Developing Training Course for College Students to Improve Employability in Liuzhou China

Chan Li

A Thesis Submitted in Partial Fulfillment of Requirements for
degree of Doctor of Philosophy in Curriculum and Instruction
January 2025

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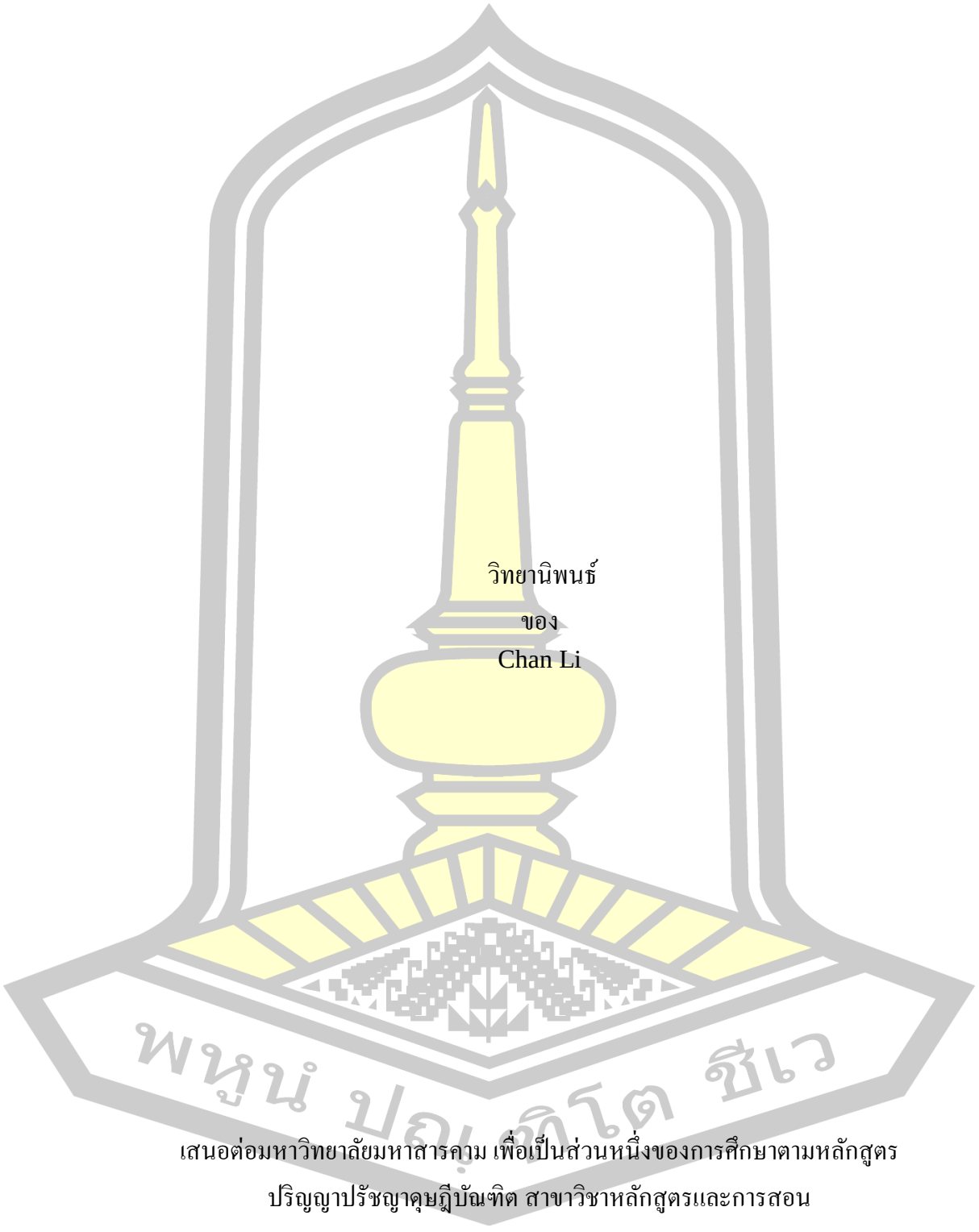

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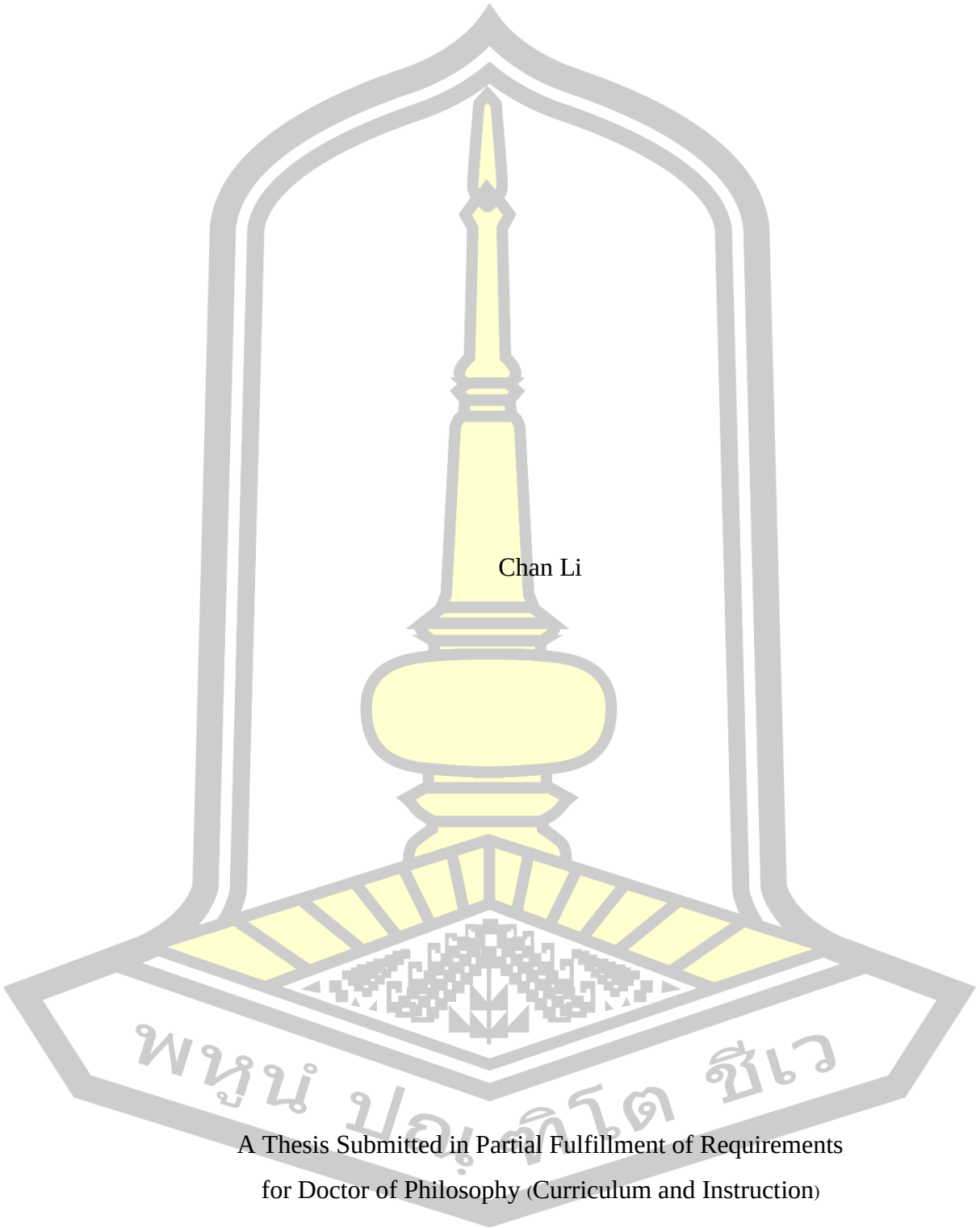

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A Thesis Submitted in Partial Fulfillment of Requirements

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The examining committee has unanimously approved this Thesis, submitted by Ms. Chan Li , as a partial fulfillment of the requirements for the Doctor of Philosophy Curriculum and Instruction at Mahasarakham University

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ABSTRACT

This research investigates the foundational information and data necessary to develop a training course aimed at improving the employability of students at Liuzhou Vocational and Technical College. Utilizing the Tyler Model along with Social Cognitive, Constructivist Learning, Experiential Learning, and Situated Learning theories, the study focuses on the design, development, and evaluation of the course. The research follows a three-phase approach: contextual analysis, course development, and implementation. The course, developed to address key employability skills, was evaluated through methods including documentary research, interviews, questionnaires, project presentations, pre- and post-tests, and statistical analysis with SPSS 23.0.

The results demonstrate that the course significantly enhanced students' teamwork, problem-solving, communication, leadership, and interpersonal skills, confirming its effectiveness in improving their employability. The course helped students better meet workplace demands and boosted their job market readiness. The study recommends refining the course to include more industry-relevant content, interactive learning, and personalized career guidance, while emphasizing the importance of ongoing teacher training. Future research should focus on comparative analyses of similar training courses and case studies on industry-specific skill development, highlighting the value of targeted employability training in vocational education.

Keyword : Training Course, Employability Teamwork Skills, Problem-Solving Skills, Communication and Coordination Skills, Leadership Skills, Interpersonal Skills

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Chan Li

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CHAPTER I

INTRODUCTION

1.1 Background

With the rapid economic development in China, the demand for highly skilled labor has continuously increased, placing immense pressure on college graduates to meet the evolving needs of the job market. However, the employability of these students has not kept pace with these demands, resulting in significant challenges during their job-seeking processes. The growing gap between the skills possessed by college graduates and the expectations of employers has become a critical national issue, affecting both individual career paths and the overall quality of higher education. Therefore, improving the employability of college students is crucial not only for their successful integration into the workforce but also as a reflection of the quality of the education system. Furthermore, addressing these challenges is essential for fostering the harmony and stability of the entire economic and social system, making the enhancement of student employability an urgent and practically significant.

In the context of China's higher education system, the cultivation of employability among college students remains relatively limited. Many universities tend to offer employment guidance that is overly utilitarian, superficial, and simplistic, neglecting the deeper development of essential employability (Li, X., & Pu, R. , 2021). This deficiency is echoed in research and practice, which reveal a substantial gap between the employability of college graduates and the actual needs of employers (Liu, S., & Jiang, H. 2019). The 2023 National College Graduates Employment Survey Report," published by the Chinese Academy of Social Sciences, indicates that the employment rate of graduates is influenced by their comprehensive quality and employability. The report highlights that some graduates lack essential soft skills required in the workplace, such as communication skills, teamwork skills, and problem-solving skills, which directly affect their competitiveness and success in the job market (Chinese Academy of Social Sciences, 2023).

Liuzhou, in particular, has experienced a growing disconnection between the employability of college graduates and the needs of local enterprises. Despite the city's economic advancements, there remains a significant gap between the technical skills required by businesses and the knowledge and skills that students possess. This discrepancy is largely due to the current education system's failure to equip students with the practical skills necessary to meet industry demands, resulting in considerable difficulties for graduates in securing appropriate employment (Liuzhou Education Bureau Annual Report, 2023). A lack of practical experience has been identified as a major contributor to this mismatch, which not only hinders the career development of students but also adversely affects the sustainable development of the local economy (Liuzhou Municipal Bureau of Human Resources and Social Security, 2023).

Liuzhou Vocational and Technical College, a nationally recognized institution, has also faced challenges in aligning its graduates' skills with industry requirements. According to the college's data, the employment rate for its graduates remains relatively low, with 75.03% in 2022 and 77.58% in 2023 (Liuzhou Vocational and Technical College Employment Report, 2022; 2023). Surveys and interviews conducted with local enterprises have revealed that the employability of graduates often falls short of industry expectations, leading to an imbalance between the supply of qualified candidates and the demand from employers. The college's current employment guidance programs rely heavily on traditional teaching methods, with a greater emphasis on theoretical knowledge rather than practical skill development. Consequently, there is a critical need to develop training course that are closely aligned with enterprise job requirements to improve students' practical skills.

To address these pressing issues, this research systematically analyzed and synthesized existing theories on improving college students' employability. Based on this analysis, a comprehensive training course was developed, specifically designed to strengthen the employability of college students. This training course is grounded in the Tyler model and integrates various educational theories, including Social Cognitive Theory, Constructivist Learning Theory, Experiential Learning Theory, and Situated

Learning Theory. Additionally, the program incorporates project-based teaching methods, allowing students to engage in real-world projects and hands-on activities that develop essential skills such as teamwork skills, problem-solving, communication, leadership, and interpersonal skills.

In conclusion, improving college students' employability is essential to address the ongoing mismatch between the skills students possess and the needs of enterprises. Through this carefully designed training course, students will not only acquire practical skills that align with industry demands but also gain a competitive edge through the accumulation of project-based experience. This approach aims to bridge the gap often overlooked by the current education system, ensuring that students are better equipped to meet the actual needs of employers. By adopting this skills-oriented training model, the initiative will support the career development of students and contribute to the sustainable growth of the local economy.

1.2 Research Questions

For this research, the researcher has the following 3 research questions:

(1) What are the fundamental data in developing course that improve the employability of students at Liuzhou Vocational and Technical College?

(2) What methods can be used to develop training course that improve the employability of students at Liuzhou Vocational and Technical College?

(3) What impact does the improvement of employability through these developed training course have on students at Liuzhou Vocational and Technical College?

1.3 Purpose of the Research

The purpose of this article is to explore the impact of training course on improving the employability of graduates from Liuzhou Vocational and Technical College.

(1) To investigate the basic information and fundamental data for developing Training course aimed at improving Liuzhou Vocational and Technical College students' employability.

(2) To develop Training course that improve Liuzhou Vocational and Technical College students' employability.

(3) To evaluate the effectiveness of these Training course in improving Liuzhou Vocational and Technical College students' employability.

1.4 Hypothesis of the Research

The employbility of graduates from Liuzhou Vocational and Technical College is higher after participating in training course than before.

1.5 Scope of the Research

1.5.1 Phase I： Contextual Study

1.5.1.1 Population and Sample

- Population

The population includes 2,030 students from the 2024 graduating class and 2,615 students from the 2023 graduating class of Liuzhou Vocational and Technical College, as well as 48 companies that hire graduates from this institution.

-Sampling

Questionnaires: Randomly select 300 students from the 2024 graduating class of Liuzhou Vocational and Technical College (covering all majors), 200 students from the 2023 graduating class (covering all majors), and 10 companies that hire graduates from Liuzhou Vocational and Technical College (including state-owned enterprises, foreign-funded enterprises, joint ventures, and private companies) to conduct an online survey on graduates' employability.

Interview: 7 companies that have hired graduates from Liuzhou Vocational and Technical College to understand the employability needs of college students from the perspective of these businesses.

1.5.1.2 Research Variables

Independent Variable: Framework of the Training Course

Dependent Variable:

Current State of Employability of Graduates from Liuzhou Vocational and Technical College

1.5.1.3 Duration Time

Duration: 8 weeks, from June 5th to July 30th, 2023.

Step 1: Conduct documentary research on theories, concepts, and principles related to the development of training course and factors affecting employability.(June 5th to June 25th,2023)

Step 2 :Includes a questionnaire survey conducted on 300 students from the 2024 graduating class of Liuzhou Vocational and Technical College , 200 students from the 2023 graduating class , and 10 companies that hire graduates from Liuzhou Vocational and Technical College (June 26th to July 16th, 2023)

Step 3: Involves interviews with 7 randomly selected companies recruiting graduates from Liuzhou Vocational and Technical College. Information on factors influencing college students' employability will be collected.(July 17th to July 30th, 2023)

1.5.2 Phase II: Construction

1.5.2.1 Population and Sample

- Population

The population included experts in various fields and 2,030 graduates from the class of 2024 at Liuzhou Vocational and Technical College.

-Sampling

Experts: 5 experts with specified qualifications were involved, including experts in college students' employability research, course development, educational psychology, research and evaluation.

Students: The implementation sample consists of 100 students from the 2024 graduating class of Liuzhou Vocational and Technical College.

1.5.2.2 Research variables

(1) Independent Variable: Draft of the Training Course Outline.

(2) Dependent Variable: Employability , which including five components as teamwork skills, problem-solving skills, communication and coordination skills, leadership skills and interpersonal skills.

1.5.2.3 Duration Time

Duration: 8 weeks, from July 31th to September 24th, 2023.

Step 1: Develop the training course to Improve college students' employability (July 31th to August 6th, 2023).

Step 2: Evaluate the validity of the developed training course (from August 7st to 13th, 2023).

Step 3: Pilot the developed training course with 100 students from the 2024 graduating class of Liuzhou Vocational and Technical College. The course will run for a total of 20 hours, spread over 5 weeks. (August 14th to September 17th, 2023).

Step 4: Revise the developed course based on feedback from the pilot (September 18th to 24th, 2023).

1.5.3 Phase III: Implementation

1.5.3.1 Population and Sample

- Population

2,030 graduates from the class of 2024 at Liuzhou Vocational and Technical College.

-Sampling

The implementation sample consists of 100 students from the 2024 graduating class of Liuzhou Vocational and Technical College. Conduct Project Presentations and pre- and post-training employability assessments to evaluate improvements in their employability.

1.5.3.2 Research variables

(1) Independent Variable: Development of the Training Course Outline, which including five Chapter 1 Teamwork Skills, Chapter 2Problem-solving Skills, Chapter 3 Communication and Coordination Skills, Chapter 4 Leadership Skills, and Chapter 5Interpersonal Skills.

(2) Dependent Variable: Employability, which including five components as teamwork skills, problem-solving skills, communication and coordination skills, leadership skills and interpersonal skills.

1.5.3.3 Duration Time

Duration: 10 weeks, from September 25th to December 3st, 2023.

Step 1 Implementation of the training course (September 25th to November 26th, 2023).

Step 2 Evaluation of the effectiveness of the Training Course in improving college students' employability (November 27th to December 3st, 2023).

1.6 Definition

1.6.1 Employability

Employability refers to the set of skills, knowledge, attitudes, and attributes that enable an individual to gain and maintain employment, as well as to adapt and thrive in a dynamic job market. It encompasses not only technical and academic competencies but also soft skills such as communication, problem-solving, teamwork, and adapt skills. Employability is often seen as a combination of personal effectiveness, career-building skills, and the skills to reflect on and manage one's own career trajectory, ensuring

ongoing professional development and the capacity to seize new opportunities in the workplace.

1.6.2 Employability of College Students

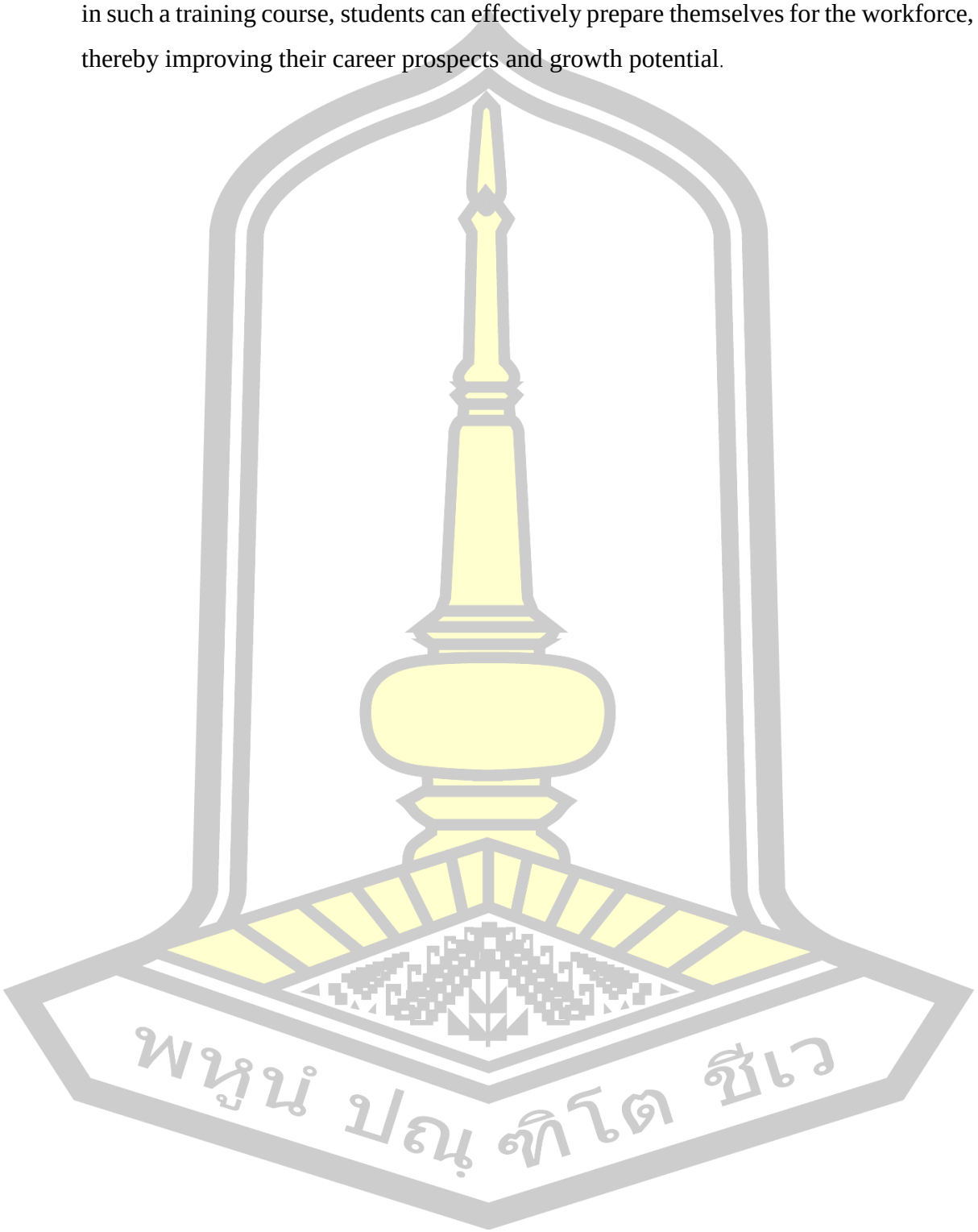
Employability for college students means to the skills to effectively navigate and succeed in the labor market by demonstrating key professional skills. This process involves mastering and applying essential skills such as teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills, which are crucial for thriving in diverse work environments. The concept of employability encompasses these core competencies and is vital in helping graduates secure, retain, and excel in employment. employability enables students to build positive professional relationships, work efficiently in teams, and adapt to the changing demands of the job market.In this research, comprehensive approach will be employed using TRI by Meredith Belbin, PSI by Donald A. Neudecker, CCQ by James C. McCroskey, LPI by James M. Kouzes and Barry Z. Posner, and SSI by E. William Riggio. These tools will collectively provide a thorough evaluation to understand the participants' employability before they begin the training course.

1.6.3 Training Course

Training course means to a comprehensive educational initiative designed to provide participants with specific knowledge, skills, and skills in a particular field. This course aims to equip students with key competencies such as teamwork skills, problem-solving, communication and coordination skills, leadership skills, and interpersonal relationship management through active participation in real-world projects. By engaging in this practice-oriented learning approach, students not only acquire theoretical knowledge but also develop and improve these core competencies in actual work environments.

The importance of a training course lies in its direct alignment with the demands of the job market, making students more competitive in their careers. These skills are crucial for students' success in their future professional development, especially in

today's highly competitive and globalized employment environment. By participating in such a training course, students can effectively prepare themselves for the workforce, thereby improving their career prospects and growth potential.



CHAPTER II

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

In the research, the author conducted a literature review on the development of Training course aimed at improving college students' employability, with related research as follows:

2.1 Training Course Development

2.1.1 Meaning of the Training Course

2.1.2 Importance of Training Course

2.1.3 Elements of Training Course

2.1.4 Training Course Model

2.2Employability

2.2.1 Meaning of Employability

2.2.2 Components of Employability

2.2.3 Importance of Employability

2.2.4 Evaluation of Employability

2.3 Relevant Research

2.3.1 International Research

2.3.2 Domestic Research

2.4 Theories

2.4.1 Tyler Model

2.4.2 Social Cognitive Theory

2.4.3 Constructivist Learning Theory

2.4.4 Experiential Learning Theory

2.4.5 Situated Learning Theory

2.5 Conceptual Framework

2.1 Training Course Development

2.1.1 Meaning of the Training Course

Training course are essential educational tools designed to impart specific skills, knowledge, and competencies to individuals, particularly in a professional or academic setting. In recent years, scholars have explored various dimensions of what constitutes a training course and its broader implications for participants. This section reviews the contributions of several researchers who have defined and analyzed the meaning of training course, focusing on their structure, purpose, and impact.

Salas et al. (2012) define training course as structured learning experiences that aim to improve the knowledge, skills, and skills (KSAs) of participants. According to their research, the purpose of a training course goes beyond simple knowledge transfer; it also includes the development of specific behaviors and attitudes that prepare individuals for their professional roles. They emphasize that an effective training course must be aligned with both the learners' goals and the organization's objectives, ensuring that the acquired skills are relevant and applicable.

Bell and Kozlowski (2008) argue that training course are a key mechanism for the development of human capital. They define training as a systematic process through which individuals acquire the competencies needed to perform effectively in their current or future jobs. Their research suggests that training course should be viewed as strategic investments in human capital, with the potential to generate long-term benefits for both individuals and organizations.

