intentional injury cases. Key point: Based on cases, students can truly grasp the knowledge of prevention and response to robbery and robbing cases.

consciously implement it in specific actions, and do not give criminals a chance to take advantage of it.

4. Countermeasures to discuss the case of robbery and robbery cases

(4) Nourishing

1. The concept and type of disturbance

2. Violence

Common forms of campus violence troubles

Prevention and disposal measures for violence and disturbance

3. Communication nourishing

Common forms of communication and nourishing cases

Prevention and disposal measures for communication and nourishing

(5) Sexual assault

Case 8: Old classmates call for supper girls to go to appointment and be raped

Companion discusses what from this case to what: through the case to warn young college students, we must raise awareness of safety precautions. In the process of making friends, you should be vigilant. Do not easily agree to meet your unfamiliar friends. Go to your classmates or friends.

Part III, legitimate defense (writing on the blackboard)

(1) The concept of legitimate defense

Proper defense refers to in order to prevent illegal infringement of the country, public interest, myself, or other people's personal, property, and other rights to prevent illegal violations that cause losses to losses illegal infringement. the behavior of.

(2) The establishment of the establishment of legitimate defense

(3) Common situations of college students wrong use of legitimate defense Case discussions between companions: Is their behavior a legitimate defense? Why? Set up the case scenario, let the students analyze in conjunction with the learning, and inspect whether the students understand the proper defense. Teachers and students review the knowledge learned in this lesson together: first introduce the concepts and characteristics of college students' personal injury accidents and personal injury cases, and combined with cases of cases to learn to prevent and deal with personal injury accidents and cases. Finally, they emphasized again. Just the condition for the establishment of the defense.	
writing on the blackboard design:	
1. Personal injury accident of college students (1) The concept of personal injury accidents of college students (2) The characteristics of personal injury accidents of college students (3) The type of personal injury accidents of college students 2. Cases of personal injury of college students (1) The concept of personal injury cases of college students (2) intentional damage (3) robbery and robbing (4) Nourishing (5) Sexual assault 3. Legitimate defense (1) The concept of legitimate defense (2) The establishment of the establishment of legitimate defense	

(3) Common situations of college students wrong use of legitimate defense
Teaching reflection：
Through the concept and characteristics of college students 'personal injury accidents and personal injury cases with classmates in this lesson, they have the opportunity to communicate with students in the classroom, allowing students to speak in the initiative, fully mobilize the students' learning interest, and also mobilize the students 'learning interest. And also mobilize the students' learning interests, and also mobilize the students 'learning interest. And also mobilize the students' learning interest. And also mobilize the study interest of the students. In conjunction with cases, I discussed and learned measures to prevent and deal with personal injury accidents and cases, and finally emphasized the conditions for the establishment of legitimate defense.

Appendix B The Result of IOC Index of the Teaching Design Content

Teaching design content	Experts 1	Experts 2	Experts 3
Chapter 1 Personal Safety education			
Teaching goals	1	1	1
Teaching focus and learning difficulty	1	1	1
Teaching content and time arrangement	1	1	1
Teaching content organization and process design	1	0	1
Chapter 2 Property security education			
Teaching goals	1	1	1
Teaching focus and learning difficulty	1	1	1
Teaching content and time arrangement	1	1	0
Teaching content organization and process design	1	1	0
Chapter 3 Traffic safety education			
Teaching goals	1	1	1
Teaching focus and learning difficulty	1	1	1
Teaching content and time arrangement	1	1	1
Teaching content organization and process design	1	0	1
Chapter 4 Fire safety education			
Teaching goals	1	1	1
Teaching focus and learning difficulty	1	1	1
Teaching content and time arrangement	1	1	1
Teaching content organization and process design	0	1	1
Chapter 5 Mental health education			
Teaching goals	1	1	1
Teaching focus and learning difficulty	1	1	0
Teaching content and time arrangement	1	1	1
Teaching content organization and process design	0	1	1
Chapter 6 Network security education.			
Teaching goals	1	1	1
Teaching focus and learning difficulty	1	1	1
Teaching content and time arrangement	1	1	1
Teaching content organization and process design	1	1	0

Appendix C Test Papers

I. Single selection questions (there are 6 small questions in this major question, 3 points for each small question, a total of 18 score)

1. Xiao Li was preparing to take a car home from the train station, and suddenly found that a strange man in front of him threw his wallet behind him. At this time, Xiao Li's correct approach was ( ).