Grossman and Salas (2011) offer a broader perspective on the meaning of training course by emphasizing the role of adapt skills and lifelong learning. They argue that training is not only about acquiring specific skills but also about developing the skills to adapt to changing circumstances and continue learning throughout one's career. This

perspective highlights the importance of designing training course that promote flexibility and resilience among learners.

Lacerenza et al. (2017) focus on the interactive nature of training course, defining them as dynamic processes that involve active participation and engagement from learners. According to their research, effective training course do more than transmit information; they also foster critical thinking, problem-solving, and interpersonal skills. Lacerenza et al. emphasize that training should be designed to encourage collaboration and interaction, which are key to successful learning outcomes.

Pineda (2010) highlights the contextualized nature of training course, defining them as learning interventions tailored to the specific needs and circumstances of the learners. Pineda argues that the effectiveness of a training course is closely linked to its relevance to the learners' professional context and challenges. training course that are directly aligned with the learners' work environment and career aspirations are more likely to be effective and meaningful.

Van den Bossche et al. (2011) explore the social aspects of training course, defining them as opportunities for knowledge sharing and teamwork. Their research suggests that learning is a social process that occurs through interaction and collaboration with others. Training course that facilitate the exchange of ideas and collective problem-solving are more effective in developing the skills and knowledge needed for successful teamwork.

Tannenbaum et al. (2010) discuss the evolving nature of training course, particularly in the context of technological advancements. They argue that the meaning of a training course is increasingly linked to its skills to integrate digital tools and platforms, which can improve learning efficiency and accessibility. Their work highlights the importance of incorporating technology into training course to meet the needs of a diverse and geographically dispersed workforce.

In conclusion, the meaning of a training course encompasses more than just the transfer of knowledge. It includes the development of skills, behaviors, and attitudes that are crucial for professional success. Training course should be designed to be relevant, interactive, and adaptable to the needs of learners, ensuring that they provide meaningful and impactful learning experiences.

2.1.2 Importance of Training Course

Training course play a vital role in developing the competencies and improving the employability of individuals, particularly in the context of higher education and professional development. In recent years, scholars have explored the various dimensions of why training course are important, focusing on their impact on individual performance, organizational success, and career development. This section reviews the contributions of several researchers who have examined the significance of training course in contemporary educational and professional settings.

Aguinis and Kraiger (2009) highlight the importance of training course for improving organizational performance. They argue that training is not only beneficial for individual skill development but also has a significant impact on overall organizational productivity and competitiveness. Their research suggests that well-designed and effectively implemented training course can lead to substantial returns on investment for organizations, making them a critical component of business strategy.

Blume et al. (2010) explore the impact of training course on job performance, with a particular focus on the concept of training transfer. They argue that the true value of a training course is determined by how well the skills and knowledge acquired are applied in the workplace. Their study shows that training course that include follow-up activities and support systems are more likely to result in successful training transfer, leading to improved job performance and organizational outcomes.

Sitzmann and Weinhardt (2015) discuss the role of training course in career development. They argue that training is a key factor in helping individuals achieve their career goals by equipping them with the necessary skills and qualifications. Their research indicates that participation in training course is positively correlated with career advancement, job satisfaction, and long-term employability.

Saks and Burke (2012) focus on the role of training course in addressing skill gaps and improving employability. They highlight the importance of training in bridging the gap between the skills taught in academic settings and those required in the workplace. Their work suggests that targeted training course are essential for preparing students to meet the demands of the job market and improving their competitiveness.

Morgeson, Reider, and Campion (2011) examine the importance of training course in fostering adapt skills and innovation in the workplace. They argue that in a rapidly changing work environment, the skills to adapt and innovate is crucial for career success. Training course that emphasize critical thinking, creativity, and problem-solving are essential for preparing individuals to navigate the complexities of modern work environments.

Kraiger, Passmore, and dos Santos (2020) provide insights into the importance of training course in the context of globalization and digitalization. They suggest that as organizations become more global and technology-driven, continuous learning and upskilling through training become increasingly important. Their research underscores the necessity of training course that are flexible, scalable, and aligned with the global business environment.

Keith and Frese (2008) highlight the role of training course in improving employee motivation and engagement. They argue that well-designed training course not only improve skills and knowledge but also increase employees' commitment to their organizations. Their study shows that training course that are perceived as relevant

and valuable by participants can lead to higher levels of motivation, job satisfaction, and organizational loyalty.

In conclusion, training course are critical for improving employability and career development. They provide individuals with the skills and knowledge needed to succeed in their professional roles and contribute to organizational success. The importance of training course will continue to grow as the demands of the job market evolve, making them an essential investment for both individuals and organizations.

2.1.3 Elements of Training Course

The effectiveness of a training course in improving employability largely depends on its core elements, which include curriculum design, instructional methods, assessment strategies, and the incorporation of practical experiences.

Kraiger (2008) emphasized the importance of aligning course content with both learning objectives and participants' needs. His research suggests that training course should have well-defined objectives and relevant content that directly addresses the skills and knowledge gaps of students. Kraiger noted that this alignment is crucial for ensuring that the training has a meaningful impact on employability.

Salas, Tannenbaum, Kraiger, and Smith-Jentsch (2012) discussed the significance of instructional design in the effectiveness of training course. They proposed that instructional design should be systematic, incorporating a clear sequence of instructional events that guide learners from basic concepts to complex applications. Their work underscores the importance of using evidence-based instructional strategies to maximize learning outcomes.

Taylor and Edge (2009) explored the role of adult learning principles in training course design. They argued that effective training course for college students should incorporate and ragogical approaches, which consider the learners' need for autonomy,

relevance, and practical application. Their research supports the idea that training should be learner-centered, with students actively involved in the learning process.

Clark and Mayer (2016) focused on the integration of multimedia elements in training course, which is increasingly relevant in today's digital learning environments. They found that the use of multimedia can improve learning by making complex information more accessible and engaging. However, they also cautioned that multimedia must be used judiciously, ensuring that it supports rather than distracts from the learning objectives.

Arthur, Bennett, Edens, and Bell (2003), although slightly older, provided a meta-analytic review that remains influential, highlighting the role of experiential learning in training course. Their findings indicate that training is most effective when it includes opportunities for learners to engage in hands-on activities that simulate real-world challenges. This approach not only improves skill acquisition but also improves the transfer of learning to actual work settings.

Burke and Hutchins (2008) discussed the importance of feedback and reinforcement in training course. Their research suggests that continuous feedback during training helps reinforce learning and ensures that participants can apply what they have learned in practical settings. They emphasized that effective training course should include regular opportunities for feedback and reinforcement to improve retention and application of skills.

Noe and Tews (2009) examined the impact of assessment and evaluation on the effectiveness of training course. They argued that assessment is a critical element that provides both instructors and learners with information about progress toward learning objectives. Their research highlighted the importance of using formative assessments to guide instructional adjustments and summative assessments to evaluate overall effectiveness.

In conclusion, the design of an effective training course for improving the employability of college students requires attention to several key elements, including aligned course content, evidence-based instructional design, consideration of adult learning principles, appropriate use of multimedia, experiential learning opportunities, continuous feedback, and robust assessment methods. By integrating these elements, educators can create training course that effectively prepare students for the workforce.

2.1.4 Training Course Teaching Model

The teaching model of a training course plays a pivotal role in achieving its learning objectives, particularly when aiming to improve employability.

Thomas (2000) laid the groundwork for understanding project-based learning by defining it as a comprehensive approach to teaching where students engage in real-world and meaningful projects. He emphasized that PBL fosters critical thinking, problem-solving, and collaboration, which are essential skills for employability. Although his work dates back more than 20 years, its influence persists in contemporary studies, establishing the foundation for project-based approaches in training models.

Mills and Treagust (2003) expanded on the concept of PBL by examining its application in engineering education. They argued that project-based learning is particularly effective in fields requiring hands-on experience and practical application of theoretical knowledge. Their research showed that PBL not only improves technical skills but also improves students' skills to work in teams, communicate effectively, and manage projects—skills highly valued by employers.

Krajcik and Blumenfeld (2006) focused on the role of scaffolding in PBL environments. They argued that effective scaffolding, which provides structure and support as students engage in complex projects, is a crucial element of a successful teaching model. Their research highlighted the importance of gradually removing

support as students become more competent, thus fostering independence and self-directed learning—key attributes for employability.

Helle, Tynjälä, and Olkinuora (2006) provided a detailed analysis of the assessment methods used in PBL settings. They emphasized that assessment should be aligned with the learning objectives of the project and should include both formative and summative evaluations. Their research suggested that reflective assessments, where students evaluate their own learning and performance, are particularly effective in developing the self-awareness and critical thinking skills needed in the workplace.

Kolb and Kolb (2005) discussed the experiential learning model, which emphasizes learning through experience and reflection. According to their research, experiential learning is highly effective in training course as it allows students to apply theoretical knowledge in practical situations. This model encourages active engagement, where learners participate in hands-on activities and reflect on their experiences, thereby deepening their understanding and improving their employability.

Garrison and Kanuka (2004) explored the blended learning model, which integrates traditional face-to-face instruction with online learning components. Their research highlighted that blended learning provides flexibility and improves the learning experience by allowing students to access course materials and collaborate with peers at their own pace. They argued that this model is particularly effective in catering to diverse learning styles and needs, making it a valuable approach in training course aimed at improving employability.

Voorhees (2001) noted that competency-based education (CBE) has been another focus of recent research. CBE focuses on the development of specific competencies that are directly aligned with industry requirements. This model allows students to progress at their own pace, ensuring that they master each competency before moving on to the next. Voorhees argued that CBE is particularly effective in

aligning training course with employer expectations, thereby improving graduates' employability.

In conclusion, the research reviewed highlights the importance of carefully selecting an appropriate teaching model for training course aimed at improving employability. Among the various models, project-based learning (PBL) has emerged as a particularly effective approach due to its skills to engage students in real-world projects, foster critical skills such as teamwork and problem-solving, and closely align with industry needs. While other models like experiential learning, blended learning, and competency-based education offer valuable insights, PBL stands out for its comprehensive approach to preparing students for the workforce, making it a compelling choice for training course focused on employability.

2.2 Employability

2.2.1 Meaning of Employability

Employability refers to a set of skills, knowledge, and personal attributes that make an individual capable of securing and maintaining employment, as well as thriving in their professional career. It is a dynamic concept that extends beyond merely acquiring job-specific skills; it encompasses a broader range of competencies essential for adapting to the evolving demands of the labor market.

Artess, Hooley, and Mellors-Bourne (2017) defined employability as the skills of graduates to find and maintain employment, emphasizing the importance of developing both hard and soft skills. They argued that higher education institutions must align their curricula with industry needs, particularly through project-based learning, to ensure that students are equipped with the necessary skills to thrive in a competitive job market.

Jackson (2016) examined the role of soft skills in employability, highlighting that attributes such as communication skills, teamwork skills, and problem-solving skills are

increasingly valued by employers. Jackson argued that project-based learning is an effective method for developing these skills, as it provides students with opportunities to work collaboratively on real-world problems, thereby improving their employability.

Andrews and Higson (2018) focused on the global perspective of employability, noting that in an increasingly interconnected world, graduates must possess not only technical skills but also cultural awareness and adapt skills. They emphasized that project-based learning, particularly in international contexts, helps students develop a global mindset, which is critical for employability in multinational organizations.

Tomlinson (2017) explored the subjective aspects of employability, including students' self-perception and confidence in their skills to secure employment. He argued that project-based learning can boost students' confidence by allowing them to apply theoretical knowledge in practical settings, thereby improving their belief in their own employability.

Yorke (2010) revisited the definition of employability, emphasizing that it involves more than just skill acquisition; it also includes personal attributes such as resilience and adapt skills. Yorke suggested that project-based learning can play a crucial role in developing these attributes by exposing students to challenges and requiring them to adapt to new situations.

Wilton (2014) studied the impact of work-integrated learning (WIL) on employability, finding that students who engage in WIL are more likely to develop the practical skills and professional networks that are essential for employment. Wilton argued that project-based learning, as a form of WIL, is particularly effective in bridging the gap between academic knowledge and workplace expectations.

Lowden et al. (2011) highlighted the importance of employer engagement in defining and developing employability. They argued that higher education institutions

should collaborate closely with employers to design curricula that include project-based learning opportunities, ensuring that graduates possess the skills and attributes that are most in demand in the labor market.

In conclusion, the meaning of employability has expanded to include a combination of hard skills, soft skills, and personal attributes.

2.2.2 Components of Employability

Employability is a multifaceted concept involving a range of competencies, personal attributes, and external factors that collectively determine an individual's skills to secure and maintain meaningful employment. Understanding the components of employability is crucial for designing effective training course that aim to improve students' employability.

Knight and Yorke (2010) identified four key components of employability: career development learning, experience (work and life), degree subject knowledge, and employability. They argued that project-based learning is particularly effective in integrating these components, as it provides students with opportunities to apply theoretical knowledge in practical settings, develop employability, and gain valuable experience.

Bridgstock (2009) emphasized the importance of career management skills as a component of employability. She argued that students must be equipped with the skills to manage their own careers, including skills in self-assessment, job search strategies, and lifelong learning. Bridgstock suggested that project-based learning can improve these skills by encouraging students to take ownership of their projects and reflect on their learning experiences.

Cranmer (2006) explored the role of practical experience in employability, finding that students who engage in project-based learning or work placements are more likely

to develop the practical skills and professional networks necessary for employment. Cranmer argued that these experiences help students bridge the gap between academic knowledge and the expectations of the workplace.

Jackson (2015) developed a model for evaluating employability, focusing on the skills of students to apply their skills in real-world contexts. She argued that project-based learning is an effective method for developing these skills, as it requires students to work on real-world problems and engage with industry professionals, thereby improving their employability.

Yorke and Knight (2007) proposed the USEM model (Understanding, Skills, Efficacy beliefs, and Metacognition) as a framework for understanding employability. They argued that employability programs should focus on developing students' understanding of their subject, skills, efficacy beliefs (confidence), and metacognition (self-awareness). Project-based learning, they suggested, is a valuable approach for achieving these outcomes.

Tymon (2013) studied student perceptions of employability, finding that students value practical experience and skill development as key components of employability. Tymon argued that project-based learning provides students with the opportunity to develop these components in a supportive, real-world environment, which improves their confidence and readiness for the job market.

Wilton (2014) highlighted the role of extracurricular activities in developing employability, noting that students who engage in activities such as internships, volunteering, and project-based learning are more likely to develop the skills and attributes that employers value. Wilton suggested that higher education institutions should encourage students to participate in these activities as part of their employability strategy.

In conclusion, the components of employability include a combination of skills, knowledge, experience, and personal attributes. Project-based learning is recognized as a critical approach for developing these components, making it an essential element of employability-focused curricula in higher education.

2.2.3 Importance of Employability

The significance of employability in higher education has garnered increased attention over the past decade, as it plays a critical role in bridging the gap between academic learning and the demands of the labor market. Employability is not only essential for individual career success but also for broader economic and social development. This section reviews recent literature that explores the importance of employability, with a particular focus on how project-based learning contributes to its development.

Clarke (2018) examined the relationship between employability and graduate outcomes, emphasizing that employability is a key determinant of graduates' career success. Clarke argued that higher education institutions must prioritize employability within their curricula to ensure that students are adequately prepared for the workforce. She highlighted the importance of integrating project-based learning, which allows students to develop practical skills and gain experience that is directly applicable to the workplace.

Tomlinson (2017) focused on the individual and societal benefits of employability, noting that employable graduates contribute to economic growth and social mobility. Tomlinson emphasized that project-based learning is crucial in fostering employability, as it helps students develop the skills and attributes that are most valued by employers, such as problem-solving, teamwork, and adapt skills.

Artess, Mellors-Bourne, and Hooley (2017) discussed the role of employability in higher education policy, highlighting how universities are increasingly being evaluated based on their graduates' employability outcomes. They argued that project-based learning is an effective strategy for improving employability, as it aligns academic learning with real-world challenges, thereby improving students' readiness for the job market.

Jackson (2016) explored the impact of employability on student motivation and engagement, finding that students who perceive their education as relevant to their future careers are more likely to be engaged in their studies. Jackson argued that project-based learning is particularly effective in making education relevant, as it allows students to work on projects that mirror the challenges they will face in their professional lives.

Wilton (2014) analyzed the economic importance of employability, noting that graduates who possess strong employability are more likely to secure employment and command higher salaries. Wilton suggested that project-based learning should be a central component of employability programs, as it provides students with the opportunity to develop both the technical and soft skills that are in high demand by employers.

Lowden et al. (2011) emphasized the importance of employer engagement in improving employability, arguing that universities must work closely with industry partners to design curricula that meet the needs of the labor market. They found that project-based learning, which often involves collaboration with industry, is an effective way to ensure that students acquire the skills and experience needed for employment.

Hinchliffe and Jolly (2011) focused on the broader societal implications of employability, arguing that employable graduates contribute to the overall well-being of society by driving innovation and economic growth. They highlighted the role of

project-based learning in developing employability, noting that it provides students with opportunities to apply their knowledge in real-world contexts, thereby improving their skills to contribute to society.

In conclusion, employability is of paramount importance both for individual graduates and for society as a whole. The literature consistently highlights the role of project-based learning as a key strategy for improving employability, making it an essential component of higher education curricula.

2.2.4 Evaluation of Employability

In the increasingly competitive global job market, the evaluation of employability has become a central concern for educators and employers. To improve the employability of college students, many institutions and training providers have developed targeted course and programs. These programs typically include assessment scales for teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills, aiming to help students improve their overall performance in the workplace.

Team Role Inventory (TRI) by Meredith Belbin: Belbin (11001) developed a model for assessing team roles and dynamics, outlined in his work "Management Teams: Why They Succeed or Fail." This model provides a framework for evaluating and improving individuals' contributions and interactions within teams.

Problem-Solving Inventory (PSI) by Donald A. Neudecker: Neudecker (1990) designed a tool for evaluating problem-solving skills in various contexts, as described in his work "The Problem-Solving Inventory: A Comprehensive Assessment." This inventory helps educators assess students' abilities to tackle and resolve complex problems.

Communication Competence Questionnaire (CCQ) by James C. McCroskey: McCroskey (1992) developed a questionnaire to assess communication competence, detailed in "An Introduction to Communication Competence." This tool provides a structured approach to evaluating and enhancing students' communication skills.

Leadership Practices Inventory (LPI) by James M. Kouzes and Barry Z. Posner: Kouzes and Posner (11007) created a model for assessing leadership practices, outlined in "The Leadership Challenge." This inventory helps evaluate and develop effective leadership behaviors and practices.

Social Skills Inventory (SSI) by E. William Riggio: Riggio (11006) designed a tool for assessing social skills, detailed in "The Social Skills Inventory: A Comprehensive Assessment." This inventory offers a structured framework for evaluating and improving interpersonal and social skills.

In conclusion, the development of targeted training course, supported by scientifically-based assessment scales developed by leading researchers, is essential for improving the employability of college students. These scales not only help students recognize their strengths and weaknesses but also provide educators with effective tools to better cultivate core employability. Through systematic evaluation and training, students will be better equipped to meet the demands of the workplace after graduation and achieve success in their careers.

2.3 Relevant Research

The development of training course aimed at improving employability in Liuzhou, China, is grounded in both international and domestic research. This section's relevant research provides a foundation for understanding the fundamental components of employability and the effectiveness of training course in improving these skills.

2.3.1 International Research

In the global context, the development of training course aimed at improving employability for college students has gained significant traction. This body of research highlights various approaches and methodologies adopted by institutions worldwide to bridge the gap between academic knowledge and marketable skills.In this research，how different education systems address the challenge of improving employability through specialized professional training course.

Knight and Yorke (2016) explored the role of employability frameworks in higher education across the United Kingdom, emphasizing the need for a structured approach to integrating employability into the curriculum. Their study demonstrated that training course specifically designed to develop employability, such as communication, teamwork, and problem-solving, significantly improved students' job prospects. Knight and Yorke concluded that embedding these skills within the curriculum is essential for preparing students for the global job market.

Bridgstock (2017) examined the Australian higher education system, highlighting the importance of integrating employability into the curriculum through both formal and informal learning opportunities. Bridgstock found that when training course were tailored to industry needs and included elements such as internships and project-based learning, students were better equipped to transition into the workforce. The study recommended that institutions focus on developing students' adapt skills and resilience, key attributes for thriving in a rapidly changing job market.

Tomlinson (2017) conducted a comparative study between the employability strategies of higher education institutions in the United Kingdom and the United States. Tomlinson found that while both systems recognized the importance of employability, the U.S. institutions placed greater emphasis on experiential learning, such as internships and cooperative education programs. This approach, combined with targeted

training course, led to higher employability outcomes, suggesting the need for a balanced approach that includes both academic and practical experiences.

Jackson (2018) focused on the impact of work-integrated learning (WIL) programs in Canada and their role in improving employability. Jackson's research showed that students who participated in WIL programs, which were often embedded in employability-focused training course, reported higher levels of job readiness and were more competitive in the job market. The study emphasized the need for continuous collaboration between educational institutions and industry partners to ensure that training course remain relevant and effective.

Chan (2019) investigated the employability of graduates in Hong Kong, where the educational system has increasingly emphasized the development of soft skills through specialized training course. Chan found that graduates who had completed course in areas such as leadership, communication, and teamwork were more likely to secure employment quickly after graduation. The study highlighted the importance of aligning training course with the specific needs of the local job market, as well as the benefits of incorporating feedback from employers into course design.

Teichler (2020) analyzed the employability initiatives of European universities, particularly those involved in the Bologna Process. Teichler found that these institutions have made significant strides in integrating employability into their curricula, often through the development of comprehensive training course that address both hard and soft skills. The study suggested that a combination of theoretical knowledge and practical skills training is most effective in preparing students for the workforce, particularly in an increasingly competitive global job market.

Wilton (2021) conducted research on the impact of global employability rankings on higher education institutions in Asia, Europe, and North America. Wilton found that universities that prioritized employability in their strategic planning, often by

developing specialized training course, tended to perform better in global rankings. This, in turn, attracted more students and improved graduate outcomes. The study concluded that employability should be a core focus for institutions aiming to compete on a global scale.

In conclusion, international research consistently underscores the importance of developing training course aimed at improving employability for college students. These studies highlight the need for a multifaceted approach that includes both academic and practical elements, tailored to the specific needs of the job market. By integrating employability into the curriculum and fostering strong partnerships with industry, educational institutions can better prepare their students for success in the global workforce.

2.3.2 Domestic Research

In China, the concept of employability has become increasingly prominent in higher education, reflecting a growing recognition of the need to better prepare students for the challenges of the job market. Research in this area has focused on the integration of employability into the curriculum and the development of training course that address the specific needs of Chinese students and employers. In this research, emphasizing how Chinese universities are responding to the employability challenge.

Wang and Li (2015) explored the integration of employability into higher education curricula in China, emphasizing the importance of aligning academic programs with market demands. Their study highlighted the role of project-based learning and internships in improving employability, suggesting that these practical experiences are essential for bridging the gap between theoretical knowledge and real-world application. Wang and Li concluded that universities should focus on developing comprehensive training course that include both academic and practical components to improve employability outcomes.

Zhang (2016) conducted research on the effectiveness of employability training course in Chinese universities, particularly those that incorporate career development and soft skills training. Zhang found that students who participated in these programs were more confident in their job search and had higher employment rates compared to those who did not receive such training. The study recommended that employability training should be made a mandatory part of the curriculum to ensure all students are adequately prepared for the job market.

Liu (2017) focused on the role of college-industry collaboration in improving employability. Liu's study found that partnerships between universities and local businesses were effective in providing students with practical skills and real-world experience. The research suggested that training course developed in collaboration with industry partners were more successful in equipping students with the skills needed for employment, particularly in sectors that require specialized knowledge.

Chen and Hu (2018) examined the impact of entrepreneurship education on employability, arguing that fostering an entrepreneurial mindset among students is crucial for improving their job prospects. Their study showed that students who participated in entrepreneurship course were more likely to be innovative and adaptable, qualities that are highly valued by employers. Chen and Hu recommended that universities integrate entrepreneurship training into their employability programs to improve students' overall competitiveness in the job market.

Sun (2019) explored the challenges of employability in the context of the rapidly changing Chinese economy, particularly in relation to the skills gap between graduates and employers' expectations. Sun found that while technical skills were important, soft skills such as communication, teamwork, and adapt skills were increasingly in demand. The study emphasized the need for training course that focus on both hard and soft skills, with a particular emphasis on adapt skills to the evolving job market.

Li and Zhao (2020) investigated the impact of digital literacy on employability, noting that as China's economy becomes more digitized, the demand for graduates with strong digital skills is increasing. Their research showed that students who received training in digital skills were more likely to find employment quickly after graduation. Li and Zhao suggested that universities should prioritize digital literacy in their employability training course to better prepare students for the demands of the modern job market.

In conclusion, domestic research on employability in China emphasizes the importance of developing comprehensive training course that address both academic and practical skills. Chinese universities are increasingly recognizing the need to align their curricula with market demands, incorporating elements such as project-based learning, industry collaboration, and digital literacy into their employability programs to better prepare students for the challenges of the job market.