A. Immediately step forward and pick up the wallet

B. After that person leaves, wait opportunities to use the wallet as their own

C. Maybe it may be lost fraud, beware of blackmail

D. Pick up and check the identity information of the owner inside

2. Xiao Sang received an unfamiliar phone call. The other party said that because of the mistakes of customer service, Xiao Sang made a mistake into a platinum member. If the member did not cancel it, it would generate an annual fee of 600 yuan. In order to help Xiao Sang cancel the membership, I hope she can cooperate with customer service staff to complete a series of refund procedures. The following statement is correct ( ).

A. Work errors are inevitable, understand, and complement the customer service to complete the membership withdrawal.

B. It is very likely that it is telecommunications fraud. He hung up the phone immediately, reports to the counselor and the school's security office, and told it in the class group.

C. First cooperate with customer service to complete the relevant procedures, if it involves transfer, it will not cooperate.

D. Complete the customer service to complete the membership withdrawal.

3. The mobile QQ suddenly received a news from my roommate. The roommate told you that he had hit an old man on the road to part -time. Now he needs 2,000 yuan in hospitalization. He has no money at this time. Or a WeChat transfer, wait for him to return to school and pay you back. At this time you should ( ).

A. First call the authenticity of the situation first. If the abnormalities are found, immediately inform the counselor or the police

B. Resolutely don't borrow money to others, what should I do if the roommate does not pay the money?

C. Pretend not to see

D. Relying on parents at home and friends. Friends are difficult, help right away

4. Facing various types of sales in college campuses, the following statement is correct ( ).

A. If it is not very expensive, it doesn't matter

B. These salespersons say that they are the students who are diligent and frugal in our school, and they should give them support.

C. This is likely to be a consumption trap to sell inferior products. Not only do you not buy, but also report to Auntan and the Security Office

D. For more enthusiastic salespersons, you can try to buy his products | These salespersons say that they are the students who are diligent and frugal, and they should give them support

5. What should you pay attention to when college students live in a collective dormitory ( )

A. Regularly check the doors and windows of the dormitory.

B. Before going to bed or leave the dormitory, close the doors and windows

C. Keep a high degree of vigilance in strangers and pay attention to verifying the identity of the other party

D. Pay attention to the above

6. The useful lifestyle of university campuses includes ( )

A. no smoking, drinking less alcohol, hard exercise, reasonable diet

B. Smoking less, drinking less alcohol, hard exercise, reasonable diet

C. Smoking less, drinking more alcohol, hard exercise, reasonable diet

D. Smoking less, reasonable diet

II. Multiple choices questions (a total of 6 small questions in this big question, 5 score for each small question, a total of 30 score)

1. The following practices when riding, the correct are ( ).

A. Wait at the platform or designated place.

B. Do not chat with the driver or hinder the driver of the driver

C. Do not urge the driver to drive the express train

D. After getting off the car, walk out of the road from front or behind the car through the road

2. Scammers who called home and played their family's voice recording, indicating that they were abducted. In this case, the correct approach ( ).

A. Immediately remit money into the account notified by the other party

B. Don't contact the police

C. Don’t easily remit money into the account notified by the other party

D. Immediately call the police

3. There are many types of fires, and there are various methods of fire extinguishing. The following methods are correct ( ).

A. Water destroy the computer after the computer is caught fire

B. When experimenting, alcohol accidentally overflows fire with sand to cover the fire extinguishing fire

C. The small home appliance in the dormitory should cut off the power supply and be extinguished with wet

D. The grassland of the campus is on fire, and the fire is destroyed with a broom

4. To avoid robbery, which behaviors are correct ( ).

A. Do not show off valuable items,

B. Do not travel alone

C. Do not take a remote and dark place

D. Do not stay outside school

5. Swimming is a very beneficial physical exercise. In order to ensure safety,

college students should do ( ).

A. Don’t go to rivers and lakes to swim without authorization

B. Before launching the water, be sure to warm up

C. Unknown underwater conditions, don't dive diving

D. Disease, high blood pressure, tuberculosis, otitis media, skin diseases, severe trachoma, etc., and people with various infectious diseases should not swim

6. How can college students choose part -time jobs, how to prevent being deceived? ( )

A. Try to organize the talent market through the two -way selection of supply and demand meetings

B. Don't trust it, you have to understand more parties

C. Once you encounter trouble, immediately report to the student management department of the school, the security department or the public security organs

D. Go to illegal agencies to find high salary work

III. Judgment questions (a total of 10 questions in this major question, 2 score for each small question, 20 score in total)

1. QQ, Fetion, and WeChat's winning information pops up are credible. ( )

2. The reputation of the online generation is illegal and illegal, and most of them are fraud trap. ( )

3. When filling in various questionnaires on the Internet or campus, you need to be sober when you need to detailed personal information, pay attention to protecting personal information security, and beware of leakage. ( )

4. In public places, you should be vigilant for strangers without using their drinks and food; do not go to a remote place with strangers, do not talk to strangers. ( )

5. In the case of a secluded place or inability to resist, we should give up the property and keep the personality. When you are in a safe state, you should call the police as soon as possible. ( )

6. On the university campus, public places such as student dormitories,

classrooms, libraries and other public places are key places where student property is easily stolen. ( )

7. When riding a bicycle, the bag and the leather bag should be carried with you instead of putting the bag in the car frame or frame. ( )

8. The bank card should be contacted with the bank in time when swallowing the card by ATM to prevent criminals from using the name of the bank to deceive the bank card information and password. ( )

9. There are other students in the bedroom when they are sleeping, and there is no need to close the door when going out. ( )

10. Students shall not participate in illegal MLM and cultivate cults and feudal superstition activities. ( )

IV. Simple answers questions (5 small questions in this big question, 5 score for each question, 25 score in total).

1.The concept of fraud

2.The concept of theft

3.The concept of road traffic accidents

4. The concept of personal injury accidents of college students

5.The concept of mental health

V. Comprehensive questions (a small question in this big question, 7 score for each small question, 7 score in total).

1. Know the concept of fire and the main measures to prevent fires.

Appendix D The Result of IOC Index of the Test Papers Content

test papers content		E1	E2	E3
single selection questions	1.Xiao Li was preparing to take a car home from the train station, and suddenly found that a strange man in front of him threw his wallet behind him. At this time, Xiao Li's correct approach was ().	1	1	1
	2.Xiao Sang received an unfamiliar phone call. The other party said that because of the mistakes of customer service, Xiao Sang made a mistake into a platinum member. If the member did not cancel it, it would generate an annual fee of 600 yuan. In order to help Xiao Sang cancel the membership, I hope she can cooperate with customer service staff to complete a series of refund procedures. The following statement is correct ().	1	1	1
	3.The mobile QQ suddenly received a news from my roommate. The roommate told you that he had hit an old man on the road to part -time. Now he needs 2,000 yuan in hospitalization. He has no money at this time. Or a WeChat transfer, wait for him to return to school and pay you back. At this time you should ().	1	1	1
	4. Facing various types of sales in college campuses, the following statement is correct ().	1	1	1
	5. What should you pay attention to when college students live in a collective dormitory ()	1	0	1
	6. The useful lifestyle of university campuses includes ()	1	1	1

multiple choice questions	1. The following practices when riding, the correct are( ).	1	1	1
	2. Scammers who called home and played their family's voice recording, indicating that they were abducted. In this case, the correct approach ().	1	1	1
	3. There are many types of fires, and there are various methods of fire extinguishing. The following methods are correct ().	1	1	1
	4. To avoid robbery, which behaviors are correct ().	1	1	1
	5. Swimming is a very beneficial physical exercise. In order to ensure safety, college students should do ().	1	1	1
	6. How can college students choose part -time jobs, how to prevent being deceived? ()	1	1	1
judgment questions	1. QQ, Fetion, and WeChat's winning information pops up are credible. ()	1	1	1
	2. The reputation of the online generation is illegal and illegal, and most of them are fraud trap. ()	1	1	1
	3. When filling in various questionnaires on the Internet or campus, you need to be sober when you need to detailed personal information, pay attention to protecting personal information security, and beware of leakage. ()	1	1	1
	4. In public places, you should be vigilant for strangers without using their drinks and food; do not go to a remote place with strangers, do not talk to strangers. ()	1	1	1