2.4 Theories

2.4.1 Tyler Model

The Tyler Model (Tyler, 1972), developed by Ralph Tyler in the 1940's, is the quintessential prototype of course development in the scientific approach. Originally, he wrote down his ideas in a book Basic Principles of course and Instruction for his students to give them an idea about principles for to making course. Tyler model of course describes how to formulate educational objectives, how to organize them, analyze them and adjust them so that the students are able to meet these objectives. Basically, Tyler model consisting of four steps.

(1) Determine the school's purposes

(2) Identify educational experiences related to purpose

(3) Organize the experiences

(4) Evaluate the purposes

The Tyler Model's emphasis on clear and measurable objectives has been widely adopted in course development, especially in formal education settings. It provides a systematic framework for designing, implementing, and assessing curricula, ensuring that educational experiences are purposeful and aligned with desired outcomes.

In conclusion, a training course based on the Tyler Model was developed to Improve the employability of graduates at Liuzhou Vocational and Technical College. The specific steps are as follows:

Phase 1: Goal Setting: Firstly, by conducting random questionnaire surveys among recruiting companies and graduates, as well as interviews with companies, an assessment of the employability of students from Liuzhou Vocational and Technical College was carried out to determine the areas where students' employability needed improvement. The clear training objective of the Course is to improve students' employability.

Phase 2: Course Design: Based on the aforementioned goals, the course content is designed, which includes teamwork skills, problem-solving skills, communication and coordination skills, Leadership skills, and interpersonal skills.

Phase 3: Selection of Teaching Methods: Various teaching methods are adopted, such as interactive lectures, project-based learning, and mock interviews, to ensure students gain practical experience and feedback.

Phase 4: Evaluation and Feedback: At the end of the course, students' performances are assessed to determine if they have achieved the set learning objectives. Additionally, feedback from students is collected to understand the effectiveness of the

course and areas that need improvement. Based on the feedback and evaluation results, the Course content and teaching methods are regularly updated and refined to ensure they remain aligned with market demands and student needs.

By following the above steps, it can be ensured that students of Liuzhou Vocational and Technical College will possess improved employability and a stronger competitive edge in the job market upon completing the training course.

2.4.2 Social Cognitive Theory

Social Cognitive Theory (SCT) (Bandura, 1999) centers on the interaction between personal factors, behavior, and the environment, forming a concept known as "triadic reciprocal causation." It emphasizes that an individual's behavior is influenced not only by external environmental factors but also by internal cognitive processes. SCT is primarily used to explain and predict human behavior, with widespread applications in fields such as learning and education, health behavior, career development, and media influence. The theory posits that human activity is determined by the interaction of three elements: individual behavior, personal cognition, and the surrounding environment. Through SCT, Bandura expanded on Social Learning Theory by incorporating cognitive factors such as beliefs, self-perception, and expectations, creating a classic theoretical framework for understanding human behavior change.

The main constructs of SCT include:

Personal factors: These involve internal factors that influence individual behavior, such as knowledge, expectations, attitudes, and self-efficacy.

Behavioral factors: These refer to the observable actions or reactions of an individual in a specific context.

Environmental factors: These encompass the external conditions and contexts that influence individual behavior, including both the physical and social environments.

Figure 1 Explains The Direction Of The SCT Model

In conclusion, in applying SCT to the training course, simulated work scenarios can be designed to allow students to interact and make decisions in a controlled environment. This design enables students to recognize the importance of self-efficacy during practice, and through feedback and reflection, it strengthens their communication and coordination skills as well as leadership skills. The training course may include tasks that involve personal interaction with the environment, such as team collaboration challenges and leadership role practices, to improve students' employability.

2.4.3 Constructivist Learning Theory

Constructivist learning theory is based around the idea that learners are active participants in their learning journey; knowledge is constructed based on experiences. As events occur, each person reflects on their experience and incorporates the new ideas with their prior knowledge (Benson, 2003). Learners develop schemas to organize acquired knowledge. This model was entrenched in learning theories by Dewey, Piaget, Vygotsky, Gagne, and Bruner. The theory of constructivist learning is vital to understanding how students learn. The idea that students actively construct knowledge is central to constructivism. Students add (or build) their new experiences on top of their current foundation of understanding. As stated by Woolfolk (2016) "learning is active mental work, not passive reception of teaching".

There are four key areas that are crucial to the success of a constructivist classroom:

- The instructor takes on the role of a facilitator instead of a director

- There are equal authority and responsibility between the students and the instructor

- Learning occurs in small groups

- Knowledge is shared between both the students and the instructor

These four areas must be addressed in order for the constructivist classroom to be successful. It differs greatly from the traditional classroom. Constructivist classrooms are more student-centered and the learning revolves around their interests and questions (Christian, 1996). Teachers guide learning by implementing group activities, creating collaborative dialogue, and facilitating interactive experiences. Students build on their prior knowledge and construct new understanding based on the lessons taught (Clarke, 2009). Dialogue and negotiation are also key components to successful learning.

In conclusion, constructivist learning theory believes that learning was a building procedure and that knowledge was more than just taking knowledge. Therefore, the idea of constructivist learning theory stated that every person has the interaction with learning environment and seek for explanation in the environment that everybody builds the meaning with the thing that them knows. Besides, the meaning that establishes this relationship has interaction or might receive some advice from another person, which in building this can happen when the student participates in the learning process. Hence, the student must have responsibility in learning them-self and the trainer was just a supporter and facilitator in learning process in classroom. Here are the specific implementations:

1. Building on Prior Knowledge: At the onset of training, first assess the existing knowledge and skills students have regarding employability. This serves as a foundation for improving employability.

2. Active Learning: Encourages students to explore, experiment, and solve real-world problems, rather than simply passively receiving information.

3. Contextual Learning: Provides employment-related scenarios or case studies.

4. Collaborative Learning: Promote group discussions, teamwork skills, and collaborative projects. Interacting with peers deepens understanding and allows students to learn from multiple perspectives.

5. Reflection: After each training session or activity, allocate time for students to reflect on what they've learned, how to apply it, and how it connects to their prior experiences.

By integrating the Constructivist Learning Theory into the employability Training Course, it ensures that students are not only equipped with theoretical knowledge but also possess the practical skills and mindset required for the modern workplace.

2.4.4 Experiential Learning Theory

Experiential Learning Theory (ELT) (Kolb, 11004) asserted that, "Learning is the process whereby knowledge is created through the transformation of experience." This perspective of the learning process originated through the work of foundational theorists of experiential learning (Dewey, 1910/1997, 1934, 1938, 1958; Freire, 1974; James, 1890, 1907; Lewin, 1951; Rogers, 1961) who placed intentional action based on subjective experience at the center of learning (Kolb & Kolb, 2009). Kolb and Kolb, (2005b) noted six propositions shared by these scholars that served as the foundation for

ELT. First, learning is conceived best as a process instead of a product. To improve learning, the focus should be placed on engaging students in a process that facilitates optimal learning. This includes providing feedback on the effectiveness of students' learning efforts. As Dewey (1897) noted, "education must be conceived as a continuing reconstruction of experience" (p. 79). Next, all learning is relearning. A student's beliefs and ideas on a topic must be considered so they can be drawn out, tested, examined, and integrated into the new concepts. Third, learning requires the resolution of conflicts between dialectically opposed modes of adaption to the world. Conflict, dissonance, and disagreement drive learning. In the process of learning, an individual is called to maneuver back and forth between opposing modes of reflection and action. Fourth, learning is a holistic process of adaptation to the world that involves more than simple cognition. Learning involves the person as a whole and includes thinking, feeling, perceiving, and behaving. Fifth, learning results from synergistic transactions between the learner and his or her experiences. Using Piaget's (1971) language, learning occurs through equilibration of the dialectic processes of assimilating new experiences into existing concepts and accommodating existing concepts into new experiences. Finally, learning is the process of creating knowledge. ELT follows constructivist views of learning in that it is the process of connecting new experiences and knowledge to the learner's pre-existing personal knowledge. This constructivist approach contrasts the majority of educational practices today, which involves the transmission of ideas that were previously fixed.

These six principles, outlined previously, provide the foundation of Kolb's (1984) ELT Model (Figure2). ELT explains that knowledge results from experiences that have been grasped and transformed (Kolb, 1984). The ELT puts forth two dialectically related modes of grasping experience—Concrete Experience (CE) and Abstract Conceptualization (AC)—as well as two dialectically related modes of transforming experience—Reflective Observation (RO) and Active Experimentation (AE) (Kolb &

Kolb, 2009). The result of these two dimensions of learning, prehension and transformation, are four different elementary forms of knowledge—divergent knowledge, assimilative knowledge, accommodative knowledge, and convergent knowledge (Figure 2).

Kolb (1984) explained that an experience grasped through apprehension and then transformed through intention results in divergent knowledge. An experience grasped through apprehension and transformed through extension is accommodative knowledge. An experience grasped through comprehension and transformed through intention yields assimilative knowledge. Finally, an experience grasped through comprehension and transformed through extension leads to convergent knowledge (Figure 2). In order to facilitate learning, not only must the experience be grasped, but it must also be meaningful and relevant (Knapp & Benton, 2006) because students remember knowledge longer when they have experienced it actively (Knapp & Benton, 2006).

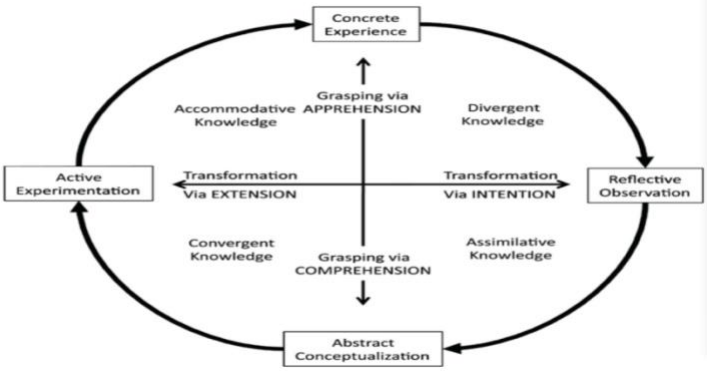


Figure 2 Model of Experiential Learning Process

In conclusion, the training course designed for graduates of Liuzhou Vocational and Technical College integrates Experiential Learning Theory to enhance their employability. The course engages students in real-world internships and simulated projects, allowing them to gain direct work experience that serves as a foundation for learning. Students then reflect individually and in groups, analyzing their actions,

challenges, and outcomes to develop deeper insights. These reflections are transformed into abstract concepts and practical principles, helping students build theoretical knowledge and problem-solving strategies. Finally, students actively experiment by applying these insights to new scenarios, continuously refining their skills through practice.

2.4.5 Situated Learning Theory

Situated learning theory (Lave, J. & Wenger, E. 1991) explains the process and development of learning when individuals have the opportunity to participate in a community of practice. In such a community, new learners reach the level of the expert as they have more opportunities to practice within the context of learning. In this light, learning is unintentional; this unintentional nature of learning is what the authors call Legitimate Peripheral Participation (LPP). In LPP, the learner moves from the periphery of the community to the center as he/she gains expertise and engages and participates actively in the sociocultural practices of the community.

A number of studies focus on the effects of situated learning and student knowledge acquisition. For example, Zheng (2010) compared situated and traditional learning and found a positive correlation between situated learning and the learner's performance. In another study, Bell and colleagues (2013) investigated the effectiveness of a teacher preparation program aligned with SLT in improving preservice science teachers' use of technology during their student teaching experiences. The findings of this study suggest that situated learning theory may provide an effective structure for preparing preservice teachers to integrate technology in ways that support reform-based instruction. Further, Catalano (2015) explored the efficacy of situated learning to facilitate the transfer of knowledge from an instructional situation to its application in environments outside the classroom. Their findings suggest that learning based in situated environments transfers more frequently and provides usable knowledge to real world contexts.

In conclusion, the Situated Learning Theory (SLT) can be applied by creating authentic learning communities where students gradually engage in and take on more complex tasks within real work environments. Students build or "construct" their knowledge from their experiences brought into the learning environment, with the success of these situated learning experiences relying on social interactions and hands-on activities. This method improves their teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills. Through such progressive involvement, students can effectively apply the knowledge they have acquired to real-world scenarios, significantly boosting their employability.

2.5 Conceptual Framework

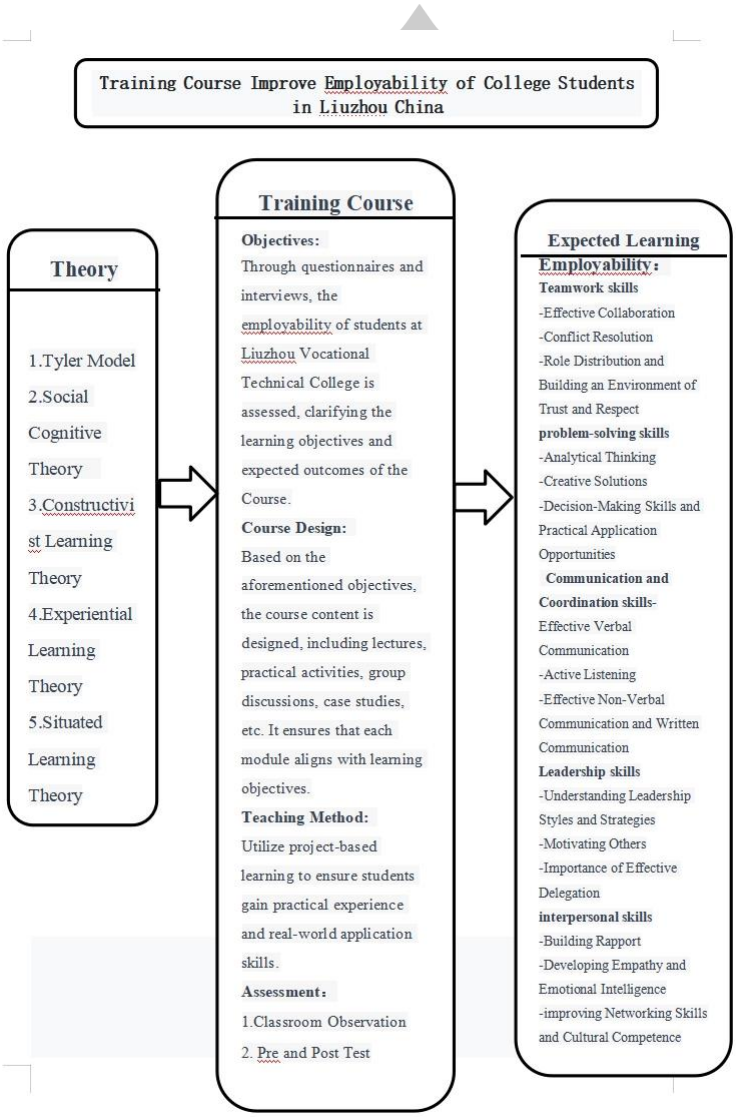


Figure 3 Conceptual framework used in the study

In developing training course aimed at improving college students' employability, the Tyler Model serves as a guiding framework, integrating Social Cognitive Theory, Constructivist Learning Theory, Experiential Learning Theory, and Situated Learning Theory to improve students' teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills. As illustrated in Figure 3, the Tyler Model guides the curriculum development process through its four steps, ensuring that students are well-prepared for real-world work environments.

Social Cognitive Theory emphasizes the role of observation and modeling in learning, enabling students to improve their communication and collaboration skills by observing and learning from peers in a team setting. Constructivist Learning Theory posits that learners are active participants in their learning journey, constructing knowledge based on their experiences. Therefore, the curriculum is designed to encourage students to actively engage in real-world tasks and problem-solving activities, often utilizing a project-based learning (PBL) approach. This approach allows students to work on real-world projects that require the integration and application of multiple skills, thereby improving their leadership and problem-solving skills. Experiential Learning Theory further supports this by emphasizing learning through practical activities, ensuring that students gain valuable interpersonal skills through hands-on experience in authentic settings. Situated Learning Theory contributes by creating learning communities where students gradually take on more complex tasks, thereby improving their overall employability.

CHAPTER III

RESEARCH METHODS

Developing training course to Improve the employability of college students follows the procedure and methodology of research and development (R&D). It is divided into the following 3 stages:

1. Phase I: Contextual study (R), this phase of research has a period of 8 weeks, consisting of 3 steps as follows:

- Step 1 Documentary research about the theories, concepts, and principles related to training course, as well as factors influencing employability.(June 5th to June 25th, 2023)
- Step 2 Questionnaire survey conducted on 300 recent graduates, 200 alumni, and 10 companies recruiting graduates from Liuzhou Vocational and Technical College.(June 26th to July 16th, 2023)
- Step 3 Interviews with 7 randomly selected companies recruiting graduates from Liuzhou Vocational and Technical College. Information on factors influencing college students' employability will be collected.(July 17th to July 30th, 2023)

2. Phase II Construction (D), takes 8 weeks, consisting of 4 steps as follows:

-Step 1 :Develop the training course to Improve college students' employability (July 31th to August 6th, 2023).

-Step 2: Evaluate the validity of the developed training course (from August 7st to 13th, 2023).

-Step 3:Pilot Development Program for 100 Graduating Students of Liuzhou Vocational and Technical College in 2024, totaling 20 hours over 5 weeks (August 14th to September 17th, 2023).

-Step 4: Make improvements to the developed course based on trial feedback (September 18th to 24th, 2023).

3. Phase III Implementation (R), takes 10 weeks, consisting of 2 steps as follows:

- Step 1 Step 1 Implementation of the training course, 4 hours per week, totaling 36 hours. (September 25th to November 20th, 2023)

Step 2 Evaluation of the effectiveness of the Training Course in improving college students' employability. (November 21th to December 3st, 2023)

To improve Liuzhou Vocational and Technical College students' employability can be summarized into interrelated steps as shown in the illustration and details of the procedures are shown. The research will be carried out as shown in the following Figure 4.

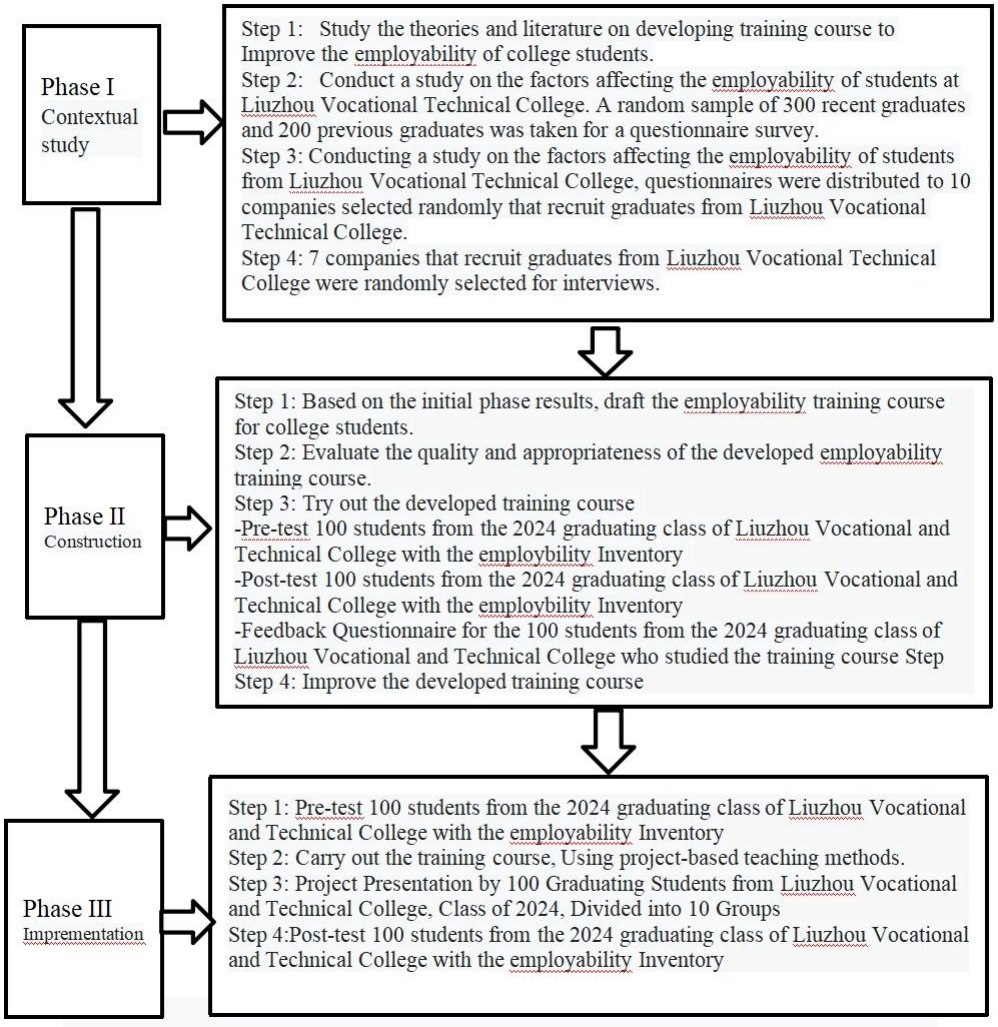


Figure 4 Steps to Develop Training Course

Summary of Research Methods

Phase	Purpose	Methods/Tools	data Collection	Data Analysis	Output
Phase I Contextual Study	1.1 To study the theories, concepts, and principles related to employability improvement training course.	Documentary research	Government documents, current textbooks, articles and related literature	Content Analysis	Conceptual framework, theory
	1.2 To study the employability status information of Liuzhou Vocational and Technical College students	Questionnaire on line	10 companies that recruit graduates from Liuzhou Vocational and Technical College; 300 recent graduates and 200 past graduates from Liuzhou Vocational and Technical College	Content Analysis, basic statistics include mean	Training course content, teaching method
	1.3 To study the employability status information	Semi-structured interview	7companies that recruit graduates from	Content Analysis	Training course content, teaching method

	of Liuzhou Vocational and Technical College students		Liuzhou Vocational and Technical College		
Phase II Construction	2.1 To develop an employability improvement training course of college students.	Take the information obtained from Phase I research, training course was drafted to improve employability for Liuzhou Vocational and Technical College students	Information obtained from Phase I	Content Analysis	Training course to improve employability for Liuzhou Vocational and Technical College students
		Evaluate the validity of the developed Training course by 5 experts	5 experts	Content Analysis	The validity and reli skills of the developed Training course
	2.2 To pilot the developed employability training course and refine it based on feedback and outcomes.	-Pre and post test of employability -Feedback Questionnaire	100 students from the 2024 graduating class of Liuzhou Vocational and Technical College	Content Analysis, basic statistics include mean, standard deviation, percentage	Data and information help to improve the developed Training course
Phase III Implementation	Implement the developed employability training course to evaluate its effectiveness	- Pre and post test of employability -Project Presentation	100students from the 2024 graduating class of Liuzhou Vocational and	Content Analysis, basic statistics include mean, standard deviation,	Information of Liuzhou Vocational and Technical College students' teamwork skills

in improving the employability of Liuzhou Vocational and Technical College students.		Technical College	percentage	Information of Liuzhou Vocational and Technical College students' problem-solving skills
				Information of Liuzhou Vocational and Technical College students' communication and coordination skills
				Information of Liuzhou Vocational and Technical College students' leadership skills
				Information of Liuzhou Vocational and Technical College students' interpersonal skills

Table 1 Summary of Research Methods

3.1 Phase I Contextual Study

At this stage, the researcher examined the theories and concepts related to the training course, as well as the current status of the employability of students at Liuzhou Vocational and Technical College. This study served as a foundation for the development of the training course. The researcher used both Documentary Research and Survey Research methods. The specific steps are as follows:

Step 1: Study of Theories, Perspectives, and Principles Related to College Students' employability and Training Course

In this step, the researcher dedicates time to exploring and understanding various theories, perspectives, and principles relevant to the employability of college students and the development of associated Training course. This process involves:

1. Documentary Research: Investigating academic literature, government reports, and other relevant documents to gather comprehensive information on theories and concepts related to college students' employability.

2. Database Review: Conducting thorough searches in academic databases such as CNKI, ERIC, and Google Scholar to find research articles, studies, and publications that focus on the employability of college students both in China and internationally.

3. Analysis of Educational Research: Reviewing research articles by educational experts as well as theses from master's and doctoral students to identify trends in the development of college students' employability.

4. Identification of Improvement Strategies: Analyzing the gathered information to determine effective strategies for improving college students' employability.

5. Tyler Model Application: Utilizing the Tyler Model as a framework for training course development, ensuring that the training course is structured with clear objectives, effective teaching methods, and logical sequencing.

6. Questionnaires and Interviews: The researchers compiled factors mentioned in studies to guide the data collection tools, including questionnaires, companies interviews.

The aim of this step is to establish a solid foundation that will inform the development of a training course designed to improve the job readiness and employability of college students.

Step 2: Questionnaire for Liuzhou Vocational and Technical College Students on employability status

In this step, the researcher designs and administers a questionnaire to 300 students from the 2024 graduating class of Liuzhou Vocational and Technical College

and 200 students from the 2023 graduating class of Liuzhou Vocational and Technical College, as well as to 10 companies that recruit graduates from Liuzhou Vocational and Technical College. This process includes:

1. Questionnaire Development: Assessed using the Employment Competency Assessment Scale developed by Wang Feng (2018)

2. Participant Recruitment: Identifying and recruiting a random sample of 300 recent graduates, 200 previous graduates, and 10 randomly selected companies that hire graduates from Liuzhou Vocational and Technical College.