	5. In the case of a secluded place or inability to resist, we should give up the property and keep the personality. When you are in a safe state, you should call the police as soon as possible. ()	1	1	0
	6. On the university campus, public places such as student dormitories, classrooms, libraries and other public places are key places where student property is easily stolen. ()	1	1	1
	7. When riding a bicycle, the bag and the leather bag should be carried with you instead of putting the bag in the car frame or frame. ()	1	1	1
	8. The bank card should be contacted with the bank in time when swallowing the card by ATM to prevent criminals from using the name of the bank to deceive the bank card information and password. ()	1	0	1
	9. There are other students in the bedroom when they are sleeping, and there is no need to close the door when going out. ()	1	1	1
	10. Students shall not participate in illegal MLM and cultivate cults and feudal superstition activities. ()	1	1	1
simple answers questions	1. The concept of fraud	1	1	1
	2. The concept of theft	1	1	1
	3. The concept of road traffic accidents	1	0	1
	4. The concept of personal injury accidents of college students	1	1	1
	5. The concept of mental health	1	1	1

comprehensive questions	1. Know the concept of fire and the main measures to prevent fires.	1	1	1

Appendix E Questionnaire

Cooperative Ability Scale

Dear students:

Hello! all information is for scientific research only. The answer you wrote down has good research value for us, please don't leave it out, thank you! Sincerely thank you for your cooperation!

Basic Information:

Student ID:_____

Gender:_____

Each of the following questions is followed by the corresponding level:
completely consent = 5, consent = 4, basic consent = 3,
disagree = 2 , completely disagree = 1

Part1. This module is mainly about the cooperative awareness. Please answer according to your real thoughts, choose the most suitable one and put it in the Tick √ on the corresponding number.

1. I believe that the development and progress of individuals and organizations cannot be separated from the cooperation between people. 1 2 3 4 5
2. I think that to be successful is not to be an enemy, but to cooperate with others. 1 2 3 4 5
3. I think cooperating with others can form a good team spirit. 1 2 3 4 5
4. I think that cooperating with others can help each other and make progress together. 1 2 3 4 5
5. I believe that only by being good at cooperation can we win development. 1 2 3 4 5
6. I think cooperation is everywhere and everywhere. 1 2 3 4 5
7. I think that cooperating with others is a must-have ability for everyone. 1 2 3 4 5
8. I believe that working with others can lead to a sense of belonging and fulfillment. 1 2 3 4 5
9. I don't feel left out when working with people. 1 2 3 4 54
10. I feel free when working with others. 1 2 3 4 5
11. I appreciate any benefits that cooperation brings to me. 1 2 3 4 5
12. I am very willing to cooperate with others. 1 2 3 4 5
13. I have high hopes for working with people. 1 2 3 4 5
14. I am willing to take on extra work for the team when working with others. 1 2 3 4 5
15. I will choose to cooperate with others even if I am frustrated. 1 2 3 4 5
16. In order to accomplish common goals, I am willing to dedicate and sacrifice. 1 2 3 4 5
17. I don't hesitate to contribute when a team or organization needs me to contribute. 1 2 3 4 5

Part 2. This part is about cooperation skills. Please answer the questions one by one according to the actual situation and tick the corresponding answer with "√".

18. When I work with others, I like to help each other. 1 2 3 4 5
19. I will complete my tasks with due diligence. 1 2 3 4 5
20. When someone asks me for help, I will give him tips and guidance. 1 2 3 4 5
21. I am willing to share my experience or resources with others. 1 2 3 4 5
22. I am willing to obtain new information and information from other members of the group. 1 2 3 4 5
23. The expectation and encouragement among my peers will enhance my sense of responsibility and confidence in completing tasks. 1 2 3 4 5
24. I candidly express my views, opinions, and feelings. 1 2 3 4 5
25. During discussions, I ask questions proactively and express disagreement reasonably. 1 2 3 4 5
26. When the reasonable suggestions put forward are denied, I will look for another opportunity to express my views. 1 2 3 4 5
27. I clarify my job responsibilities and rights. 1 2 3 4 5
28. I can give myself fair evaluations. 1 2 3 4 5
29. I can give my peers an objective and fair evaluation. 1 2 3 4 5
30. I understand and tolerate the mistakes or mistakes of others. 1 2 3 4 5
31. I can control my emotions well. 1 2 3 4 5
32. I rarely have conflicts with my friends, and when I do, I resolve them quickly. 1 2 3 4 5
33. I adjust when my or others' attention strays from the intended task. 1 2 3 4 5
34. I reasonably question the opinions or actions of others. 1 2 3 4 5
35. I am good at breaking down work to the right people. 1 2 3 4 5
36. I promote cooperation between myself and my team with other members and teams. 1 2 3 4 5

Learning Satisfaction Questionnaire

Dear students:

Hello! all information is for scientific research only. The answer you wrote down has good research value for us, please don't leave it out, thank you! Sincerely thank you for your cooperation!

Basic Information:

Student ID:_____

Gender:_____

Each of the following questions is followed by the corresponding level:
completely consent = 5, consent = 4, basic consent = 3,
disagree = 2, completely disagree = 1

Part1. This module is mainly about classroom teaching satisfaction. Please answer according to your real thoughts, choose the most suitable one and tick the corresponding number with √.

1. You think the atmosphere of the safety education course of college students is active. 1 2 3 4 5

2. You think that the safety education course of college students learning is interesting, you like to go to the safety education course of college students.

1 2 3 4 5

3. You will focus on the whole process and participate in class activities.

1 2 3 4 5

Part2. This module is mainly about learning gain satisfaction. Please answer according to your real thoughts, choose the most suitable one and tick the corresponding number with √.

4. Do you think you have the ability to express the content you understand clearly to your classmates. 1 2 3 4 5

5. You think that in the safety education course of college students, the ability to connect theoretical connection will be improved, the ability to analyze and solve problems. 1 2 3 4 5

6. You think you can benefit a lot while helping students learn.

1 2 3 4 5

Appendix F Interview

Interview question

Part 1. Use Peer-Assisted Learning in the safety education course of college students. What do you think is the biggest gain?

Part 2. Do you think the safety education course of college students is boring and tasteless? Do you like the safety education course of college students?

Appendix G Test Results of the Safety Education Course of College Students

student ID	Pre-test	Post-test
203021010101	70	95
203021010102	75	94
203021010103	62	88
203021010104	74	90
203021010105	59	80
203021010106	80	97
203021010107	58	82
203021010108	59	82
203021010109	67	90
203021010110	66	94
203021010111	68	90
203021010112	57	84
203021010113	74	98
203021010114	63	88
203021010115	76	96
203021010116	69	98
203021010117	56	82
203021010118	57	84
203021010119	64	88
203021010120	57	82
203021010121	63	90
203021010122	63	96
203021010123	55	90
203021010124	70	95
203021010125	61	90
203021010126	76	96
203021010127	75	94
203021010128	74	86
203021010129	65	90
203021040214	60	86

Appendix H Interview Record

Excellent Student ---A1 and A2

Medium level student ---B1 and B2

Learning difficult student ---C1 and C2

Part 1. **Use Peer-Assisted Learning in the safety education course of college students. What do you think is the biggest gain?**

A1: During this time, my results have improved, and then I have gained deeper friendship, so that I have a more pleasant mood to learn. I will study with my companions. I will understand the content that my companion doesn't understand Listen, in this process, my knowledge points have also been consolidated, the memory will be deeper, and it is very fulfilled. By communicating with our companions, we have improved our ability to cooperate. I think this is my biggest gain.

A2: I think the biggest gain is to learn from Peer-Assisted Learning in recent periods. In the process of Peer-Assisted Learning, the theory is connected with reality, which is very helpful for memory knowledge points, and also improves our ability to unite and cooperate.

B1: The use of Peer-Assisted Learning in the safety education course of college students. I think the biggest gain is to help each other between students, unite and cooperate with each other, can grow up and make up, and improve our cooperation capabilities.

B2: I think the greatest harvest of using Peer-Assisted Learning in the safety education course of college students is that we will discuss the problems that we cannot encounter. Sometimes the knowledge points that our companions can't be clarified repeatedly. I don't understand the knowledge points, and my companion will patiently explain to me patiently. In short, my companion mutual assistance learning has a positive role in my learning and improves our ability to unite and cooperate.