3. Data Collection: Distributing the questionnaire and collecting responses from the graduates and companies. Data Analysis:

4. Analyzing the questionnaire data to identify the specific areas that need improvement in order to improve the employability of college students.

Step 3: Semi-Structured Interviews for Liuzhou Vocational and Technical College Students on employability status

This step involves conducting semi-structured interviews with companies that recruit graduates from Liuzhou Vocational and Technical College to gather in-depth information about the skills and competencies needed to improve employability. Key activities include:

Selection of Participants: Identifying and selecting 7 companies that have experience recruiting graduates from Liuzhou Vocational and Technical College.

Interview Preparation: Developing an interview guide with open-ended questions that allow employers to share their insights and experiences regarding the skills, competencies, and attributes they seek in graduates.

Conducting Interviews: Engaging with company representatives in semi-structured interviews to explore their perspectives on the employability of graduates, including challenges they observe and areas for improvement.

Data Analysis: Analyzing the interview data to identify themes, patterns, and insights that can inform the development and improvement of the employability training course.

This step aims to capture practical insights from employers directly involved in hiring graduates, ensuring that the training course is aligned with industry needs.

3.1.1 Population and Sample

3.1.1.1 Questionnaire

1. From a total of 2,030 graduates in the class of 2024 at Liuzhou Vocational and Technical College, according to Taro Yamane's (1967) formula, the sampling number should not be less than 95. In this research, 300 graduates were selected through random sampling to complete an online questionnaire assessing their employability status.

2. From a total of 2,615 graduates in the class of 2023 at Liuzhou Vocational and Technical College, according to Taro Yamane's (1967) formula, the sampling number should not be less than 96. In this research, 200 graduates were selected through random sampling to complete an online questionnaire assessing their employability status.

3. According to Cochran's Formula (1977), the sample size should be at least 10 companies when sampling 20% from the 48 companies recruiting graduates from Liuzhou Vocational and Technical College. In this study, 10 companies were selected for sampling, and an online survey was completed to assess their employment conditions.

3.1.1.2 Semi-structured interviews

Among the 48 companies recruiting graduates from Liuzhou Vocational and Technical College, interviews were conducted with seven companies that recruit graduates from the seven colleges of Liuzhou Vocational and Technical College, including:

Liuzhou Bailian Airport (柳州白莲机场)

Guangxi Liugong Group Co., Ltd.(广西柳工集团有限公司)

Shangri-La Hotel(香格里拉酒店)

Liuzhou Iron and Steel Co., Ltd(柳州钢铁股份有限公司)

Walmart Supermarket (Liuzhou)(沃尔玛超市(柳州))

Liuzhou Xincheng Art Training Center Co., Ltd.(柳州市鑫辰艺术培训中心有限公司)

3.1.2 Instrument

3.1.2.1 Questionnaire

1. Questionnaire concerning the factors affecting the employability of graduates of Liuzhou Vocational Technical College. This is a student opinion questionnaire using a 5-level rating scale, covering different genders and majors. Through an online survey, 26 items were included: personal personality traits, employability traits, career management skills, professional identity, teamwork skills, basic office skills, interpersonal communication and coordination skills, independent work skills, problem-solving skills, execution skills, innovation and entrepreneurship skills, practical skills, personal management skills, job-seeking skills, adapt skills, learning skills, resource integration and utilization skills, information management skills, reasoning and judgment skills, organizational leadership skills, communication and coordination skills, social capital (such as graduate school, social relationships, etc.), socio-economic factors, academic human capital (such as academic performance, social relationships, etc.), socio-economic factors, academic human capital (such as academic performance, certificates, etc.), professional skills, and professional knowledge. The author forwarded the questionnaire requirements and the online questionnaire link to graduates from different majors at Liuzhou Vocational and Technical College for completion.

The survey questionnaire mainly consists of two parts. It primarily includes filling out basic information of the respondents, including gender, school, etc., and

secondly, identifying whether the sample is made up of recent graduates. Respondents are required to evaluate their own personal situation based on the 26 skills mentioned above, i.e., "Based on the following skills, how would you rate yourself? 1 = Very Dissatisfied, 5 = Very Satisfied." This question is mainly designed to understand college students' subjective evaluations of their own employability levels and to explore which employability college students are satisfied with.

2. In order to align with students' perceptions and evaluations, this study also utilized a comprehensive analysis of previous domestic and international research on the constituent elements of college students' employability. We developed a survey questionnaire for employers to gain insights into the importance of college students' employability from the perspective of employers and to understand how employers evaluate college students' employability. This indirectly allows us to gauge the satisfaction and demands of employers regarding graduates' employability.

The survey questionnaire is a 5-level rating scale employer opinion questionnaire. It mainly consists of two parts: first, gathering basic information about the respondents, including gender, organization type, location, etc. Second, it requires the respondents to evaluate and rate the current status of the 26 skills mentioned above for college students in their organization, i.e., "How would you evaluate the following employability of college students in this organization? 1 = Very Dissatisfied, 5 = Very Satisfied." Through this question, we can understand the satisfaction and evaluation of employers regarding the current employability of college graduates. On one hand, it allows us to identify the strengths and weaknesses of college students' employability, and on the other hand, it helps us analyze the skills and elements that employers value but are lacking in college graduates.

3.1.2.2 Semi-structured interviews

Semi-structured interviews regarding factors influencing the employability requirements of Liuzhou Vocational Technical College graduates as perceived by companies. Divided into 4 sections:

Part 1: General information about the interviewee, consisting of 2 questions.

Part 2: Impressions and experiences with graduates from Liuzhou Vocational Technical College, consisting of 2 questions.

Part 3: There are two questions regarding companionship for the employability of graduates from Liuzhou Vocational and Technical College.

Part 4: Suggestions and expectations for the school, consisting of 1 question.

3.1.3 Measurement Design

3.1.3.1 Questionnaires

The employment competency status of graduates from Liuzhou Vocational and Technical College was assessed using the Employment Competency Assessment Scale developed by Wang Feng (2018), which includes 26 items.

Validity of the Instrument: Check with 5 experts, The 5 experts including 1 research and evaluation experts, 1 educational psychology expert, 2 employment guidance expert, and 1 curriculum development expert. Details as follow:

Expert 1: Tan Xin, Professor, with 26 years of teaching experience, working at Liuzhou Vocational and Technical College, expert in research and evaluation.

Expert 2: Zuo Nihong, Professor, Ph.D., with 24 years of teaching experience, working at Liuzhou Vocational and Technical College, expert in curriculum development expert.

Expert 3: Dong Luying, Professor, a psychology teacher, with 25 years of teaching experience, employed at Liuzhou Vocational and Technical College, expert in Educational Psychology.

Expert 4: Xu Ming, Professor, with 24 years of career counseling experience, working at Liuzhou Vocational and Technical College, expert in Employment Guidance.

Expert 5: Zeng Zhi, Associate Professor, with 18 years of career counseling experience, employed at Liuzhou Vocational and Technical College , expert in Employment guidance.

Analyze the quality of the tools using the Index of Consistency (IOC) and compare them to standards ranging from 0.50 to 1.00. The student questionnaire has an IOC consistency index between 0.80 and 1.00, the employer questionnaire has an IOC consistency index between 0.80 and 1.00, This indicates that all two versions of the tools can be used. Detailed assessment results can be found in the appendix.

Revise and improve the two versions of the tools based on the recommendations of the experts.

3.1.3.2 Semi-Structured Interview

1. Exploring Influencing Factors

Begin by studying relevant literature, including textbooks, academic articles, and reports that discuss the principles and concepts influencing employability. Focus specifically on identifying factors that impact employability from the perspective of employers. This exploration serves as the foundation for creating interview questions that are well-informed and relevant to the research objectives.

2. Define the Type of Information

Determine the type of qualitative data needed from the interviews. The goal is to gather in-depth and contextual information that offers narrative insights into the factors influencing employability. The interviews should capture detailed descriptions of employers' experiences, perspectives, and opinions regarding employability.

3. Write Questions and Create Employer Interview Form

Develop a semi-structured interview form that includes a series of open-ended questions designed to elicit comprehensive responses from employers. The form should be divided into sections that cover different aspects of employability. The structure should allow for flexibility in the conversation, enabling the interviewer to probe deeper into specific areas as needed. The interview form might include questions about the

challenges employers face in finding suitable candidates, the skills they prioritize, and their experiences with recent hires.

4. Check the Employer Interview Form with Advisor

Submit the initial draft of the employer interview form to your advisor for review. The advisor will assess the clarity, relevance, and appropriateness of the questions. Based on the feedback, make any necessary revisions to improve the form. This step ensures that the interview questions are aligned with the research goals and are likely to yield meaningful data.

5. Check the Revised Employer Interview Form with Experts

Presented to 5 experts to check the validity of created instrument. The 5 experts including 1 research and evaluation experts, 1 educational psychology expert, 2 employment guidance expert, and 1 curriculum development expert. Details as follow:

Expert 1: Tan Xin, Professor, with 26 years of teaching experience, working at Liuzhou Vocational and Technical College, expert in research and evaluation.

Expert 2: Zuo Nihong, Professor, Ph.D., with 24 years of teaching experience, working at Liuzhou Vocational and Technical College, expert in curriculum development expert.

Expert 3: Dong Luying, Professor, a psychology teacher, with 25 years of teaching experience, employed at Liuzhou Vocational and Technical College, expert in Educational Psychology.

Expert 4: Xu Ming, Professor, with 24 years of career counseling experience, working at Liuzhou Vocational and Technical College, expert in Employment Guidance.

Expert 5: Zeng Zhi, Associate Professor, with 18 years of career counseling experience, employed at Liuzhou Vocational and Technical College, expert in Employment guidance.

6. Analyze the Validity of the Instrument

Use the Index of Consistency (IOC) to analyze the validity of the interview form. The IOC will help quantify the consistency of each question, ensuring that it aligns with

the research objectives. Compare the IOC values to the accepted standard range of 0.50 to 1.00, with a target range of 0.80 to 1.00. Document the analysis results, which will indicate whether the interview form is reliable and ready for use. Detailed assessment results can be found in the appendix.

7. Improve and Revise the Instrument

Based on the expert feedback and the IOC analysis, make final revisions to the interview form.

3.1.4 Data Collection

3.1.4.1 Questionnaires

1. 2024 Graduates:

The survey link was distributed to 300 graduates of the class of 2024, from June 26, to July 16, 2023.

-An online platform, specifically the Sojump mini program, was utilized to ensure easy access and submission of the questionnaire.

-The online questionnaire was designed to be user-friendly and compatible with various devices to maximize the response rate.

-Throughout the survey period, responses were monitored, and reminders were sent to encourage participation.

-By the end of the survey period, all 300 questionnaires were effectively recovered, resulting in a 100% recovery rate.

-The collected responses were compiled and analyzed while ensuring the privacy and confidentiality of participant information.

2. 2023 Graduates:

The survey link was distributed to 200 graduates of the class of 2023, from June 26, to July 16, 2023.

-The Sojump mini program was also used for this group to facilitate easy access and submission of the questionnaire.

-The design and compatibility of the questionnaire were consistent with those provided to recent graduates to maintain uniformity.

-Responses were monitored regularly, with reminders sent to participants to achieve a high response rate.

-At the end of the survey period, all 200 questionnaires were successfully recovered, resulting in a 100% recovery rate.

-The collected responses were compiled and analyzed while ensuring the privacy and confidentiality of participant information.

3. Companies:

The survey link was sent to 10 companies on June 26, 2023, and the survey was open until July 16, 2023.

-The companies received the questionnaire via the Sojump mini program, allowing for easy access and submission.

-Efforts were made to ensure that the questionnaire was straightforward and accessible, minimizing any potential barriers to completion.

-Regular follow-ups and reminders were conducted to ensure maximum participation.

-By the end of the survey period, all 10 questionnaires were effectively recovered, resulting in a 100% recovery rate.

-The responses from the companies were carefully compiled and analyzed, with strict measures in place to protect the privacy and confidentiality of the data.

3.1.4.2 Semi-structure Interview

The researcher conducted interviews with the Human Resources Managers of 7 companies that have been recruiting graduates from Liuzhou Vocational and Technical College. All 7 HR Managers had been working in their respective companies for more than 3 years, including 4 managers who had extensive experience in recruiting technical graduates, 2 managers who were new to the recruitment of vocational graduates but showed a strong interest in expanding their hiring in this area, and 1 manager who had

experience in developing recruitment strategies. The interviews were conducted from July 17, 2023, to July 30, 2023.

Interview Setup:

-Schedule interviews with HR Managers who have experience in recruiting graduates from vocational and technical colleges.

-Ensure a quiet and professional setting for the interviews, accommodating both in-person and virtual formats to suit the participants' preferences.

Interviewing:

-Each interview began with the researcher explaining the purpose and goals of the interview, focusing on gathering insights into the companies' recruitment experiences and expectations.

-A semi-structured interview outline was used as a guide to ensure that all relevant topics were covered, while allowing flexibility for the HR Managers to elaborate on their responses.

-The interviews were recorded using appropriate tools, such as audio recording devices or detailed note-taking, to ensure that all responses were captured accurately.

Transcription and Documentation:

-The recorded interviews were transcribed verbatim to preserve the exact responses of the participants.

-Detailed notes were compiled alongside the transcriptions to provide a comprehensive overview of the interviews.

-The researcher ensured that the responses of the HR Managers were accurately represented in the final documentation, maintaining the integrity of the data collected.

3.1.5 Statistic for Data Analysis

3.1.5.1 Questionnaires

This paper employs a questionnaire survey method to delineate 26 key indicators that reflect the structure of college students' employability. Based on this

indicator framework, a self-assessment questionnaire for college students' employability was developed. Using SPSS software, the relevant data were analyzed, and descriptions and analyses were conducted on the data's mean:

1. 2024 Graduaes:

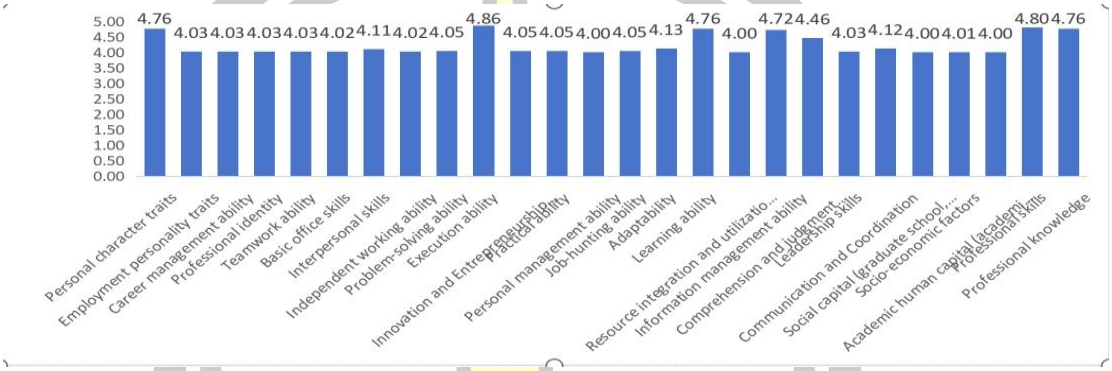


Figure 5 Ranking of the perceived employability of higher vocational students

The statistical results show that graduates from Liuzhou Vocational and Technical College have recognition scores of 4.00 or above for the importance of all 26 employability, with an average score of 4.23, indicating a relatively high level of awareness. As shown in Figure 5, vocational students believe that the five most important factors in employment are execution skills, professional skills, professional knowledge, learning skills, and personal character traits, with importance scores ranging from 4.76 to 4.86. The differences in importance scores are relatively small. At the lower end of the rankings are communication and coordination skills, teamwork skills, interpersonal skills, problem-solving skills, leadership skills, job-seeking skills, and adapt skills, with scores ranging from 4.03 to 4.13. The three lowest-ranked factors are social capital (graduation institutions, social connections, etc.), educational human capital (academic performance, certifications, etc.), and socioeconomic factors, with scores significantly lower than the previous employability, ranging from 4.00 to 4.01.

2. 2023 Graduates:

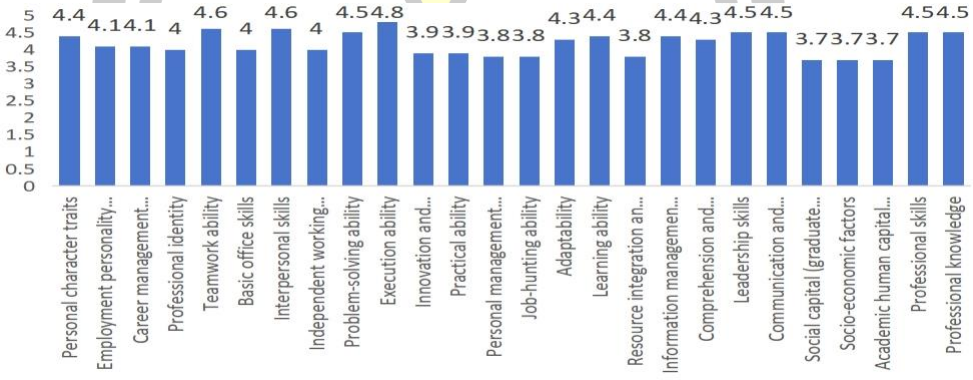


Figure 6 Ranking of the perceived employability of higher vocational students

The statistical results show that the scores of the importance of 26 employability factors given by past graduates range from4.32 to 4.92, with an average of 4.59 for each skill, which is a relatively high level. As can be seen from Figure 6, the top five factors that vocational college past graduates consider most important in employment are execution skills, professional skills, professional knowledge, learning skills, and personal character traits. The scores of their importance do not differ greatly, ranging from 4.78 to 4.92.

3. Companies:

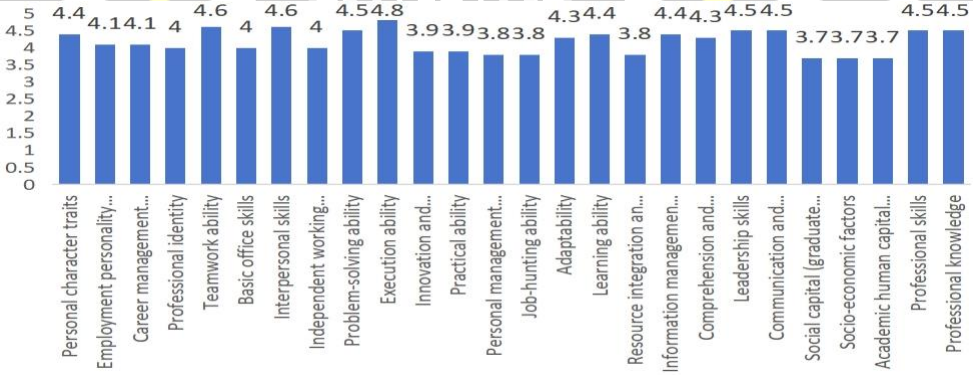


Figure 7 Employer perceived employability importance ranking

According to the statistical results, employers' evaluations of the importance of 26 employability range from 3.73 to 4.6, with an overall average score of 4.06, indicating a high level of importance. The top six skills include execution skills, problem-solving skills, teamwork skills, interpersonal skills, communication and coordination skills, and leadership skills.

The score for execution skills is 4.80, showing that employers place the highest importance on this skill. They believe that the skills to complete tasks efficiently and with high quality is one of the most crucial qualities for graduates, expecting employees to complete assigned tasks on time and to a high standard.

The score for teamwork skills is 4.60, reflecting its importance in the workplace. Employers hope that employees can effectively collaborate with others to achieve team goals. This is consistent with students' self-assessments but also indicates that there is still room for improvement in this area.

The score for interpersonal skills is also 4.60, demonstrating employers' emphasis on this skills. Many employers believe that graduates often lack experience in handling complex interpersonal skills. Therefore, improving interpersonal skills will help them better integrate into teams in the workplace.

The score for problem-solving skills is 4.50, highlighting its importance. Employers want graduates to be able to quickly identify problems and propose effective solutions to address complex situations and challenges in the workplace. This skills is seen as key to success in a dynamic work environment.

The score for communication and coordination skills is 4.50, reflecting the importance of this skill in the workplace. Good communication and coordination skills help ensure the flow of information and maintain good working relationships, thereby improving organizational efficiency and promoting teamwork skills.

The score for leadership skills is 4.50, indicating employers' expectations for the future development potential of graduates. Employers hope that employees with leadership skills can lead teams, motivate others, and drive projects forward, taking on higher roles within the organization. This skills is essential not only for personal development but also for the overall performance of the team and organization.

Through a questionnaire survey of 300 recent graduates, 200 past graduates from Liuzhou Vocational Technical College, and 10 companies, the factors that recent graduates think are most important for employment are different from those valued by past graduates and companies. Leading to a mismatch of supply and demand.

3.1.5.2 Semi-structured interviews

Content analysis methodology was used to analyze the semi-structured interview data from seven companies that recruit graduates from Liuzhou Vocational and Technical College

- Initial Familiarization:

Review the transcriptions or notes to become familiar with the content and responses.

Note recurring themes, ideas, and patterns in participants' feedback.

- Open Coding:

Start by identifying key phrases, concepts, and ideas from the data.

Assign descriptive labels or codes to these segments of data.

Aim to capture the variety of viewpoints expressed by participants.

- Theme Development:

Group related codes together to form themes.

These themes should reflect common topics, concerns, suggestions, and opinions that emerged during the interviews.

- Data Interpretation:

Analyze each theme in depth to understand the underlying meanings and implications.

Consider the context in which participants' statements were made.

- Synthesis and Conclusion:

Identify overarching trends and conclusions that emerge from the analysis.

Highlight insights about training course content, teaching methods, resources, challenges, and recommendations.

Besides, literature review's result affects the training course content design.

3.2 Phase II Construction

The researcher began by studying books, articles, literature, and related research, deeply exploring theories, concepts, and principles related to the development of training course and the employability of college graduates. Then, by combining questionnaire surveys and interviews with graduates and companies from Liuzhou Vocational and Technical College, various factors affecting graduate employability were analyzed. On this basis, the researcher developed a Training Course following the research steps outlined below:

3.2.1 Develop Training Course

1. From the initial phase of the research, data was synthesized to establish the objectives of the Training Course: to Improve the employability of students from Liuzhou Vocational and Technical College in terms of teamwork skills, problem-solving skills, Communication and coordination skills, leadership skills, and interpersonal skills.

2. Based on the preliminary research results, a training course was developed by integrating the Tyler model. The framework, content, instructional design, and teaching

strategies of the course were designed using Social Cognitive Theory, Constructivist Learning Theory, Situated Learning Theory, and Experiential Learning

The author designed the training course contents to improve Liuzhou Vocational and Technical College students' employability as shown in Table 2:

No.	Topic	Key Information
1	Teamwork **Skills**	1. Basic Principles of Teamwork 2. Team Roles and Responsibility Allocation 3.Project： Online Snail Noodle Entrepreneurship Competition
2	**Problem-solving Skills**	1.Basic Steps in Problem Solving 2.Project： "Smart City" Innovation Challenge
3	**Communication and Coordination Skills**	1.Basic Principles and Techniques of Communication 2.Project： "Cross-departmental Project Collaboration" Communication Exercise
4	**Leadership Skills**	1.Basic Concepts of Leadership 2.Project： Campus Public Service Activity Planning and Execution
5	**Interpersonal Skills**	1. The Importance of Interpersonal Relationships 2 .Techniques for Building and Maintaining Interpersonal Relationships 3.Project： "Cross-cultural Communication" Simulation Practice

Table 2 Training Course Structure Design

The training course consists of 5 topics, including teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills

3. Present the created training course draft to the advisor. To check accuracy and appropriateness and improve according to recommendations from the advisor.

3.2.2 Evaluate the Validity of the Developed Training Course

The researchers examined the validity and reliability of the course to improve the employability of graduates from Liuzhou Vocational and Technical College through assessment by qualified experts, following these steps:

Step 1: Identify Experts

Five senior experts assessed the quality and reliability of the employability training course for graduates of Liuzhou Vocational and Technical College.The 5 experts including 1 research and evaluation experts, 1 educational psychology expert, 2 employment guidance expert, and 1 curriculum development expert. Details as follow:

Expert 1: Tan Xin, Professor, with 26 years of teaching experience, working at Liuzhou Vocational and Technical College， expert in research and evaluation.

Expert 2: Zuo Nihong, Professor, Ph.D., with 24 years of teaching experience, working at Liuzhou Vocational and Technical College， expert in curriculum development expert.

Expert 3: Dong Luying, Professor, a psychology teacher, with 25 years of teaching experience, employed at Liuzhou Vocational and Technical College， expert in Educational Psychology.

Expert 4: Xu Ming, Professor, with 24 years of career counseling experience, working at Liuzhou Vocational and Technical College， expert in Employment Guidance.

Expert 5: Zeng Zhi, Associate Professor, with 18 years of career counseling experience, employed at Liuzhou Vocational and Technical College， expert in Employment Guidance.

Step 2: Expert Meetings

For the experts meeting, the measurement design includes 12 sections.

1. Introduction and Context Setting:

Welcome and introduce the purpose and objectives of the training course.

Provide an overview of the importance of improving employability among college students.

2. Roundtable Discussion:

Facilitate an open discussion where each expert shares their initial thoughts on the essential employability.

Encourage experts to provide insights on the key skills such asteamwork skills, problem-solving, communication, leadership, and interpersonal skills.

3. Course Components:

Break down the course into its main components: content, teaching methods, resources, and assessment.

Ask experts to provide feedback on each component, focusing on how to effectively teach and reinforce the targeted skills.

4. Teaching Experts' Input:

Invite teaching experts to share their experiences with similar employability course.

Discuss effective teaching strategies, engagement techniques, and common challenges in teaching employability.

5. Skill-Specific Discussions:

Conduct focused discussions on each skill area (Teamwork, Problem-solving, Communication, Leadership, interpersonal skills).

Gather expert opinions on the best practices, tools, and methods for teaching and assessing these skills.

6. Assessment and Evaluation:

Engage experts in a discussion on how to measure students' development in the targeted skills.

Explore different assessment methods, including practical exercises, peer reviews, and self-assessment tools.

7. Resources and Technology:

Discuss the types of resources, multimedia, and technology that can improve the learning experience.

Explore ways to integrate digital tools and platforms to support skill development and real-world application.

8. Challenges and Recommendations:

Allow experts to identify potential challenges in implementing the training course.

Encourage them to provide solutions and recommendations to overcome these challenges.

9. Synergy and Integration:

Facilitate a discussion on how the different skill areas can be integrated into a cohesive Training Course.

Explore opportunities for cross-disciplinary approaches that combine various skills into comprehensive learning experiences.

10. Brainstorming and Idea Sharing:

Open the floor for new ideas, innovative teaching approaches, and potential collaborations.

Encourage creative thinking about how to make the course more engaging and effective.

11. Wrap-Up and Action Items:

Summarize the key insights, recommendations, and next steps discussed during the meeting.

Outline the action items and assign responsibilities for course development.

12. Follow-Up and Documentation:

Document the discussions, insights, and recommendations shared during the meeting.

Send a follow-up summary to all experts, inviting further input and validation of the course design.

Step 3: Improved the developed Training Course

According to comments and proposals from experts to revised developed training course to improve employability for students in Liuzhou Vocational and Technical College.

3.2.3 Try Out the Developed Training Course

With the purpose to gather feedback on the content, teaching method, and overall student experience before implementing, the training course content and class hours shown in Table 3.

No.	Topic	Key information	Objective	Hours
1	Teamwork Skills	1. Basic Principles of Teamwork 2. Team Roles and Responsibility Allocation 3.Project： Online Snail Noodle	1. Learn methods for effective collaboration within a team to ensure successful task completion. 2. Master conflict resolution strategies to maintain team harmony.	4

		Entrepreneurship Competition	3. Identify and take on different team roles, adjusting your work approach as needed. 4. Establish and maintain a team environment of trust and respect, promoting a positive work atmosphere.	
2	Problem-solving Skills	1.Basic Steps in Problem Solving 2.Project："Smart City" Innovation Challenge	1. Develop analytical thinking to systematically identify and understand the root causes of problems. 2. Use creative thinking to develop diverse solutions and select the optimal strategy. 3. Improve decision-making skills to make effective choices in complex situations. 4. Provide practical opportunities for students to apply theory to real-world problems, validating and improving solutions.	4
3	Communication and Coordination Skills	1.Basic Principles and Techniques of Communication 2.Project："Cross-departmental Project Collaboration" Communication Exercise	1. Strengthen effective oral communication skills to ensure accurate transmission and understanding of information. 2. Develop the habit of active listening to understand and respond to others' perspectives. 3. Master non-verbal communication techniques, such as body language and facial expressions. 4. Improve written communication skills to convey information clearly and concisely.	4

4	Leadership Skills	1.Basic Concepts of Leadership 2.Project： Campus Public Service Activity Planning and Execution	1. Understand different leadership styles and strategies to adapt to various team needs. 2. Learn how to motivate team members, unleashing their potential and enthusiasm. 3. Master the importance of effective task delegation, ensuring the efficient allocation of resources and responsibilities. 4. Cultivate leadership decision-making skills through practice, enabling you to play a leading role in a team.	4
5	Interpersonal Skills	1. The Importance of Interpersonal Relationships 2 .Techniques for Building and Maintaining Interpersonal Relationships 3.Project： "Cross-cultural Communication" Simulation Practice	1. Learn methods to establish and maintain harmonious interpersonal relationships, fostering effective collaboration. 2. Develop empathy and emotional intelligence, increasing sensitivity to others' emotions and needs. 3. Improve networking skills to expand and strengthen professional relationships. 4. Improve cultural adapt skills to work and communicate effectively in diverse environments.	4

Table 3 Training Course Try-out Content and Class Hours

Step 1: Pre-test

Purpose

To assess the employability of college students before exposure to the training course.

2. Population and Sampling

Population: 2,030 students graduating from Liuzhou Vocational and Technical College in 2024.

Sampling: Select 100 students graduating from Liuzhou Vocational and Technical College in 2024 to participate in a pilot employbility training course.

3. Sampling Design

According to Taro Yamane's (1967) formula, the sample size for the 2,030 graduates of Liuzhou Vocational and Technical College in 2024 should be no less than 95. In this study, a purposive sampling method was employed, selecting a total of 100 graduates from seven colleges to participate in the pilot training course.

4. Instrument

To assess the employability of the selected 100 graduates, a pre-test will be conducted to evaluate their baseline skills in five key areas: teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills. The test will utilize five established instruments: TRI by Meredith Belbin, PSI by Donald A. Neudecker, CCQ by James C. McCroskey, LPI by James M. Kouzes and Barry Z. Posner, and SSI by E. William Riggio. This pre-test consists of 25 items, with 5 items dedicated to each skill area.

5. Measurement Design

(1) Exploring Influencing Factors:

Study relevant textbooks, research articles, and industry reports to design a test that accurately assesses the targeted employability.

(2) Determine the Issues:

Determine the issues measured the 5 variables of the employability test: teamwork skills, problem-solving skills, Communication and coordination skills, leadership skills, and interpersonal skills.

(3) Create the Employability Test:

Develop a 25-item test with the following breakdown:

-Teamwork Skills (5 Items):

Willingness to Collaborate、Teamwork Skills、Achievement of Team Goals、Conflict Resolution、Effective Teamwork Skills

-Problem-solving Skills (5 Items):

Problem Identification, Problem Analysis and Assessment, Solution Formulation, Effectiveness of Problem-Solving、Feedback and Improvement

-Communication and Coordination Skills (5 Items):

Oral Communication, Written Communication, Cross-Cultural Communication, Communication and Coordination Skills Effectiveness, Listening Skills

-Leadership Skills (5 Items):

Model the Way, Inspire a Shared Vision, Challenge the Process, Enable Others to Act, Encourage the Heart

-Interpersonal skills (5 Items):

Collaborative Relationships, Conflict Management, Colleague Relationships, Social Skills, Relationship Management

(4) Check the Employability Test with Advisor:

Present the test to the following experts to ensure its accuracy and relevance.

The 5 experts including 1 research and evaluation experts, 1 educational psychology expert, 2 employment guidance expert, and 1 curriculum development expert. Details as follow:

Expert 1: Tan Xin, Professor, with 26 years of teaching experience, working at Liuzhou Vocational and Technical College, expert in research and evaluation.

Expert 2: Zuo Nihong, Professor, Ph.D., with 24 years of teaching experience, working at Liuzhou Vocational and Technical College , expert in curriculum development expert.

Expert 3: Dong Luying, Professor, a psychology teacher, with 25 years of teaching experience, employed at Liuzhou Vocational and Technical College , expert in Educational Psychology.

Expert 4: Xu Ming, Professor, with 24 years of career counseling experience, working at Liuzhou Vocational and Technical College , expert in Employment Guidance.

Expert 5: Zeng Zhi, Associate Professor, with 18 years of career counseling experience, employed at Liuzhou Vocational and Technical College , expert in Employment Guidance.

(5) Analyze the Validity of the Instrument:

The teaching design content is measured by the IOC Index (Item Objective Congruency Index). Expert evaluated each content by giving the content a rating scale as follows:

1 Refers to experts sure the teaching design content.

0 Refers to experts are not sure the teaching design content.

-1 Refers to experts are sure the teaching design 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.

After revising the training course based on the suggestions from the advising professor, the researchers reviewed the quality and reliability of the course to Improve the employability of Liuzhou Vocational Technical College graduates. Based on evaluations from 5 experts, the following are the IOC indices for various components: Chapter 1 on teamwork skills is at 0.90, Chapter 2 on problem-solving skills is at 0.90, Chapter 3 on communication and coordination skills is at 0.85, Chapter 4 on Leadership

Skills is at 0.90, and Chapter 5 on interpersonal skills is at 0.95. The IOC indices for all instructional content exceed 0.5. In a comprehensive assessment, the overall IOC index for the training course is 0.9, indicating that the training course is of high quality and relevance for improving the employability of graduates from Liuzhou Vocational and Technical College. (Detailed tables are provided at the end).

(6) Improve and Revise the Instrument:

Make improvements and revisions to the test based on expert feedback.

6. Syntax

-Administer the employability Test to the selected 100 graduates, in 2024 year.

-Record individual scores to establish a baseline for each skill area.

7. Data Collection

Collect pre-test scores for each skill area from the employability Test.

8. Data Analysis

Analyze the pre-test scores to establish a baseline for the employability of the students, which will be used to measure progress after the training course.

Step 2: Implement Project-Based Learning in Training Course

The following outlines the implementation of Project-Based Learning (PBL) within a college course aimed at improving students' employability. This approach leverages real-world scenarios and projects that allow students to apply their acquired knowledge and skills in a meaningful context. The course design is based on research and feedback from educators and industry professionals to ensure relevance and effectiveness.

1. Course Objectives

-Develop students' skills to apply academic knowledge to real-world problems.

-Foster teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills.

2. Project Design

-Projects should be aligned with current industry trends and needs, providing students with a glimpse into potential career paths.

-Encourage collaboration across different academic disciplines, allowing students to work in diverse teams and bring varied perspectives to the project.

Authentic Contexts

-Design projects that mirror actual industry challenges or societal issues, requiring students to conduct research, analyze data, and propose actionable solutions, simulating a professional working environment.

-Incorporate elements of fieldwork, such as site visits, interviews, or surveys, to collect data and inform project decisions.

4. Teaching Methodology

-Instructors act as facilitators, guiding students through the project process rather than delivering traditional lectures. They provide support, resources, and feedback as needed.

-Encourage students to take ownership of their projects, making decisions on direction, methodology, and final deliverable. This fosters independence and a sense of responsibility.

-Promote collaboration among students through team-based projects, peer reviews, and group discussions. This mirrors the collaborative nature of most workplaces.

5. Project Execution

-Break down projects into manageable milestones with clear deadlines. Each milestone should culminate in a tangible output, such as a report, or presentation.

-Implement regular check-ins and feedback sessions with both instructors and industry partners to ensure projects stay on track and meet quality standards.

-Encourage students to engage in reflective practice by documenting their learning journey, challenges faced, and how they overcame obstacles.

6. Assessment and Evaluation

Project-Based Assessment: Evaluate students based on their project deliverable, including the quality of research, innovation, execution, and presentation.

7. Teacher Training and Resources

-Professional Development: Provide training for educators on PBL methodologies, including project design, facilitation techniques, and assessment strategies.

-Resource Allocation: Ensure that teachers have access to the necessary resources, such as industry contacts, project management tools, and collaboration platforms.

8. Feedback and Adaptation

-Gather feedback from students throughout the course to identify areas for improvement.

-Use feedback to make iterative improvements to the course structure, project design, and teaching methods, ensuring the course remains relevant and effective.

9. Collaboration and Networking

-Establish long-term partnerships with industry stakeholders who can provide project ideas, mentor ship, and opportunities for student engagement.

By embedding Project-Based Learning in the course, students will gain practical experience, develop critical employability, and be better prepared to transition into the workforce with confidence and competence.

Step 3: Post-test

Purpose

To assess the impact of the developed Training Course on the employability of college students.

Population and Sampling

Population: Same 100 graduates from Step 1.

Sampling: The same 100 graduates will undergo the post-test.

Sampling Design

The same students who participated in the pre-test.

Instrument

Employability Test as step 1.

Measurement Design

Quantitative assessment using the employability test scores as step

Syntax

Administer the employability Test to the selected 100 graduates after the course exposure.

Record individual scores.

Data Collection

Collect post-test scores from the employability Test.

Data Analysis

Compare pre-test and post-test scores to evaluate the impact of the Training Course on employability.

Step 4: Feedback Questionnaire

Purpose

To gather feedback on content, teaching methods, and overall student experience with the developed Training Course.

Population and Sampling

Population: Same 100 graduates from Steps 1 and 3.

Sampling: Same 100 graduates will participate in the questionnaire.

Sampling Design

The same students who participated in the pre-test and post-test.

Instrument

Questionnaire: assessing content, teaching methods, and overall student experience.

Measurement Design

Qualitative and quantitative assessment based on responses to the questionnaire.

Syntax

-Administer the questionnaire to the selected 100 graduates after completing the training course.

-Collect responses.

Data Collection

Collect responses from the questionnaire.

Data Analysis

Analyze questionnaire responses to identify areas for improvement in the Training Course.

3.2.4 Improved the Developed Training Course

Aimed to thoroughly evaluate and improve the effectiveness of the training course in meeting its educational objectives, the research conducted pre/post-test and feedback questionnaire in the developed Improving employability Training Course for College Students try-out.

3.2.4.1 Results of pre/post-test of training course try-out based on Project-Based Learning

In try-out part, there were 100 graduates took the pre and post employability test. SPSS23.0 used to analyze the data from Pre -test and Post -test, the tests of normality shown in Figure 8.

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pretest	.071	100	.930	.975	100	.689
posttest	.081	100	.831	.1001	100	.912

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Figure 8 Tests of Normality (Try-out)

From the results shown in Figure 8, the number of samples is 100, Shapiro-Wilk for Pre -test: w=0.975, sig=0.689>0.05, Post -test: W=0.1001, sig=0.912>0.05, in line with normal distribution, can perform T test.

In order to determine whether the difference between employability between pre-test and post-test scores were statistically significant, t-test was applied for the paired samples shown in Figure8 and Figure 9.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	85.54	100	12.450	1.245
	Post test	107.07	100	15.320	1.532

Figure 9 Paired Samples Statistics (Try-out)

	Paired Differences					t	df	Sig.(2-tailed)
				95%Confidence Interval of the Difference				
	Mean	Std.Deviation	Std.Error Mean	Lower	Upper			
Pair 1 pretest-posttest	-21.530	19.730	1.973	-25.440	-17.620	-10.910	99	.000

Figure 10 Paired Sample Test (Try-out)

From Figure 10, it can be seen that the average of the research objects after experiment increased by 21.530 points, Sig. (2-tailed) = 0.000, less than 0.05, and the difference between 95% was between 17.620and 25.440 It shows that there is a statistically significant difference in the learning achievement of the research subject. The improvement details shown in Table 4.

	Teamwork	problem-solving skills	communication and coordination skills	Leadership Skills	interpersonal skills
Mean of Post test	16.00	17.50	16.80	18.00	17.24
Mean of Pre test	21.00	21.50	20.80	22.00	21.77
Improvement in percentage	31.25%	22.86%	23.81%	22.22%	26.28%

Table 4 The Improvement Details of the Five Components of Employability

Table 4 shows that the mean scores for teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills have significantly increased across all measured areas compared to the pre-intervention results, indicating the positive impact of the intervention on these critical aspects of personal development.

The most significant improvement was observed in teamwork skills, with an impressive increase of 31.25%. This suggests that the training course had a noticeable impact on the participants' skills to collaborate effectively in team settings, significantly improving their cooperative spirit and teamwork skills. Interpersonal skills also saw a substantial improvement of 26.28%, indicating that participants became more confident and effective in establishing and maintaining meaningful interpersonal connections.

Problem-solving skills and communication and coordination skills improved by 22.86% and 23.81%, respectively, demonstrating that participants improved their analytical and problem-solving skills when facing complex issues, as well as their capacity to communicate and convey information to others. Leadership skills showed an improvement of 22.22%, reflecting significant progress in participants' skills to guide teams, make decisions, and lead others.

In conclusion, this intervention markedly improved participants' teamwork skills, problem-solving skills, communication and coordination skills, leadership, and interpersonal skills. These results indicate that participating in the employability training course significantly improves employability.

3.2.4.2 Result of the feedback

The feedback from 100 students graduating in 2024 from Liuzhou Vocational and Technical College who participated in the pilot training course aimed at improving employability provided rich insights. It highlighted the strengths and areas for improvement of the training program, as well as its overall impact on their job market readiness. The qualitative feedback complemented the quantitative ratings, offering a more detailed view of the students' experiences.

1. Training Course Evaluation - Summary of Quantitative Feedback

The majority of students agreed or strongly agreed that the curriculum effectively improved their employability, indicating a successful achievement of the training course's primary educational objectives as shown in Table 5.

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The employability Training Course effectively improved my job market readiness.	0	0	0	33	47
2. The training course helped me develop critical employability (e.g., communication, teamwork skills).	0	0	0	26	54
3. The course improved my understanding of teamwork skills, problem-solving, communication, leadership, and interpersonal skills.	0	0	0	26	54
4. The teaching materials provided practical knowledge applicable to real-world job scenarios.	0	0	0	25	55
5. The course's interactive activities improved my learning experience.	0	0	0	0	100

Table 5 Summary of Quantitative Feedback

Table 5 shows the positive feedback from students on the improving college Students' employability Training Course, indicating that the course has been highly successful in achieving its primary educational objectives. Students overwhelmingly agreed that the course effectively improved their job readiness, further validating the course's excellence in improving employability among college students.

The emphasis on key employability, such as communication andteamwork skills, along with the practical application of teaching materials, was highly praised. This

feedback indicates that the course not only met but exceeded students' expectations in providing practical career skills and knowledge.

Furthermore, students strongly recognized the course's impact on improving their teamwork skills, problem-solving skills, communication and coordination skills, leadership, and interpersonal skills. These skills are crucial in today's highly competitive job market, and the course's focus and reinforcement in these areas have made students more confident and capable of handling future workplace challenges.

Notably, students' positive evaluation of the interactive activities in the course highlights their significant role in improving the learning experience. All respondents strongly agreed that the interactive activities contributed to their learning, indicating that these activities were essential in increasing the course's appeal and immersion. Interactive learning methods likely helped students gain a deeper understanding of the course content, enabling them to apply theoretical knowledge more effectively in practice.

Notably, students' positive evaluation of the interactive activities in the course highlights their significant role in improving the learning experience. All respondents strongly agreed that the interactive activities contributed to their learning, indicating that these activities were essential in increasing the course's appeal and immersion. Interactive learning methods likely helped students gain a deeper understanding of the course content, enabling them to apply theoretical knowledge more effectively in practice.

In conclusion, the improving college Students' employability Training Course received overwhelmingly positive feedback, demonstrating its considerable success in enriching students' professional skills and knowledge. Through interactive learning and practical application, the course clearly provided students with a comprehensive and impactful learning experience, affirming its value as an educational tool for improving employability.

2. Open-ended Questions - Summary of Qualitative Feedback

Valuable Aspects: Students found the hands-on, project-based approach to be particularly beneficial. One student remarked, *"Participating in practical projects gave me the chance to apply what I've learned in real-world contexts, which was crucial for understanding how these skills are applied in a professional environment."* The collaborative nature of the course was also highlighted, with students appreciating the chance to work in teams and develop interpersonal skills.

Areas Not Adequately Covered: Several students felt that the course did not cover enough on how to adapt these skills to different industries. As one student pointed out, *"The projects were great, but they were very focused on one or two fields. It would have been helpful to see how these skills translate across different sectors."* There was also feedback indicating that more guidance on how to present these skills to potential employers during the job application process would have been beneficial.

Suggestions for Improvement: A common suggestion was to incorporate more case studies from a variety of industries. One student suggested, *"Including case studies from different fields would give us a better understanding of how these skills are applied in various professional contexts."* Additionally, extending the course duration from the initial timeframe was recommended, as students felt that *"having more time would allow for a deeper dive into each project and skillset."*

Effective Teaching Methods or Resources: The integration of real-time feedback from instructors and industry professionals was highly appreciated. *"Receiving immediate feedback helped me improve my work on the spot and understand where I needed to focus more,"* noted one student. The use of project management tools and platforms was also well-received, with students mentioning that these resources *"provided a clear structure and made collaboration easier."*

Additional Comments: Overall, students were satisfied with the course but emphasized the need for continual updates to keep the content aligned with evolving industry standards. They suggested, *"Regular updates to the projects and course*

material to reflect the latest trends and technologies would keep the course relevant and even more useful."

After extensive consultation with subject matter experts and careful analysis of the try-out results of the developed Training course, we have successfully refined the training course's content and optimized the allocation of teaching hours to improve its effectiveness in improving Liuzhou Vocational and Technical College students' employability. The revisions were focused on improving the training course's effectiveness among the students. Changes were made in several key areas shown in Table 6:

No.	Original Version	Revision
1	Topic 1: 1.1 Basic Principles of teamwork skills 1.2 Team Roles and Responsibility Allocation 1.3 Project：Online Snail Noodle Entrepreneurship Competition	Topic 1: 1.1 Basic Principles of Teamwork 1.2 Team Roles and Responsibility Allocation 1.3 Techniques for Enhancing Team Collaboration 1.4 Project：Online Snail Noodle Entrepreneurship Competition
2	Topic 2: 2.1 Basic Steps in Problem Solving 2.2 Project："Smart City" Innovation Challenge	Topic 2: 2.1 Basic Steps in Problem Solving 2.2 Creative Thinking and Problem Solving 2.3 Project："Smart City" Innovation Challenge
3	Topic3: 3.1 Basic Principles and Techniques of Communication 3.2 Project："Cross-departmental Project Collaboration" Communication Exercise	Topic3: 3.1 Basic Principles and Techniques of Communication 3.2 Coordination and Negotiation Skills 3.3 Project："Cross-departmental Project Collaboration" Communication Exercise

4	Topic5: 1. The Importance of Interpersonal Relationships 2. Techniques for Building and Maintaining Interpersonal Relationships 3.Project："Cross-cultural Communication" Simulation Practice	5.1 The Importance of Interpersonal Relationships 5.2 Techniques for Building and Maintaining Interpersonal Relationships 5.3 Conflict Management and Resolution 5.4Project："Cross-cultural Communication" Simulation Practice
5	Teaching Hours: 4 hours per week, totaling 20 hours in 5 weeks.	Teaching Hours: 4 hours per week, totaling 36 hours in 9 weeks.

Table 6 Revision after Developed training course Try-out

Course Adjustments Based on Feedback: In response to the feedback, the course will be extended from its initial duration to a total of 9 weeks, with 4 hours per week, increasing the overall course length to36 hours. This will allow for a more comprehensive exploration of each project. Additionally, case studies from multiple industries will be introduced to broaden the scope of learning and application. These adjustments aim to improve the course's relevance, depth, and practical application, better aligning it with student needs and industry demands.

3.3 Phase III Implementation

Researchers applied the designed training course to the target group of the study and used the Action Research method to examine the effectiveness of this training course. The specific steps are as follows:

3.3.1 Implement Training Course

Based on the research findings from the experimental phase, a training course aimed at improving college students' employability was implemented using a project-based teaching approach. This approach was integrated with social cognitive theory, constructivist learning theory, experiential learning theory, and situated learning theory.

The course aims to improve students' employbility. The following steps outline the implementation process:

1. Training Course Objectives Implementation

The training course is designed to focus on developing essential skills for improving employability through practical, project-based learning. The primary objectives are:

Enhance Teamwork Skills: Improve students' skills to work collaboratively and effectively in teams through structured group projects.

Strengthen Problem-Solving Skills: Train students to address and resolve real-world problems using critical thinking and innovative solutions in project scenarios.

Advance Communication and Coordination Skills: Develop students' skills to effectively communicate and coordinate within teams and across different stakeholders through project-based interactions.

Cultivate Leadership Skills: Build leadership capabilities by assigning leadership roles and responsibilities within projects, allowing students to practice and refine their leadership qualities.

Improve Interpersonal Skills: Foster strong interpersonal skills through collaborative projects and team interactions, supporting students in building and maintaining positive professional relationships.

These objectives will be integrated throughout the course design and implementation, ensuring that students can effectively apply their knowledge in real-world contexts and improve their employability.

2. Practical Project Integration

Team-Based Projects: Design and implement projects that require students to work in diverse teams, tackling complex tasks that simulate real-world job environments. Projects should be structured to challenge and develop teamwork abilities.

Real-World Problem Scenarios: Use case studies and simulations that present real-world problems, encouraging students to apply problem-solving techniques and think critically to find effective solutions.

3. Content Selection and Presentation

Project-Relevant Content: Select and develop content that directly supports the skills being targeted. For example, include modules on conflict resolution, effective communication strategies, and leadership principles.

Realistic Formats: Present content through formats that mimic professional tasks, such as team reports, project presentations, and collaborative decision-making processes.

4. Teaching Methodology Application

Project-Based Learning: Employ project-based learning as the core methodology, where students engage in practical projects that require the application of teamwork, problem-solving, communication, leadership, and interpersonal skills.

Interactive Teaching Methods: Incorporate methods such as role-playing, simulations, and team-building exercises to actively engage students and provide hands-on experience in skill development.

5. Providing Practical Support

Mentorship and Guidance: Provide access to mentors or industry experts who can offer advice, support, and feedback throughout the project, helping students navigate challenges and enhance their learning experience.