C1: I think the biggest harvest of using Peer-Assisted Learning in the safety education course of college students is that I can ask my classmates when I encounter

knowledge points that I don’t understand, and I am very harmonious with my current companion. So humorous and easy to understand, people are willing to learn. Through mutual help, unity and cooperation, we also improve our ability to unite and cooperate.

C2: I think the greatest harvest of using Peer-Assisted Learning in the safety education course of college students is that my chances of communicating with my companions in the safety education class of college students have changed. My companion will share the knowledge of safety education with me. My study provides suggestions and help. This method is conducive to my learning. Although I still have a lot of people who do not understand, I feel that I have improved before, especially sometimes my companions will have knowing knowledge, then I just know that this is really a sense of accomplishment and increased my confidence in learning. In the process of Peer-Assisted Learning, we also improve our ability to unite and cooperate.

Part 2. Do you think the safety education course of college students is boring and tasteless? Do you like the safety education course of college students?

A1: I don't think the safety education course of college students is boring. I like to go to the safety education course of college students now. In the past, I listened to the teacher seriously, and then completed the assignments arranged by the teacher. There was no excessive communication with my classmates. Therefore, many students in the class thought that I was not good at getting along, and I rarely asked me the question. However, the teacher's safety education teacher gave us a group. My partner is a very active person. His enthusiasm drives me. In the classroom, we communicate with each other. And the current class of college students' safety education class is very active, and I think it is quite interesting.

A2: I think the safety education course of college students is not boring! I like to go to the safety education course of college students. I usually explore the knowledge

of safety education with my partner, and in order to collect typical cases of college students' safety education and teaching, I will share the typical cases seen in daily life with my companions. I think this greatly arouses our enthusiasm for our learning. I quite like it.

B1: I think the safety education course of college students is not boring. The current atmosphere of the safety education class of college students is very active. Everyone actively raises hands to speak, which is very interesting. It also improves the friendship between students and improves our learning satisfaction.

B2: I think it's much better than the previous classroom. Before the university student safety education class, everyone played each other, but now because the classroom atmosphere is very active, everyone has participated in the classroom and shakes. She is still discussing cases after class! I like the safety education course of college students.

C1: I think the safety education course of college students is very active, it makes people feel boring, and the learning efficiency is naturally much higher; and before mutual assistance, we have time to think independently. I like the safety education course of college students.

C2: I think the safety education course of college students is not boring. I like to go to the safety education course of college students. Because my companion always helps me and encourage me, I feel that I have made progress every day, and I am more confident in the safety education learning of college students, and to a large extent, I have greatly improved my awareness of safety prevention.