Skill-Building Workshops: Offer workshops that focus on specific skills necessary for project success, such as effective communication techniques, leadership strategies, and problem-solving frameworks.

6. Facilitating Real-World Application

Fieldwork and Site Visits: Organize visits to organizations or industries related to the projects, allowing students to observe and interact with professionals, gaining insights into real-world practices and expectations.

Community and Industry Interaction: Facilitate interactions with community members or industry stakeholders to provide students with practical experience in managing professional relationships and understanding industry needs.

7. Assessment and Feedback

Ongoing Assessment: Implement continuous assessment strategies to evaluate students' performance throughout the project, focusing on teamwork, problem-solving, communication, leadership, and interpersonal skills.

Reflective Feedback: Use reflective journals and feedback sessions to help students review their experiences, identify strengths and areas for improvement, and develop strategies for ongoing skill enhancement.

8. Course Implementation and Adaptation

Pilot Course: Begin with a pilot course to test the effectiveness of the projects and teaching methods, making adjustments based on student feedback and learning outcomes.

Iterative Scaling: Gradually expand the course to include more students and projects, adapting the content and methods to align with student needs and industry trends.

9. Course Conclusion and Ongoing Support

Final Presentations: Conclude the course with a final presentation event where students showcase their project outcomes and receive feedback from peers, instructors, and industry professionals.

Career Development Support: Offer ongoing career guidance and support, helping students leverage their project experiences and skills in job applications and career advancement through alumni networks and mentorship opportunities.

This training course is designed to comprehensively improve students' employability by integrating practical projects that develop teamwork, problem-solving, communication, leadership, and interpersonal skills.

3.3.2 Evaluate Effectiveness of the Developed Training Course

To evaluate the effectiveness of training course for improving the employability of Liuzhou Vocational and Technical College students, Project Presentation and pre and post-test of the employability were used in this phase.

Pre and post test

Population and Sampling

The study targets the graduating students of Liuzhou Vocational and Technical College in 2024, with a sample size of 100 students from the 2024 graduating cohort.

Sampling Design

According to Taro Yamane's formula (1967), the total number of 2024 graduates from Liuzhou Vocational and Technical College is 2,030. Therefore, the sample size should be no less than 95. In this study, we used purposive sampling to select 100 graduates from seven different departments.

Instument

A pre-test and post-test were conducted on the 100 graduates to assess their employability before and after the training course. The assessment utilized a combination of TRI by Meredith Belbin, PSI by Donald A. Neudecker, CCQ by James

C. McCroskey, LPI by James M. Kouzes and Barry Z. Posner, and SSI by E. William Riggio. The test comprised 25 items to measure five variables: teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills.

Measurement Design

Same as try out.

Data Collection

Before learning the training course, the selected 100 students took pre-test. After learning the curriculum, the 100 students completed the post-test.

Data Analysis

For pre- and post-test, the data analyze as below:

(1) Descriptive Analysis

Calculate the mean, median, and standard deviation of the pre-test and post-test scores.

Determine the range of scores and their distribution.

Paired T-Test

Conduct a paired t-test to compare the mean scores of the pre-test and post-test.

Determine whether the change in scores is statistically significant.

Effect Size Calculation

Calculate the effect size to quantify the magnitude of the difference between pre-test and post-test scores.

Individual Student Analysis

Analyze the performance of each individual student.

Identify students who showed significant improvement and those who did not.

Learning Gains

Calculate the learning gains for each student using the formula: (Post-test score - Pre-test score) / Maximum possible score.

Correlation Analysis

Analyze whether there is a correlation between students' pre-test scores and their post-test performance.

Project Presentation

Instument

For the project presentation evaluation, each corresponding to the specific projects undertaken by the student groups. These rubrics were designed to measure critical skills such as teamwork skills, problem-solving skills, Communication and coordination skills, leadership skills, and interpersonal skills. Each rubric included detailed criteria and a five-point rating scale to ensure consistent and objective evaluations.

Measurement Design

The measurement design for the project presentations involved 4 key steps:

Development of Assessment Rubrics

Each project had a corresponding assessment rubric, customized to evaluate the specific objectives and skill sets required. These rubrics were designed to capture the nuances of each project and provide a comprehensive evaluation framework.

Observation Planning

A detailed plan was created to guide the evaluation process. This included defining the observation objectives, identifying the key skills to be assessed, and outlining the procedures for scoring and feedback.

Involvement of External Experts

To improve the credibility and relevance of the evaluations, 5 HR professionals from the industry were invited to participate as external evaluators. Their expertise provided valuable insights.

Expert 1: Yang Lin, Human Resources Manager with 26 years of recruitment experience, currently employed at Liuzhou OWM Machinery Co., Ltd.

Expert 2: Ke Si, Human Resources Director with 20 years of HR experience, currently employed at Liuzhou Bailian Airport.

Expert 3: Tan Yinlan, Human Resources Supervisor with 20 years of HR experience, currently employed at Baidu Baijie Technology Co., Ltd.

Expert 4: Lu Xin, Human Resources Supervisor with 15 years of HR experience, currently employed at Liujiang Renjia Luosifen Co., Ltd.

Expert 5: Li Si, Human Resources Director with 25 years of HR experience, currently employed at Guangxi Liugong Group Co., Ltd.

Validation of the Rubrics

Check the Validity of the Rubrics with experts. The 5 experts including 1 research and evaluation experts, 1 educational psychology expert, 2 employment guidance expert, and 1 curriculum development expert. Details as follow:

Expert 1: Tan Xin, Professor, with 26 years of teaching experience, working at Liuzhou Vocational and Technical College, expert in research and evaluation.

Expert 2: Zuo Nihong, Professor, Ph.D., with 24 years of teaching experience, working at Liuzhou Vocational and Technical College, expert in curriculum development expert.

Expert 3: Dong Luying, Professor, a psychology teacher, with 25 years of teaching experience, employed at Liuzhou Vocational and Technical College, expert in Educational Psychology.

Expert 4: Xu Ming, Professor, with 24 years of career counseling experience, working at Liuzhou Vocational and Technical College , expert in Employment Guidance.

Expert 5: Zeng Zhi, Associate Professor, with 18 years of career counseling experience, employed at Liuzhou Vocational and Technical College , expert in Employment Guidance.

Analyze the validity of the instrument

Analyze the validity of the tools using the consistency index (IOC). Compare with the standard range of 0.50 to 1.00, which indicates the effectiveness of the tools. The consistency index for the five project evaluations was between 0.8 and 1.0, demonstrating high reliability and validity of the assessment instruments used. The specific details of the evaluation results are shown in the appendix.

Improve and revise the instrument

Improve and revise the test according to experts' feedback and recommendations.

Data Collection

Data collection involved the systematic gathering of scores using the assessment rubrics during the project presentations. Each evaluator, including the 5 invited HR professionals, used the rubrics to assess the performance of the 10 student groups, ensuring that all relevant skills were accurately captured and recorded.

Data Analysis

The data analysis phase focused on evaluating the scores collected from the rubrics. Statistical methods were used to analyze the data, providing insights into the overall performance across different skill areas. The analysis also included a comparative review of the ratings provided by the HR professionals, offering an external perspective on the students' employability and readiness for professional challenges.

CHAPTER IV

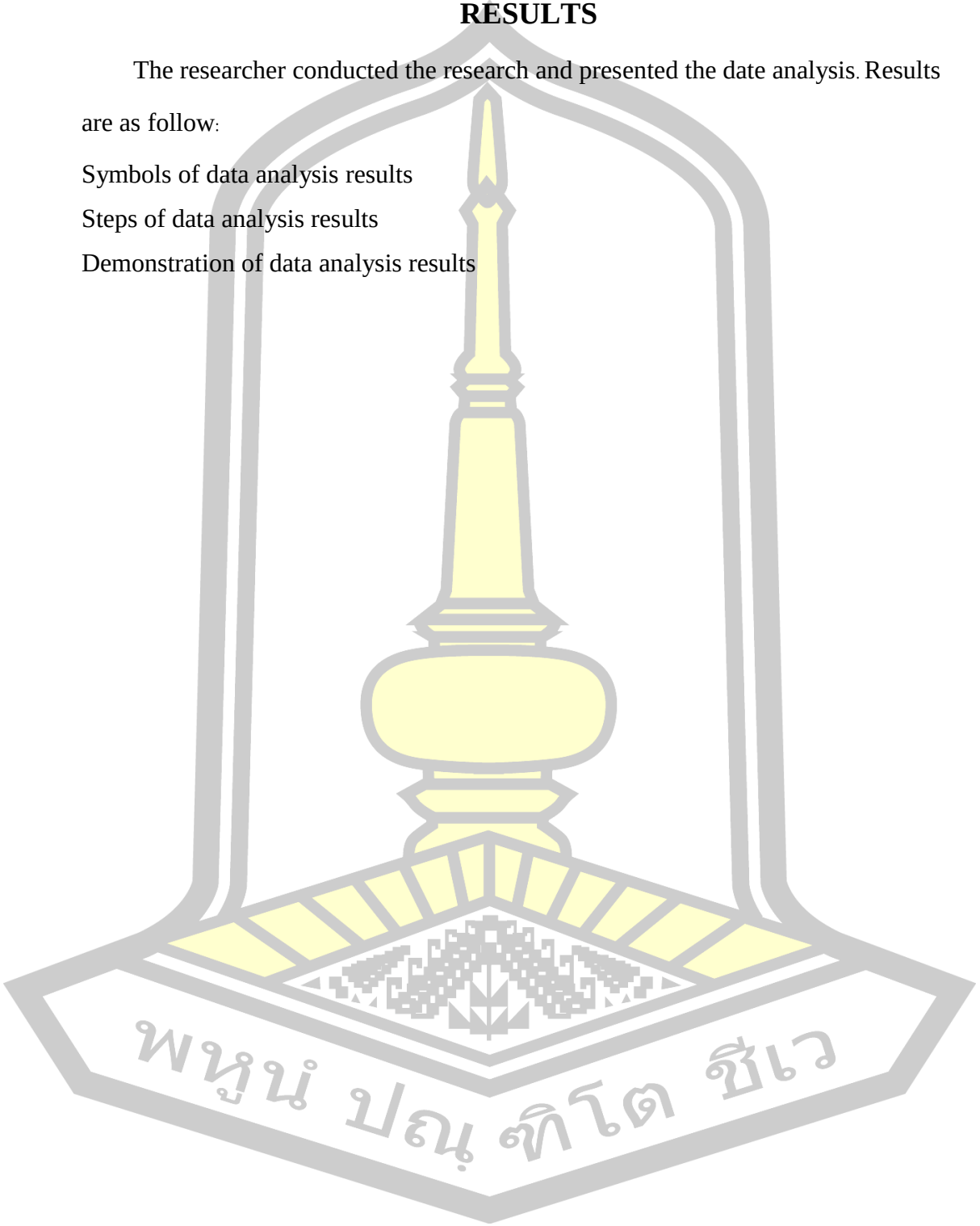
RESULTS

The researcher conducted the research and presented the date analysis. Results are as follow:

Symbols of data analysis results

Steps of data analysis results

Demonstration of data analysis results



4.1 Symbols of Data Analysis Results

Research to develop training course for College Students to Improve employability in Liuzhou China.Researchers use symbols in the data analysis below:

M stands for the average score of the sample

N stands for the number of sample

Std. stands for the sample standard deviation

w stands for Shapiro-Wilk statistic

Sig. stands for the prob skills of statistical significance

t stands for test statistic

df stands for degrees of freedom

4.2 Steps in Presenting Data Analysis Results

Training course developed to improve employability of students in Liuzhou Vocational and Technical College, is the result of a comprehensive research and development (R&D) process that unfolds in three phases, with the data analyzed in the following sequence of steps:

Phase I: Contextual Study

The results of an investigation into fundamental data and information for developing a training course aimed at improving college students' employability.

1. Results of theories, concepts, and principles related to the training course and employability, as well as the existing training college students' employability course textbooks.

2. Results of questionnaires the employability status of Liuzhou vocational and technical college students with Graduates of the Class of 2023 and Class of 2024, and companies recruiting from Liuzhou Vocational and Technical College.

3. Results of Semi-structure interview with companies recruiting from Liuzhou Vocational and Technical College.

Phase II: Construction

The results of developing a training course aimed at improving the employability of Liuzhou Vocational and Technical College graduates based on the training course.

1. Results of questionnaires course implementation.

2. Results of the improvement in employability of students from Liuzhou vocational and technical college before and after implementing the training course.

Phase III: Implementation

Evaluation results of employability for students from Liuzhou vocational and technical college after developing training course.

1. Results of Project Presentations during course implementation.

2. Results of the improvement in employability of students from Liuzhou vocational and technical college before and after implementing the training course.

4.3 Data Analysis Results

4.3.1 Phase I Contextual Study

In this phase, the results of fundamental data in developing a training course to improve college students' employability presented.

4.3.1.1 Results of theories, concepts and principles related to training course and employability, as well as the existing to training college students' employability course textbooks.

1. Theories, concepts and principles related to training course

The researcher conducted a comprehensive analysis of training course from 2000 to 2024.This involved a meticulous search for relevant studies across multiple databases and information repositories, including CNKI Scholar, ProQuest, ERIC, Google

Scholar, and libraries with collections on China and international resources. A total of 59 topics, including research papers or dissertations. The selection process focused on identifying studies pertinent to the Training Course to gather a broad spectrum of insights and perspectives on its development, implementation, and impact. The details shown in Figure 11.

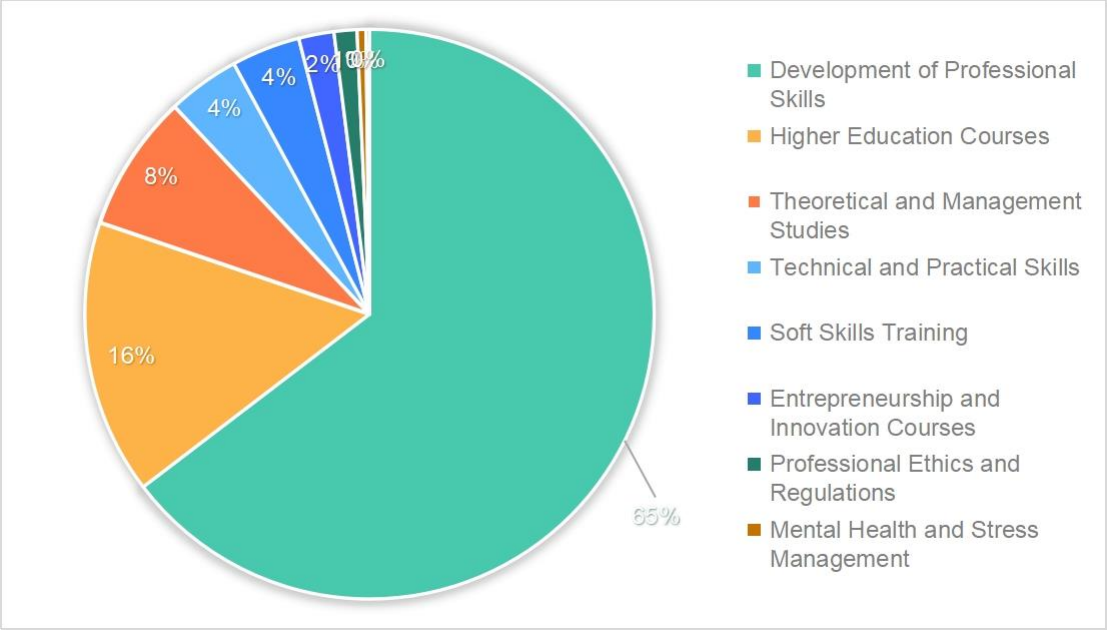


Figure 11 The fuzzy distribution of training course

Figure 11 shows the distribution of disciplines in training course. The vast majority, 65%, are dedicated to the development of professional skills. Higher education course account for 16% of the training course, while theoretical and management course make up 8%. The remaining five disciplines collectively account for 11% of the total course.

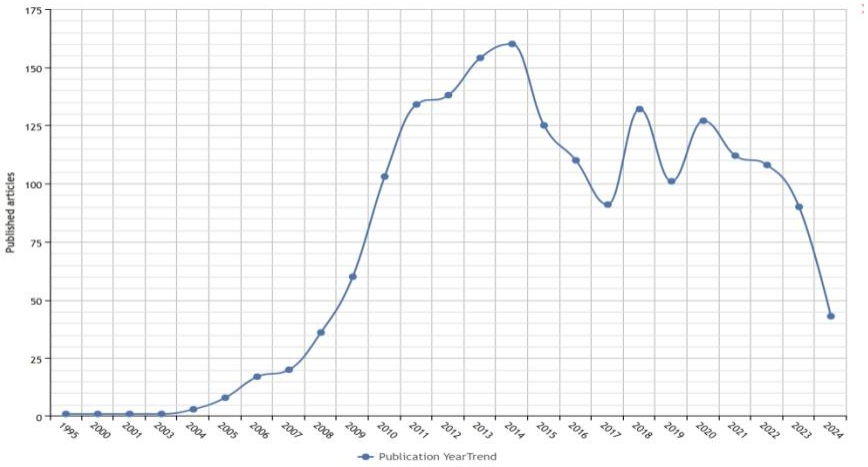


Figure 12 Pubilication Year Distribution of training course aimed at improving college students' employability

In 2019, China launched the "National Vocational Education Reform Implementation Plan," which stipulates in Article 16 that course on professional skills development and comprehensive quality Improvement are compulsory for higher vocational education. Subsequently, the Ministry of Education issued the "Quality Standards for Higher Vocational Education (Trial)" document in 2021, further emphasizing the inclusion of professional skills and comprehensive quality Improvement in vocational Training course. These guidelines highlight the transition of training course aimed at improving employability from basic skills training to a core component of higher vocational education in China. These course not only impart professional skills but also play a significant role in the development of vocational education in China. This shift towards a more professional, systematic, and scientific approach in teaching vocational students has become evident. As a result, research on training course aimed at improving employability has seen significant growth, culminating in a notable peak in 2015 (Figure 12), reflecting the increasing academic and strategic importance of these course.

Teaching Methods	Representatives
Real-world project-based career training	Thomas (2000)
Scaffolding in PBL for professional skills	Krajcik and Blumenfeld (2006)
Experiential learning for practical employability	Kolb and Kolb (2005)
Blended learning for flexible, real-world skills	Garrison and Kanuka (2004)
Hands-on PBL in modular teaching	Mills and Treagust (2003)

Table 7 Research on Teaching Methods for training course

Table7 shows the esearch on teaching methods in training course aimed at improving college students' employment competence, revealing a range of innovative approaches designed to optimize course delivery and effectiveness. These studies, from theoretical exploration to practical application, emphasize the dynamic evolution of teaching strategies to improve college students' employability.

Thomas (2000) laid the groundwork for understanding project-based learning by defining it as a comprehensive approach to teaching where students engage in real-world and meaningful projects. He emphasized that PBL fosters critical thinking, problem-solving, and collaboration, which are essential skills for employability. Although his work dates back more than 20 years, its influence persists in contemporary studies, establishing the foundation for project-based approaches in training models.

Krajcik and Blumenfeld (2006) focused on the role of scaffolding in PBL environments. They argued that effective scaffolding, which provides structure and support as students engage in complex projects, is a crucial element of a successful teaching model. Their research highlighted the importance of gradually removing support as students become more competent, thus fostering independence and self-directed learning—key attributes for employability.

Kolb and Kolb (2005) discussed the experiential learning model, which emphasizes learning through experience and reflection. According to their research, experiential learning is highly effective in training course as it allows students to apply theoretical knowledge in practical situations. This model encourages active engagement, where learners participate in hands-on activities and reflect on their experiences, thereby deepening their understanding and improving their employability.

Garrison and Kanuka (2004) explored the blended learning model, which integrates traditional face-to-face instruction with online learning components. Their research highlighted that blended learning provides flexibility and improves the learning experience by allowing students to access course materials and collaborate with peers at their own pace. They argued that this model is particularly effective in catering to diverse learning styles and needs, making it a valuable approach in training course aimed at improving employability.

Mills and Treagust (2003) expanded on the concept of PBL by examining its application in engineering education. They argued that project-based learning is particularly effective in fields requiring hands-on experience and practical application of theoretical knowledge. Their research showed that PBL not only improves technical skills but also improves students' skills to work in teams, communicate effectively, and manage projects—skills highly valued by employers.

In summary, the exploration of various teaching methods for improving college students' employability highlights a significant shift towards more interactive, student-centered, and technologically integrated approaches. These methods aim to better engage students, address their individual learning needs, and improve their practical skills and problem-solving skills, albeit with considerations for the challenges and adaptations required for effective implementation.

2. Theories, concepts and principles related to employability

Numerous studies have been conducted on employability, with a total of 127 researches identified between the years 2000 and 2024.

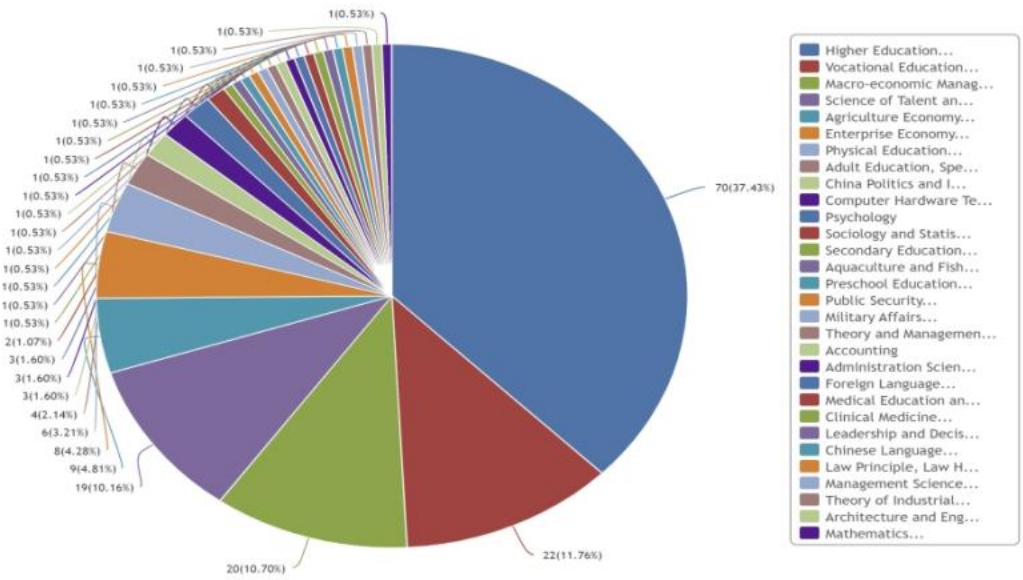


Figure 13 Distribution of Employability

The field of higher education emerged as the predominant discipline in this body of research, followed closely by studies within the domains of vocational education shown in Figure 13.

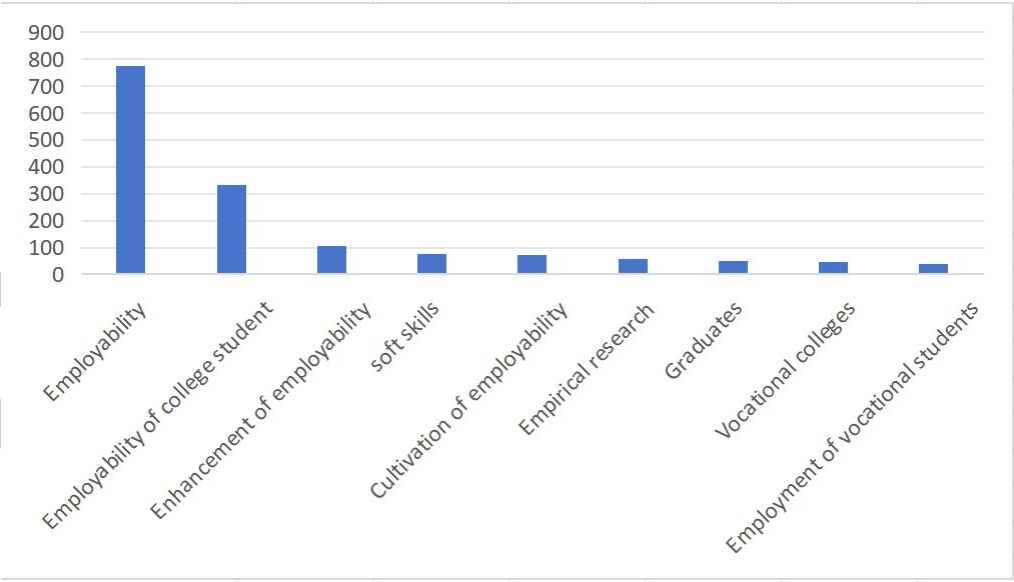


Figure 14 Research status on the topic of employability

Figure 14 illustrates the current state of research on the topic of employability, covering a wide range of subtopics and areas of focus, highlighting the complexity and

multifaceted nature of this field. Between 2000 and 2024, the term "employability" appeared in 777 studies, ranking first, followed by "college students' employability" with 331 studies, reflecting the importance and focus on college students' competitiveness in the job market. Research on "employability Improvement" and "soft skill" seach contributed 185 studies, indicating a pressing need to improve individuals' competitiveness in the employment market. "employability cultivation" and "empirical research" are also significant themes, with 73 and 56 studies respectively, underscoring the academic community's emphasis on cultivating employability and conducting empirical analysis. Other important research areas include "graduates," "student career development" each providing valuable insights into the dynamics of entering the job market and personal adjustment in various contexts. Additionally, themes like "graduate employability" and "career development paths" reveal strategies to effectively address job market challenges and Improve employability in educational settings, reflecting a broad range of research interests. Although there are fewer studies on "labor market integration," "career communication and coordination skills," "soft skills," and "employment intelligence," they are equally crucial, further showcasing the diverse dimensions of employability research, including theoretical and empirical discussions on how individuals and institutions can Improve job readiness and achieve career success.