Appendix I Expert Synopsis

Expert synopsis

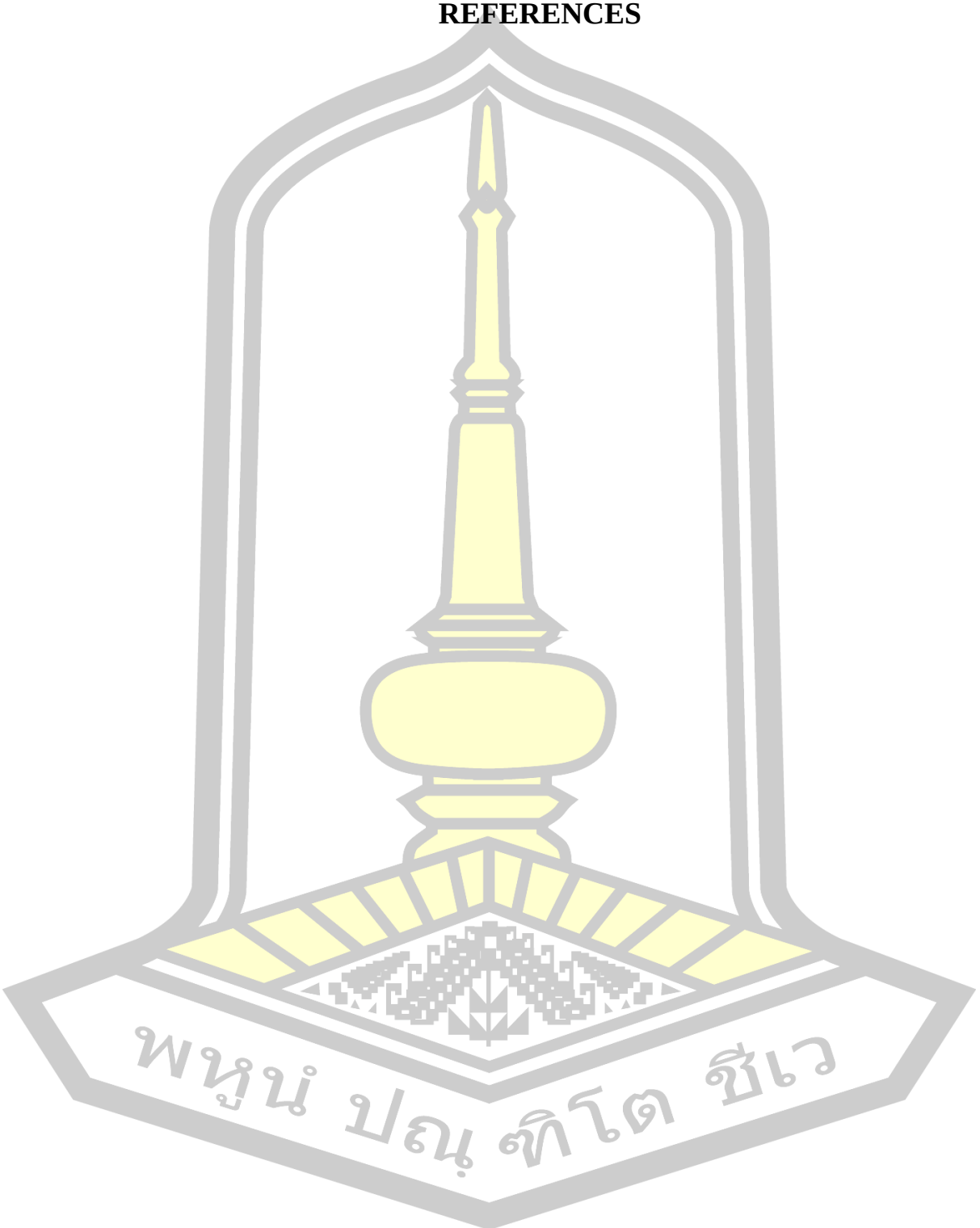
Expert synopsis

1 Yi Qishun, a professor, department head, working in Guangxi Normal University for Nationalities, 26 years working experience in education.

2 Li Fansheng, a professor, full-time teachers, working in Guangxi Normal University for Nationalities, 26 years working experience in education.

3 Huang Lingzhi, lecturer, director of teaching and research of the safety education course of college students, working in Guangxi Normal University for Nationalities, 25 years working experience in education.

REFERENCES



Chen, Y. (2021). *Study of peer-assisted learning in high school physics exercises lessons.* Nanjing Normal University.

Correa, R., Brugal, Y., Valentín, L., Pérez, J., & Pérez-Gumá, J. (2009). Peer-teaching: an effective learning experience? *Puerto Rico Health Sciences Journal*, *28*(1).

Crowley-Cyr, L., & Hevers, J. (2021). Using Peer Assisted Learning to improve academic engagement and progression of first year online law students. *Journal of University Teaching & Learning Practice*, *18*(1), 2.

Dai, Y. (2017). *Practical Study on the Effectiveness of Peer Assistant Learning in Biology Teaching of High School*. Huazhong Normal University.

Guo, Y. (2015). Research on the practice of Peer-Assisted Learning in high school physics exercise class. *Friends of Physics*, *12*, 8–12.

Han, X. (2017). *Practical research on developing peer-assisted learning in high school physics teaching*.

He, X. (2020). *Application of Peer-assisted Learning Strategies to the Teaching of English Reading--A Case Study of Grade-Four Primary School Students in a Primary School in Jinning District*.

Huang, S. (2020). *Effects of Peer-assisted Learning on Senior High School Students' English Grammar Learning. Hunan Institute of Science and Technology*.