The existing textbooks on "College Students' employability"

This research investigated a total of 8 commonly used textbooks that have been published in China since 2012. The details are summarized in the Table 8.

Textbook Cover	Author	Publisher	Year of Published

	Zhang Guowei	China Financial Publishing House	2012
	Kang Tinghu	Science Press	2014
	Chen Wei	Tsinghua college Press	2018
	Li Junqi Xiong Chunyan Wen Junhui	Tsinghua college Press	2021
	Cai Qing	China Population Publishing House	2022

	Liao Hongwen	Sichuan college Press	2023
	Zhang Shenglin	Machinery Industry Press	2023
	Zhong Xiaoyao	Hefei college Press	2023

Table 8 The existing textbooks on "College Students' employability." from 2012 to Present

The author comprehensively considered the five factors of the authority of the textbook publisher, the circulation of the textbook, the publication time of the textbook, and the commonality between the textbooks, and selected the following five most representative textbooks (shown in Table 9) from the existing textbooks to analyze their content selection.

Textbook Name	Author	Publisher	Year of Published
Practical Training Course on College Students' employability	Zhang Guowei	China Financial Publishing House	2012
Theoretical and Assessment of	Chen Wei	Tsinghua college Press	2018

College Students' employability			
Training in Professional Qualities and employability	Li Junqi Xiong Chunyan Wen Junhui	Tsinghua college Press	2021
Research on improving employability of college Students	Liao Hongwen	Sichuan college Press	2023
Tutorial on Improving employability of College Graduates	Zhong Xiaoyao	Hefei college Press	2023

Table 9 Introduction to selected textbooks

The textbook "Practical Training Course on College Students' employability," edited by Zhang Guowei, aims to systematically Improve college students' employability. This textbook selectively and objectively introduces the theoretical foundations, practical skills, and market demands related to employment. The design of the textbook is based on students' learning interests and is organized around their actual needs during the job-seeking process, providing a relatively comprehensive introduction to knowledge related to employability."Practical Training Course on College Students' employability" reflects the teaching process of "preparation before learning, practice during learning, and reflection after learning." The textbook includes various inspiring, activity-based, and task-oriented exercises, emphasizing interaction between teachers and students, and striving to achieve an organic combination of improving employability and developing overall competencies. This course focuses on the cultivation of employability.

The textbook "Theoretical Framework and Evaluation of College Students' employability," edited by Chen Wei, aims to comprehensively Improve college students' employability. This book covers important topics such as teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills, with the goal of helping students develop essential skills for the job market.The book systematically introduces the theoretical foundations and practical applications of these skills, with content designed to fully consider the actual needs of students in the employment market. It is suitable for students from various academic disciplines, especially those in vocational and undergraduate programs who wish to improve their employability. Additionally, it is also applicable to college educators and vocational training institutions to better guide students in their career development and skills Improvement.

The textbook "Research on improving employability of college Students," edited by Liao Hongwen, has been published four times so far, in 2010, 2015, 2019, and 2023 (referred to as the Liao edition). In the third edition published in 2019, the author updated and revised some content based on recent changes in the college employment market, and made various supplementary adjustments in the following years. This textbook is specifically designed for college students, aiming to Improve their employability and professional skills, making it particularly suitable for current students and graduates looking to improve their job competitiveness. The writing process has three notable characteristics: systematic, comprehensive, and concise and easy to understand. This study has selected the fourth edition of this textbook.

The textbook "Tutorial on Improving employability of College Graduates," edited by Zhong Xiaoyao, addresses the shortcomings faced by college graduates in job seeking and employment. It focuses closely on the practical issues of career development and entrepreneurship for college students, aiming to Improve students' employment awareness, shift their employment attitudes, promote proactive job-seeking actions, and improve their employability. This textbook mainly includes topics

such as employment trends and career theories, mindset adjustment and execution improvement, exploring job search directions, employment information and job-seeking pitfalls, crafting resumes, cover letters and written communication, individual interview skills and expression Improvement, group interviews and structured interviews, leadership and workplace etiquette, and corporate visit education. The content design of this textbook emphasizes guiding students to explore career directions and Improve employability through interactive learning.

"college Student employability Training Course" covers key topics such as team roles and effective communication, conflict management and solutions, problem identification and analysis methods, innovative thinking and solution implementation, oral and written communication and coordination skills, listening and feedback skills, leadership styles and team management, motivation and guidance skills, basic principles of interpersonal skills, professional network building skills, professional ethics and etiquette, and practical training for employability Improvement."college Student employability Theory and Evaluation "focuses on the theoretical foundation of employability, employability models and indicator systems, career interest and skills assessment, job market analysis and trends, workplace adaptation and development, and employment challenges and opportunities in a global context."Professional Quality and employability Training" includes topics such as professional ethics and qualities, time management and self-planning, teamwork skills and leadership, communication and coordination skills and conflict resolution, innovative thinking and problem solving, job stress management, workplace etiquette and image management, career development and promotion strategies, cross-cultural communication and coordination skills, and networking and digital skills."Research on improving college Students' employability" covers topics such as the theory and practice of employability, analysis of the current employment situation of college graduates, matching job market demands with college education, employment guidance and service system construction, career planning and counseling, employability assessment and measurement, college-companies cooperation and internship practice, employability cultivation in an

international context, innovation and entrepreneurship education and employment, and tracking and feedback on the employment quality of college graduates. "Tutorial on improving college Graduates' employability" includes sections on overview of employability competence, career planning and development, job market analysis, job search skills and strategies, workplace adaptation and growth, leadership and team management, communication and interpersonal skills, innovative thinking and solutions, workplace etiquette and professional qualities, and future employment trends and challenges. The above content shown in Table 10:

Practical Training Course on College Students' employability	Theories and Assessment of College Students' employability	Training in Professional Qualities and employability	Research on improving employability of college Students	Tutorial on Improving employability of College Graduates
Team roles and effective communication	Theoretical foundation of employability	Professional ethics and qualities	The theory and practice of employability	Overview of Employment Competence
Conflict management and solutions	employability models and indicator systems	Time management and self-planning	Analysis of the current employment situation of college graduates	Career planning and development
Problem identification and analysis methods	Career interest and skills assessment	Teamwork and leadership	Matching job market demands with	Job market analysis

			college education	
Innovative thinking and solution implementation	Job market analysis and trends	communication and coordination skills and conflict resolution	Employment guidance and service system construction	Job search skills and strategies
Oral and written communication and coordination skills	Workplace adaptation and development	Innovative thinking and problem solving	Career planning and counseling	Workplace adaptation and growth
Listening and feedback skills	Employment challenges and opportunities in a global context	Job stress management	Employability assessment and measurement	Leadership and team management
Leadership styles and team management	/	Workplace etiquette and image management	College-companies cooperation and internship practice	Communication and interpersonal skills
Motivation and guidance skills	/	Career development and promotion strategies	Employability cultivation in an international context	Innovative thinking and solutions

Basic principles of interpersonal skills	/	Cross-cultural communication and coordination skills	Innovation and entrepreneurship education and employment	Workplace etiquette and professional qualities
Professional network building skills	/	Networking and digital skills	Tracking and feedback on the employment quality of college graduates	Future employment trends and challenges
Professional ethics and etiquette	/	/	/	/
Practical training for employability Improvement	/	/	/	/

Table 10 Selected content from five "College Students' employability" textbooks

By sorting the lists in Table 10, the author selected five themes from these five textbooks to develop training course aimed at improving college students' employability: teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills. This indicates that the editors of the five textbooks consider these topics essential for improving the employability of college students.

In conclusion, the textbooks under review are deemed suitable for undergraduate students due to their comprehensive theoretical coverage and academic depth. However, they fall short of meeting the needs of students in vocational colleges. The primary reason for this discrepancy lies in the textbooks' heavy theoretical focus, which lacks

the practical, hands-on approach that vocational training emphasizes. Therefore, while these textbooks serve as valuable resources for undergraduate students seeking theoretical knowledge, they do not adequately cater to the practical learning needs of vocational college students.

4.3.1.2 Research Findings on the Employment Competence of Graduates from Liuzhou Vocational and Technical College

Data was collected through a questionnaire on the employment competence of graduates from Liuzhou Vocational and Technical College. The questionnaire utilized 26 items from the "College Students' employability Scale" designed by Wang Feng and others.

Since this research used Sojump online, it is impossible to count the number of questionnaires distributed to Graduates from Liuzhou Vocational and Technical College. However, under the settings of Questionnaire Star software, questionnaire collection will stop after 510 questionnaires are recovered. Since the Questionnaire Star software can set the questions, questions set as required questions cannot be submitted if there is no answer, so there are no questionnaires with missing answers or incomplete answers. After collecting all the questionnaires, the author checked each questionnaire to eliminate random answers by the respondents. Therefore, the effective recovery rate of the Questionnaire Star questionnaire was 100%.

According to the survey, the current employability of both recent graduates and alumni of Liuzhou Vocational and Technical College, as well as the evaluation of employability of vocational college students by recruiting organizations, can be found in table 11, table 12, table 13 and table 14.

The basic information of the questionnaire participant is shown in Table 11:

	Survey content indicators	Number of students	Ratio percentage
Gender	Male	196	39.2

	Female	304	60.8
School	School of Mechanical and Electrical Engineering	96	19.2
	School of Automotive Engineering	78	15.6
	School of Trade and Tourism Management	54	10.8
	School of Art	56	11.2
	School of Electronic Information Engineering	76	15.2
	School of Environment and Food Engineering	71	14.2
	School of Finance and Logistics Management	69	13.8
Source of students	Recent Graduates	300	60
	Previous Graduates	200	40

Table 11 Basic Information of Employment Competence of Graduates from Liuzhou Vocational and Technical Collegel Status Questionnaire Participants

The sample reflects the overall employability of graduates from Liuzhou Vocational and Technical College. In the survey, the number of girls exceeds that of boys by 21.6%, which may be related to the increasing participation of females in vocational education in recent years. Additionally, the questionnaires from the seven colleges of Liuzhou Vocational and Technical College are evenly distributed between 10% and 20%, ensuring a wide and balanced data coverage and thus the representativeness of the results. Among the sample, 40% are graduates, while 60% are current-year graduates. This proportion highlights a focus on the latest employability status, particularly the employment challenges faced by recent graduates.

According to the questionnaire, the current employbility of graduates from Liuzhou Vocational and Technical College are shown in Table 12 and Table 13.

Level	Percentage					Average Score
	5	4	3	2	1	
Personal character traits	253	30	10	5	2	4.76
Employment personality traits	150	70	40	25	15	4.03
Career management skills	130	75	50	25	20	4.03
Professional identity	160	60	35	25	20	4.03
Teamwork skills	150	70	40	25	15	4.03
Basic office skills	140	70	45	25	20	4.02
Interpersonal skills	230	35	18	11	6	4.11
Independent working skills	204	49	22	14	11	4.02
Problem-solving skills	145	65	40	30	20	4.05
Execution skills	271	21	4	3	1	4.86
Innovation and Entrepreneurship skills	160	65	40	20	15	4.05
Practical skills	145	65	40	30	20	4.05
Personal management skills	155	66	36	27	16	4.00
Job-hunting skills	160	65	40	20	15	4.05
Adapt skills	164	53	56	16	11	4.14
Learning skills	253	30	10	5	2	4.76
Resource integration and utilization skills	186	58	28	15	13	4.00
Information management skills	249	28	14	6	3	4.72
Comprehension and judgment skills	236	37	15	8	4	4.46
Leadership skills	149	71	39	26	15	4.03
Communication and Coordination	184	56	33	17	10	4.12
Social capital (graduate school, social relations, etc.)	154	67	37	26	16	4.00
Socio-economic factors	188	57	26	15	14	4.01
Academic human capital (academic grades, certificates, etc.)	157	64	34	27	18	4.00
Professional skills	261	23	8	5	3	4.80

Professional knowledge	253	29	11	6	1	4.76

Table 12 Survey on the Employment Competence of Current Graduates from Liuzhou Vocational and Technical College

Analysis of the results in Table 12 reveals that graduates from Liuzhou Vocational and Technical College have recognition scores of 4.00 or above for the importance of all 26 employability, with an average score of 4.23, indicating a relatively high level of awareness. As shown in Figure 4, vocational students believe that the five most important factors in employment are execution skills, professional skills, professional knowledge, learning skills, and personal character traits, with importance scores ranging from 4.76 to 4.86. The differences in importance scores are relatively small. At the lower end of the rankings are communication and coordination skills, teamwork skills, interpersonal skills, problem-solving skills, leadership skills, job-seeking skills, and adapt skills, with scores ranging from 4.03 to 4.13. The three lowest-ranked factors are social capital (graduation institutions, social connections, etc.), educational human capital (academic performance, certifications, etc.), and socioeconomic factors, with scores significantly lower than the previous employability, ranging from 4.00 to 4.01.

Level	Percentage					Average Score
	5	4	3	2	1	
Personal character traits	176	15	6	2	1	4.82
Employment personality traits	158	24	9	5	4	4.57
Career management skills	149	29	9	8	5	4.55
Professional identity	146	30	11	7	6	4.52
Teamwork skills	154	26	10	6	4	4.6
Basic office skills	144	31	12	7	6	4.5
Interpersonal skills	142	32	12	7	7	4.48
Independent working skills	140	33	12	8	7	4.46
Problem-solving skills	139	33	13	7	8	4.44
Execution skills	186	8	6	0	0	4.92

Innovation and Entrepreneurship skills	165	21	9	3	2	4.71
Practical skills	162	22	8	5	3	4.68
Personal management skills	156	25	9	6	4	4.62
Job-hunting skills	159	2	8	7	2	4.65
Adapt skills	167	19	9	3	2	4.73
Learning skills	174	16	6	3	1	4.8
Resource integration and utilization skills	136	35	13	8	8	4.42
Information management skills	173	16	7	2	2	4.78
Comprehension and judgment skills	169	18	8	3	2	4.75
Leadership skills	134	37	12	9	8	4.4
Communication and Coordination	132	39	11	9	9	4.38
Social capital (graduate school, social relations, etc.)	130	41	10	8	11	4.36
Socio-economic factors	128	43	9	9	12	4.34
Academic human capital (academic grades, certificates, etc.)	125	46	8	9	13	4.32
Professional skills	184	10	4	1	1	4.88
Professional knowledge	180	13	5	1	1	4.85

Table 13 Survey on the Employment Competence of Past Graduates from Liuzhou Vocational and Technical College

Table 13 reveals results that the scores of the importance of 26 employability factors given by past graduates range from4.32 to 4.92, with an average of 4.59 for each skill, which is a relatively high level. As can be seen from Figure 5, the top five factors that vocational college past graduates consider most important in employment are execution skills, professional skills, professional knowledge, learning skills, and personal character traits. The scores of their importance do not differ greatly, ranging from 4.78 to 4.92.

Level	Percentage					Average Score
	5	4	3	2	1	
Personal character traits	5	4	1	0	0	4.4
Employment personality traits	7	0	1	1	1	4.1
Career management skills	6	2	0	1	1	4.1
Professional identity	6	1	1	1	1	4
Teamwork skills	8	0	2	0	0	4.6
Basic office skills	7	0	0	2	1	4
Interpersonal skills	8	0	2	0	0	4.6
Independent working skills	6	1	1	1	1	4
Problem-solving skills	8	0	1	1	0	4.5
Execution skills	9	0	1	0	0	4.8
Innovation and Entrepreneurship skills	6	1	1	0	2	3.9
Practical skills	7	0	0	1	2	3.9
Personal management skills	6	1	0	1	2	3.8
Job-hunting skills	7	0	0	0	3	3.8
Adapt skills	8	0	0	1	1	4.3
Learning skills	8	0	0	2	0	4.4
Resource integration and utilization skills	6	1	0	1	2	3.8
Information management skills	7	1	1	1	0	4.4
Comprehension and judgment skills	8	0	0	1	1	4.3
Leadership skills	8	0	1	1	0	4.5
Communication and Coordination	7	1	2	0	0	4.5
Social capital (graduate school, social relations, etc.)	6	1	0	0	3	3.7
Socio-economic factors	6	0	1	1	2	3.7

Academic human capital (academic grades, certificates, etc.)	5	2	0	1	2	3.7
Professional skills	7	1	2	0	0	4.5
Professional knowledge	8	0	1	1	0	4.5

Table 14 Survey on Employer Demand for Graduates' employbility

The score for execution skills was 4.80, indicating that employers value this skill the most. They believe that the skills to complete tasks efficiently and with high quality is one of the most important qualities in graduates. Employers expect employees to complete assigned tasks on time and to a high standard. The next most important skills are teamwork skills, communication and coordination, interpersonal skills, problem-solving skills, and leadership.

Although graduates from Liuzhou Vocational and Technical College have a high awareness of employability, there is still room for improvement in key areas such as communication and coordination, teamwork skills, and leadership. Therefore, it is particularly important to develop targeted Training course to improve these skills. Improving employability in these areas not only helps graduates better integrate into teams and handle complex situations effectively but also significantly improves their competitiveness and growth potential in the workplace. Through systematic training and practical experience, graduates can better meet employers' expectations, facilitating a smooth career progression.

In summary, improving graduates' skills in these key areas can help employers find more suitable talent and pave the way for graduates' career development, creating a win-win situation and achieving better alignment in the job market.

4.3.1.3 Results of Semi-structure interview with companies

The findings from semi-structured interviews conducted with 7 companies recruiting graduates from Liuzhou Vocational and Technical College, aiming to assess

the employability of the college's graduates and provide valuable insights into the course's design, content, teaching methods, and potential areas for Improvement.

Interview Results:

1. **Basic Information about the Company**:

Could you please introduce yourself and the department you work in?

How many years of experience do you have in recruitment and training?

Liuzhou Bailian Airport: Human Resources Manager with five years of experience, responsible for recruitment and employee training.

Guangxi Liugong Group Co., Ltd.: Recruitment Specialist with three years of experience in recruitment and training, responsible for hiring engineers and technical staff.

Shangri-La Hotel: HR Supervisor with seven years of recruitment experience, mainly responsible for staffing and training across various hotel departments.

Liuzhou Iron and Steel Co., Ltd.: HR Department Manager with ten years of experience in recruitment and training, involved in the development of personnel for multiple positions.

Walmart Supermarket (Liuzhou): HR Assistant with two years of experience, focusing on recruitment and employee development in the retail industry.

Liuzhou Suanwang Pump Manufacturing Co., Ltd.: HR, They have eight years of experience in recruitment and training, primarily responsible for hiring technical and engineering staff and overseeing employee development programs.

Liuzhou Xincheng Art Training Center Co., Ltd.: HR, They have six years of experience in recruitment and training, primarily focusing on hiring instructors and administrative staff, as well as designing professional development programs for employees.

2. **Impressions and experiences with graduates from Liuzhou Vocational Technical College**:

Has your company ever recruited graduates from Liuzhou Vocational Technical College? Why did you choose them?

Liuzhou Bailian Airport: Has recruited graduates, citing the reason that students have rich practical experience and strong adapt skills.

Guangxi Liugong Group Co., Ltd.: Has recruited graduates, believing that students possess solid professional knowledge in engineering and can quickly get up to speed.

Shangri-La Hotel: Has recruited graduates, noting that they generally have good service awareness and language skills, which are very important for our customer service positions.

Liuzhou Iron and Steel Co., Ltd.: Has recruited graduates, emphasizing that they have strong technical operation skills and safety awareness. These qualities align well with our requirements for employees.

Walmart Supermarket (Liuzhou): Has recruited graduates, stating that their internship experience in the retail industry helps them integrate quickly into the work environment.

Liuzhou Suanwang Pump Manufacturing Co., Ltd.： Has actively recruited graduates from Liuzhou Vocational Technical College. The company values these graduates for their solid technical skills, particularly in pump manufacturing and mechanical operations. The interviewee noted that the graduates' hands-on experience and skills to quickly adapt to the production environment have been key reasons for their recruitment.

Liuzhou Xincheng Art Training Center Co., Ltd.： Has recruited graduates from Liuzhou Vocational Technical College in the past. The interviewee mentioned that these graduates are often selected due to their strong foundational knowledge in art and design, coupled with their enthusiasm for teaching and creativity. The practical experience gained during their studies has enabled them to integrate quickly into the training center's environment.

3. Companies's Skill and Cap skills Requirements for Graduates:

In which areas do you believe students from Liuzhou Vocational Technical College excel? What skills that the company need from the prospective employee?

Liuzhou Bailian Airport: Graduates from Liuzhou Vocational and Technical College possess good professional qualities and foundational skills, particularly excelling in service attitude and work discipline. These characteristics make them very well-suited for our airport work environment.

Guangxi Liugong Group Co., Ltd.: Graduates perform excellently in technical operations, but they still need to improve their communication, coordination, teamwork skills, and interpersonal skills. We have found that they struggle somewhat when coordinating the interests of various parties in complex projects. Additionally, their problem-solving skills and leadership skills need further development to better take on higher-level responsibilities.

Shangri-La Hotel: Graduates demonstrate outstanding service awareness, but they need to Improve their communication, coordination, and teamwork skills skills. Furthermore, their problem-solving skills when facing emergencies and their leadership skills within teams also require further strengthening to better serve customers and lead teams.

Liuzhou Iron and Steel Co., Ltd.: Graduates show good performance in technical operations and safety awareness, but their communication, coordination, teamwork skills, and interpersonal skills need improvement. In particular, they appear to lack experience when it comes to coordinating resources and solving unexpected issues during the production process. Leadership skills are another area that requires Improvement.

Walmart Supermarket (Liuzhou): Graduates perform well in service awareness, but they still need to improve their communication, coordination, and teamwork skills. Additionally, their problem-solving skills when facing customer complaints or emergencies, as well as their leadership skills within teams, also need to be strengthened.

Liuzhou Suanwang Pump Manufacturing Co., Ltd.: The interviewee highlighted that graduates from Liuzhou Vocational Technical College excel in technical operations, specifically in areas such as mechanical assembly, maintenance, and quality control.They pointed out that graduates need to improve their communication, coordination, teamwork skills, and interpersonal skills. The interviewee mentioned that these areas are crucial, especially when working in teams on large-scale projects. Additionally, problem-solving skills and leadership skills were identified as areas that require further development, as these are essential for taking on higher responsibilities and leading teams effectively in the manufacturing industry.

Liuzhou Xincheng Art Training Center Co., Ltd.: Graduates are particularly strong in their technical skills related to art and design. Their skills to create and teach various artistic techniques has been a significant asset to the training center.However, the interviewee identified communication, coordination, teamwork skills, and interpersonal skills as areas that need improvement. In an art training environment, effective communication with students and colleagues is essential, and graduates sometimes struggle in this regard. The interviewee also noted that problem-solving skills and leadership skills are areas where further development is needed, especially when graduates are expected to lead art projects or manage classes.

4.Suggestions and Expectations for the College:

What recommendations do you have for Liuzhou Vocational Technical College to better train their students and meet the needs of companies?

Liuzhou Bailian Airport: It is recommended that the college further strengthen students' training in communication, coordination,teamwork skills, and interpersonal skills, while also improving their problem-solving and leadership skills. By increasing relevant course and practical training opportunities, students can better navigate real work situations.

Guangxi Liugong Group Co., Ltd.: It is suggested that the college incorporate more training content related to communication, coordination,teamwork skills, and

interpersonal skills into the course. Additionally, project management and leadership course can help Improve students' problem-solving skills and leadership potential.

Shangri-La Hotel: It is recommended that the college add more practical training to the course, especially in areas related to customer service and crisis management. Furthermore, by increasing team projects and leadership training, students can improve their communication, coordination,teamwork skills, problem-solving, and leadership skills.

Liuzhou Iron and Steel Co., Ltd.: We hope the college can strengthen students' training in communication, coordination,teamwork skills, and interpersonal skills, while also focusing on developing their problem-solving and leadership skills. Providing more hands-on practice and internship opportunities can help students accumulate real work experience.

Walmart Supermarket (Liuzhou): It is suggested that the college Improve students' communication, coordination,teamwork skills, and interpersonal skills during practical training. Additionally, by incorporating team projects and leadership training course, students' problem-solving and leadership skills can be improved, making them more competitive in their future careers.

Liuzhou Suanwang Pump Manufacturing Co., Ltd.: The interviewee suggested that Liuzhou Vocational Technical College should place more emphasis on developing students' communication, coordination, teamwork skills, and interpersonal skills. They recommended the inclusion of more project-based learning and leadership training course, which would allow students to practice these skills in real-world scenarios. Additionally, they suggested improving the curriculum with more problem-solving activities to better prepare students for the challenges they may face in the manufacturing industry.

Liuzhou Xincheng Art Training Center Co., Ltd.: The interviewee recommended that Liuzhou Vocational Technical College should focus on improving students' communication, coordination, teamwork skills, and interpersonal skills. They

suggested that the college include more group projects and collaborative learning experiences in the curriculum. Additionally, they advocated for more leadership training and problem-solving workshops to better prepare students for the challenges of teaching and leading in an art-focused environment.