Jiang, M., & Cai, R. (2017). The Current Situation of Safety Education for CollegeStudents at Home and Abroad and Its Enlightenment. *Social Science Journal of Shanxi Colleges and Universities*, *29*(6), 68–70.

Jiang, X. (2022). *Investigation and Research on the Students' Satisfaction of Learning Volleyball Elective Course in Anhui University*. Huaibei Normal University.

Jin, E. (2012). *The practice and theory of Peer-Assisted Learning*.

Li, F. (2009). *Research on the cultivation of college students' cooperation ability*. Nanjing University of Aeronautics and Astronautics.

Li, F. (2011). *Experimental research on the cultivation of college students' cooperative ability by group psychological counseling in physical education*

teaching. 硕士学位论文, 华中师范大学.

Liang, B. (2018). *A Study on the Influence of Role-play on Senior High School Students' Cooperative Ability in Biology Teaching*. Shanxi Normal University.

Luo, S. (2020). *Effect of Peer-assisted Learning on Senior High School Students Writing Competence in English Continuation Writing Task*.

Lv, X., & Su, Y. (2005). Research on the Compilation of Cooperative Ability Test. *Ergonomics*, *11*(2), 29–31.

Peng, Y. (2015). *The problems and countermeasures research of senior high school head teachers' cultivation of students' cooperation*. Sichuan Normal University.

Pu, Q. (2022). *Research on the Influencing Factors and Improvement Strategies of Online Course Resources Learning Satisfaction*. Central China Normal University.

Shen, Z., Qi, Y., Feng, L., & Chen, X. (2014). Application of Peer-Assisted Learning in the safety education course of medical students. *Journal of Bengbu Medical College*, *39*(6), 809–811.

Shi, Q. (2010). *Compilation of a college student physical education curriculum study satisfaction degree measurement form*.

Topping, K., & Ehly, S. (1998). *Peer-assisted learning*. Routledge.

Wang, R. (2020). *Research on the Promotion of the Cooperation Ability of Senior Primary School Students by Group Sand Table Game—Take the Fifth Grade of X Primary School in Shenyang as an Example*.

Wu, M. (2021). *Study on the Learning Satisfaction of Full-time Master of Education—A Case Study of Y University*. Yunnan Normal University.

Xiao, Y. (2011). *Research on the construction of college students' safety education model in the community environment of colleges and universities*.

Yuan, Y. (2022). *Research on Study Satisfaction of Full-time Master of Physical Education Degree Postgraduates in Henan Province*. Arizona State University.

Zhang, L. (2019). *A STUDY ON COLLEGE STUDENTS' LEARNING ATTITUDE*

AND ACADEMIC PERFORMANCE IN MOOC –TAKING AEROBICS AS AN EXAMPLE. Harbin Normal University.

Zhang, M. (2018). *The Research on Application Effect of Peer-Assisted Learning in Senior High School English Writing Teaching*. Central China Normal University.

Zhang, W. (2021). *THE EFFECTIVENESS OF PEER ASSISTED LEARNING METHOD INSENIOR HIGH SCHOOL ENGLISH PRACTICAL WRITING*.

Zhang, X. (2022). *tudy on undergraduate students' learning satisfaction and its influencing factors—Based on the investigation and analysis of L University*.

Zhang, Y. (2011). *Experiment Study on Improving University Student's Performance with Learning Strategies Training*. Shenyang Normal University.

Zuo, H., & Huang, P. (2008). HUANG Fu-quan. (2008). The Meaning of the Peer-Assisted Learning and the Research on It. *Curriculum. Textbook. Teaching Method*, *9*, 16–19.

Zuo, H., & Huang, P. (2010). The Progress and Prospective of Peer-Assisted Learning Research in Foreign Countries. *Studies in Foreign Education*, *4*, 53–59.

BIOGRAPHY

NAME	Dongfeng Liao
DATE OF BIRTH	October 26,1992
PLACE OF BIRTH	Bobai County,Yulin City,Guangxi,China
ADDRESS	Chongzuo City,Guangxi,China
POSITION	Schooltercher
PLACE OF WORK	Guangxi Normal University for Nationalities,Chongzuo City,Guangxi,China
EDUCATION	2009 Bobai middle school 2012 Guangxi Normal University for Nationalities 2023 Mater of Education in Curriculum and Instruction,Mahasarakham University