In summary, companies generally believe that graduates from Liuzhou Vocational Technical College excel in professional knowledge, service awareness, and technical operations, and can quickly adapt to the work environment. However, they still need improvement in communication, coordination,teamwork skills, problem-solving, and leadership skills. The companies recommend that the college strengthen training in these areas by adding relevant course and practical opportunities to improve students' overall skills and better meet the needs of the companies.

4.3.2 Phase II: Construction

In this phase, training course have been developed to Improve the employability of graduates from Liuzhou Vocational and Technical College.

4.3.2.1 Principles for Developing Training Course to Improve Employability of College Graduates

The principles for developing training course to improve the employability of college graduates include the following six components:

Teamwork Skills: Implement the "Online Snail Noodle Entrepreneurship Competition" to provide students with hands-on experience in team-based business planning and execution.

Problem-Solving Abilities: Utilize the "Smart City" Innovation Challenge to engage students in identifying and solving real-world urban development issues through creative and critical thinking.

Communication and Coordination Skills: Conduct the "Cross-departmental Project Collaboration" Communication Exercise to enhance students' abilities in coordinating and communicating effectively across various departments and teams.

Leadership Skills: Facilitate "Campus Public Service Activity Planning and Execution" to offer students opportunities to lead and manage community service projects, refining their leadership and organizational skills.

Interpersonal Skills: Implement the "Cross-cultural Communication" Simulation Practice to help students develop strong interpersonal skills and effectively navigate diverse cultural interactions.

Assessment and Feedback: The Training course should include systematic assessment and feedback mechanisms to ensure students' learning outcomes. This can involve project presentations to evaluate students' skills and provide constructive feedback for continuous improvement.

By implementing these principles, the Training course aim to comprehensively Improve students' employability, meeting the demand for highly skilled talent in the job market.

4.3.2.2 Objectives of the Training Course to Improve College Students' Employability

The Training Course to Improve college students' employability serves as an essential tool aimed at equipping students with a wide range of skills to navigate the complexities of today's job market. Its main objectives are as follows:

(1) Enhance Teamwork Skills: Improve students' skills to work collaboratively and effectively in teams through structured group projects.

(2) Strengthen Problem-Solving Skills: Train students to address and resolve real-world problems using critical thinking and innovative solutions in project scenarios.

(3) Advance Communication and Coordination Skills: Develop students' skills to effectively communicate and coordinate within teams and across different stakeholders through project-based interactions.

(4) Cultivate Leadership Skills: Build leadership capabilities by assigning leadership roles and responsibilities within projects, allowing students to practice and refine their leadership qualities.

(5) Improve Interpersonal Skills: Foster strong interpersonal skills through collaborative projects and team interactions, supporting students in building and maintaining positive professional relationships.

By achieving these objectives, the Training Course to Improve college students' employability will comprehensively improve students' competitiveness in the job market, ensuring their success in an ever-changing employment landscape.

4.3.2.3 Developed the Training Course to Improve College Students' employability Teaching Content and Material

After extensive consultation with course development experts and careful analysis of the try-out results of the developed to improve college students' employability training course, we have successfully refined the course's content and optimized the allocation of teaching hours to Improve its effectiveness in improving college students' employability. The modifications made were emphasized the tailored approach to foster employability understanding and skills among the college students, based on both expert insights and empirical evidence from initial implementations, as detailed in Table 15.

No.	Topic	Key information	Objective	Hours

1	Teamwork Skills	1.1 Basic Principles of Teamwork 1.2 Team Roles and Responsibility Allocation 1.3 Techniques for Enhancing Team Collaboration 1.4 Project: Online Snail Noodle Entrepreneurship Competition	1. Learn the basic principles of teamwork to effectively manage team dynamics and foster collaboration. 2. Understand team roles and responsibility allocation to optimize team performance and efficiency. 3. Apply techniques for enhancing team collaboration to improve overall group productivity and cohesion. 4. Gain practical experience in teamwork by participating in the "Online Snail Noodle Entrepreneurship Competition," implementing teamwork skills in a real business setting.	8
2	Problem-solving Skills	2.1 Basic Steps in Problem Solving 2.2 Creative Thinking and Problem Solving 2.3 Project: "Smart City" Innovation Challenge	1. Master the basic steps of problem-solving to systematically address and resolve issues. 2. Utilize creative thinking techniques to develop innovative solutions for complex problems. 3. Demonstrate problem-solving skills through participation in the "Smart City" Innovation Challenge, applying critical and creative thinking to urban development challenges.	8
3	Communication and Coordination Skills	3.1 Basic Principles and Techniques of Communication	1. Learn the basic principles and techniques of effective communication to enhance	8

		3.2 Coordination and Negotiation Skills 3.3 Project: "Cross-departmental Project Collaboration" Communication Exercise	information exchange and understanding. 2. Develop coordination and negotiation skills to facilitate smooth collaboration across different departments and teams. 3. Practice these skills in the "Cross-departmental Project Collaboration" Communication Exercise to improve inter-departmental communication and coordination.	
4	Leadership Skills	4.1 Basic Concepts of Leadership 4.2 Techniques for Enhancing Leadership 4.3 Project: Campus Public Service Activity Planning and Execution	1. Understand basic concepts of leadership to effectively guide and motivate team members. 2. Apply techniques to enhance leadership abilities, including decision-making and team management. 3. Develop leadership skills through the planning and execution of a Campus Public Service Activity, leading community service projects and managing team efforts.	4
5	Interpersonal Skills	5.1 The Importance of Interpersonal Relationships 5.2 Techniques for Building and Maintaining Interpersonal Relationships	1. Recognize the importance of interpersonal relationships in professional settings and develop strategies to build and maintain them. 2. Apply techniques for building and sustaining positive relationships to enhance workplace interactions.	8

		5.3 Conflict Management and Resolution 5.4Project: "Cross-cultural Communication" Simulation Practice	3. Learn conflict management and resolution techniques to handle interpersonal issues effectively. 4. Practice interpersonal skills in the "Cross-cultural Communication" Simulation Practice, improving cross-cultural interactions and communication.	

Table 15 Developed Training Course Content and Teaching Hour Arrangement

No.	Topic	Project Title	Project	Expected Outcomes
1	Teamwork Skills	Online Snail Noodle Entrepreneurship Competition	This project aims to improve students' teamwork skills through a simulated entrepreneurship process. Students will be divided into several groups, each simulating an online snail noodle sales company. The project steps include: Students will be assigned to different roles based on their strengths, such as marketing, supply chain management, customer service, and financial management, ensuring clear division of labor within the team. The team will jointly set sales targets and discuss overall strategies, including market promotion, product pricing, and supply chain optimization. Team members will closely collaborate, coordinating their respective responsibilities, and identify and solve practical problems such as inventory management, customer complaints, and	1. improve team collaboration awareness and improve communication and cooperation skills. 2.Strengthen team decision-making cap skills. 3. Improve communication and coordination skills.

			promotional event planning during the project. 4. During the project execution, the team will monitor sales performance in real-time and continuously optimize products and services based on customer feedback to achieve the set goals.	
2	Problem-solving Skills	"Smart City" Innovation Challenge	Students will be divided into multiple teams, each facing a specific "Smart City" problem, such as traffic congestion or energy management. The project steps include: Team members collaboratively analyze the chosen smart city problem, identifying its root causes. Use creative thinking to propose multiple solutions and discuss their feasibility. Select the optimal solution and develop a detailed implementation plan. Simulate the solution to assess its effectiveness in real-world application. 5. The team needs to summarize the results and report the solution's effectiveness and improvement suggestions.	Students will be able to systematically identify and understand the root causes of complex problems. Students will learn to develop and evaluate innovative solutions. 3. improve students' skills in verifying and improving solutions in practice.
3	Communication and Coordination Skills	"Cross-departmental Project Collaboration" Commu	Students will simulate the roles of managers from different departments in a multinational company, responsible for communication and collaboration in a cross-departmental project. The project steps include:	1. Students will improve their verbal and written communication skills.

		nication Exercise	Students are assigned different departmental roles, such as marketing, finance, and technology. Each department needs to submit project proposals in both verbal and written forms, explaining their respective work plans. Regular simulated meetings will be held to communicate project progress, discuss and resolve emerging issues. 4. At the end of the project, the team needs to write and submit a summary report reflecting the overall communication effectiveness of the project.	2. Proficiency in applying non-verbal communication techniques, such as body language and eye contact. 3. Students will improve their skills to understand and respond to others' viewpoints through active listening.
4	Leadership Skills	Campus Public Service Activity Planning and Execution	This project revolves around a real campus public service activity and aims to train students' leadership skills. Students will complete the entire process from activity planning to execution within 4 hours, requiring team leaders to make quick decisions and effectively lead the team. The project steps include: Activity Goal Setting and Role Assignment (1 hour): The team must determine a theme and specific goals for a campus public service activity (such as environmental protection promotion, campus cleanup day, fundraising activities, etc.) within 15 minutes. Then, the team leader assigns roles based on team members' strengths and interests, such as event planning,	1. improve leadership skills. 2. Strengthen leadership resource management capskills. 3. Improve crisis management and problem-solving skills. 4. Cultivate motivational and

			promotion, material management, and on-site coordination. Activity Planning and Resource Management (1 hour): The team develops a detailed activity plan within 30 minutes, including a schedule, resource requirements (such as promotional materials, venue arrangements, volunteer recruitment, etc.), and risk contingency plans (such as weather changes, material shortages, etc.). Simulated Execution and On-the-spot Response (1 hour): The team completes key tasks in a simulated activity execution scenario (such as setting up the venue, conducting promotions, coordinating volunteers, etc.). During execution, the instructor may introduce some unforeseen circumstances (such as last-minute venue changes, insufficient volunteers, etc.), requiring the team leader to make quick decisions and lead the team in adjusting the execution plan. 4. Outcome Presentation and Immediate Feedback (1 hour): The team needs to present a report on the public service activity's outcomes in the final 20 minutes, including the achievement of activity goals, team collaboration performance, and a summary of handling unexpected situations. The instructor will provide immediate feedback based on the presentation, helping students reflect on their leadership performance.	communication skills.

5	Interpersonal Skills	"Cross-cultural Communication" Simulation Practice	Students will participate in a simulated cross-cultural work environment project, collaborating with "colleagues" from different cultural backgrounds. The project steps include: Students first learn basic etiquette and work habits from different cultural backgrounds. Students engage in cross-cultural collaboration in a simulated work environment to complete assigned tasks. When faced with conflicts arising from cultural differences, students must effectively communicate and resolve them through empathy and emotional intelligence. 4. Students continuously adjust themselves in the project to adapt to a diverse cultural work environment.	1. Students will improve interpersonal communication skills in a cross-cultural environment. 2. Students will learn to build harmonious working relationships through empathy. 3. Improve students' adapt skills and cooperation efficiency in a multicultural work environment.

Table 16 The development of the project-based training course and its expected outcomes

The revised training course, presents a comprehensive structure that integrates expert feedback and empirical evidence from the try-out phase. This approach ensured that the course is both theoretically sound and practically effective in equipping students with the necessary skills and knowledge to improve college students' employability.

The course's content has been meticulously curated to cover essential topics that are pivotal for employability, including teamwork skills, problem-solving skills,

communication and coordination skills, leadership skills, interpersonal skills. The teaching hours for each module have been carefully allocated to reflect the depth and complexity of the topics, ensuring that students receive adequate exposure and opportunities to engage with the material fully.

In summary, the content and schedule of the developed employability Training Course, as shown in Table 16, represent a targeted and evidence-based approach to improving core workplace skills for college students. The positive outcomes of the program's evaluation highlight its potential as a valuable educational resource, preparing students to excel and succeed in the highly competitive job market.

4.3.2.4 Developed Training Course to Improve College Students' employability Teaching Method

The research results emphasize the application of Social Cognitive Theory, Constructivist Learning Theory, Experiential Learning Theory, and Situated Learning Theory in the developed employability training course for vocational students. These theories are significant in improving students' core competencies and overall quality in the workplace. By integrating these theories, the program provides students with a comprehensive and evidence-based learning framework, helping them apply the acquired knowledge and skills in practical work settings, thus enabling them to excel and succeed in the highly competitive job market.

The developed training course to improve college students' employability teaching plan included 7 parts as teaching topic, teaching content, teaching objectives, academic analysis, key points and difficulties in teaching, teaching method, teaching Process, teaching evaluation and teaching reflection. In this research, in order to improve college students' employability through training course, teaching method developed (Figure 15).

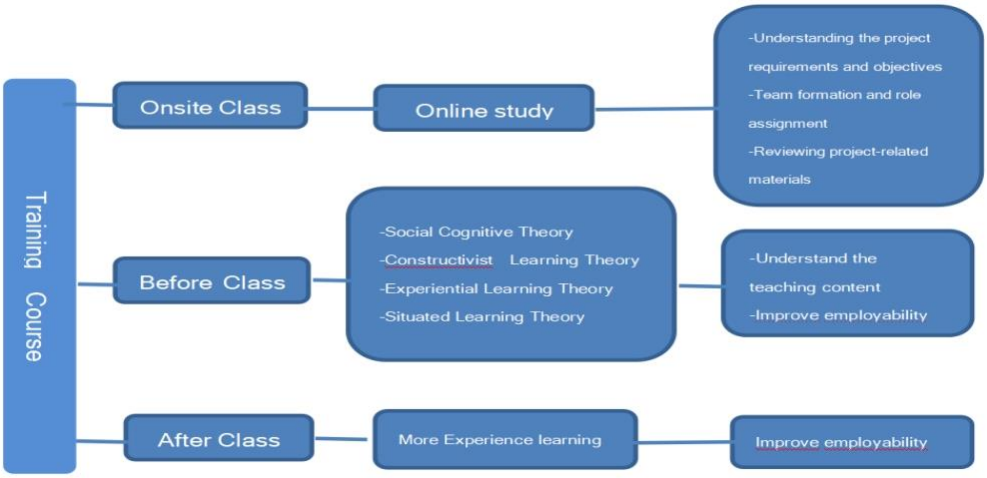


Figure 15 Developed Teaching Method used in Training Course

The developed teaching methods utilize Social Cognitive Theory, Constructivist Learning Theory, Experiential Learning Theory, and Situated Learning Theory, primarily through experiential and interactive learning. These methods emphasize the teacher's and learner-centered roles, guiding students in independent and collaborative learning, as illustrated in Figure 14. The teaching strategies include active learning, collaborative learning, reflective practice, and observational learning. For the evaluation of these developed teaching methods, both formative assessment and authentic evaluation are beneficial to this study.

4.3.2.5 The Assessment of Developed Training Course

In this research, the developed training course was evaluated through pre- and post-employment capability tests and project presentations.

Pre- and post-employment capability tests were conducted with 100 graduates from Liuzhou Vocational and Technical College from the year 2014 to collect data on improvements in their employability before and after participating in the training course aimed at enhancing college students' employment abilities. The evaluation employed TRI by Meredith Belbin, PSI by Donald A. Neudecker, CCQ by James C. McCroskey, LPI by James M. Kouzes and Barry Z. Posner, and SSI by E. William Riggio. Method to create an employment capability assessment form, which includes 25 items measuring

five variables: teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills. Project presentation content was used to gather information on the effectiveness of the training course in improving the employability of students at Liuzhou Vocational and Technical College.

In conclusion, the evaluation of students' employability after the implementation of the training course showed significant improvements in their teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills. These results confirm the effectiveness of the developed training course and teaching methods in enhancing vocational students' employability.

4.3.3 Phase III: Implementation

In this phase, the results of the improvement of Liuzhou Vocational and Technical College students' employability through the developed training course learning presented.

4.3.3.1 Results of Project Presentation

The Project Presentation conducted to assess the performance of the 100 graduating students from Liuzhou Vocational and Technical College, who were divided into 10 groups to complete various projects, aimed to evaluate their effectiveness in teamwork, problem-solving, communication, leadership, and interpersonal skills. The observation sought to measure how well the students applied their skills in a practical setting and their readiness for professional challenges. Below are the synthesized results of the evaluation:

Project	Excellent 21-25 points	Good 16-20 points	Pass 11-15 points	Fail 10 points and below
Teamwork Skills - Online Snail Noodle Entrepreneurship Competition	8	2	0	0
Problem-solving Skills - "Smart City" Innovation Challenge	9	1	0	0
Communication and Coordination Skills - "Cross-departmental Project Collaboration" Communication Exercise	7	3	0	0

Leadership Skills - Campus Public Service Activity Planning and Execution	7	3	0	0
Interpersonal Skills - "Cross-cultural Communication" Simulation Practice	10	0	0	0

Table 17 Project Presentation Results Summary

In summary, the evaluation results highlight a strong overall performance across the different skill areas. Most participants excelled in their respective categories, with a significant number achieving the highest rating of Excellent (21-25 points). Specifically, "Problem-solving Skills" and "Interpersonal Skills" saw the highest number of excellent ratings, indicating exceptional capabilities in these areas. "Teamwork Skills" and "Communication and Coordination Skills" also showed strong performances, with only a few participants rated Good, while none fell into the Pass or Fail categories. This data underscores the high competence and effectiveness of the participants in handling complex tasks and challenges.

4.3.3. 2 Results of employability improvement of college student before and after the implementation of develop training course.

Aimed to thoroughly evaluate and Improve the effectiveness of the course in meeting its educational objectives, the research conducted pre and post-test in the Training Course. SPSS23.0 used to analyze the data from Pre -test and Post -test, the tests of normality shown in Figure 16.

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pretest	.090	100	.200*	.960	100	.250
posttest	.095	100	.200*	.965	100	.270

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Figure 16 Tests of Normality (Implementation)

From the results shown in Figure 16, the number of samples is 100, Shapiro-Wilk for Pre -test: w=0.960, sig=0.250>0.05, Post -test: W=0.965, sig=0.270>0.05, in line with normal distribution, can perform T test.

In order to determine whether the difference between employability between pre-test and post-test scores were statistically significant, t-test was applied for the paired samples shown in Figure 16 and Figure 17.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	75.00	100	36.290	3.629
	posttest	115.00	100	46.360	4.636

Figure 17 Paired Samples Statistics (Implementation)

From the data of Figure 16. Before learning the developed Training Course, the Pre-test Mean of the research object was 75.00 points; after learning the developed Training Course, Post-test Mean of the research object was 115.00 points.

	Paired Differences					t	df	Sig.(2-tailed)
				95%Confidence Interval of the Difference				
	Mean	Std.Deviation	Std.Error Mean	Lower	Upper			
Pair 1 pretest-posttest	-40	59.280	5.930	-28.270	-51.730	-6.750	99	.000

Figure 18 Paired Sample Test (Implementation)

From Figure 18, it can be seen that the average of the research objects after experiment increased by 40.00 points, Sig. (2-tailed) = 0.000, less than 0.05, and the difference between 95% was between28.270and 51.730. It shows that there is a statistically significant difference in the learning achievement of the research subject. The improvement details shown in Table 18.

	Teamwork Skills	Problem-solving Skills	communication and coordination skills	Leadership Skills	Interpersonal Skills
Mean of Pre test	17	16	13	11	18
Mean of Post test	24	23	20	18	20

Improvement in percentage	41.18%	43.75%	53.85%	63.64%	11.11%

Table 18 The Improvement Details of the Four Components of employability

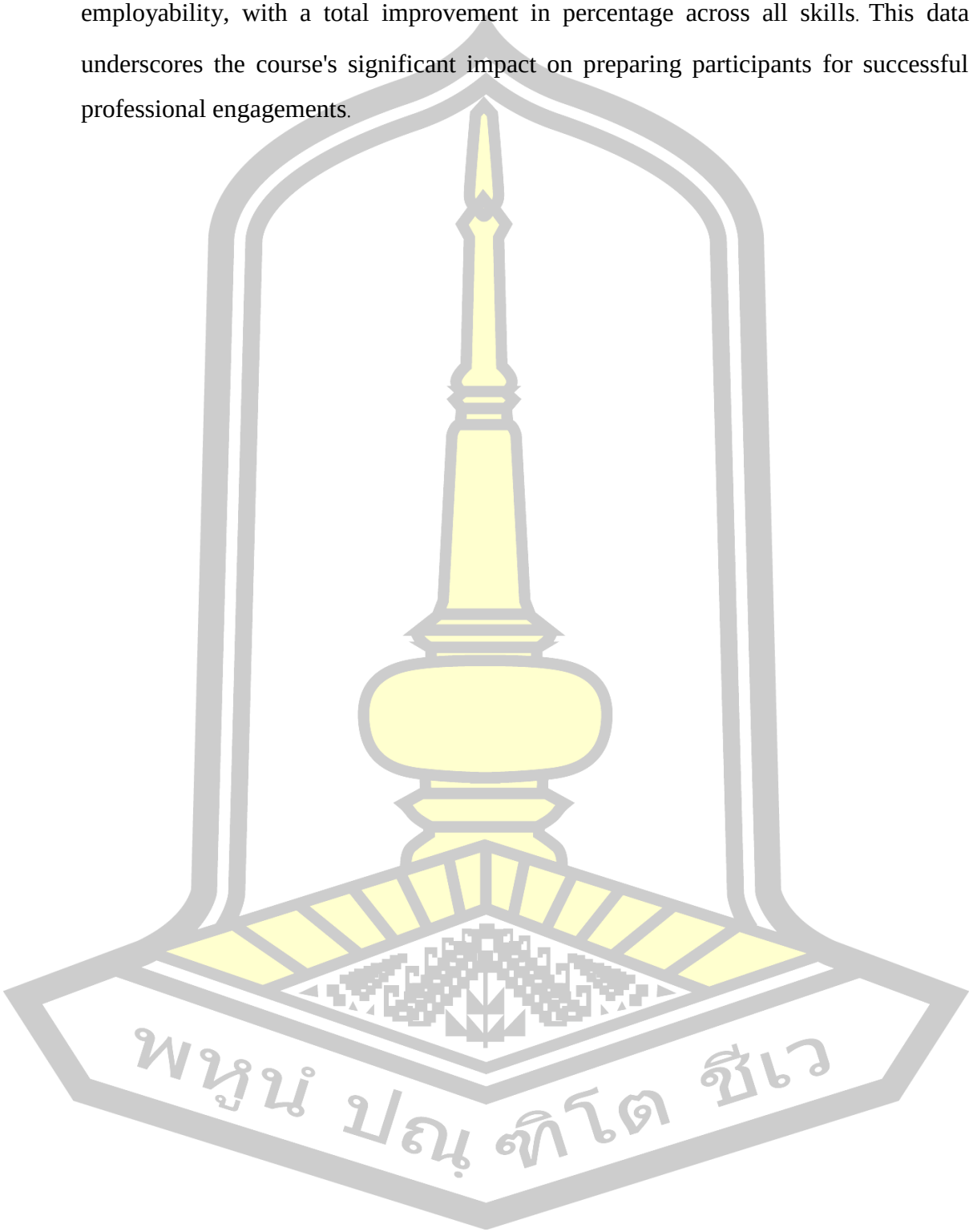
The data provided in Table 18 highlights the effectiveness of the training course aimed at improving various employability, including teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills. The impact of the intervention is clearly demonstrated by the significant improvements recorded in the mean scores from the pre-test to the post-test across all measured domains.

Specifically, teamwork skills had a post-test mean score of 24.00, compared to a pre-test mean score of 17.00, representing an improvement of 41.18%. This indicates a considerable improvement in the participants' skills to collaborate effectively in a team setting. Problem-solving skills showed a post-test mean score of 23.00, with a pre-test mean score of 16.00, reflecting an improvement of 43.75%. This improvement signifies a notable increase in the participants' skills to effectively identify, analyze, and resolve problems.

Communication and coordination skills recorded a post-test mean score of 20.00, rising from a pre-test mean score of 13.00, resulting in a 53.85% improvement. This significant increase reflects an improved skills to convey information clearly and efficiently, a crucial skill in nearly every professional field. Leadership skills had a post-test mean score of 18.00, with a pre-test mean score of 11.00, indicating an improvement of 63.64%. This improvement highlights the participants' increased capacity to lead teams, make decisions, and positively influence others.

In the domain of interpersonal skills, the post-test mean score was 20.00, compared to a pre-test mean score of 18.00, showing an improvement of 11.11%. This improvement signifies improved skills in building and maintaining professional relationships, a critical component of workplace success.

In conclusion, the training course proved highly effective in improving employability, with a total improvement in percentage across all skills. This data underscores the course's significant impact on preparing participants for successful professional engagements.



CHAPTER V

CONCLUSION and DISCUSSION

Developing training course to improve employability of Liuzhou Vocational and Technical College students. The organization of the research findings is as follows:

Conclusion

Discussion

Suggestions

5.1 Conclusion

Developing training course to improve employability of Liuzhou Vocational and Technical College students, the conclusion focusing on three key aspects: investigating fundamental data and information, Training Course developmen, and Training Course's effectiveness.

(1) Investigation of Fundamental Data and Information: The investigation and analysis of fundamental data are crucial in developing course that improve the employability of students at Liuzhou Vocational and Technical College. This study, grounded in relevant theories and concepts, involved a thorough investigation and analysis of fundamental data, including graduate questionnaires, employer surveys, and semi-structured interviews. We identified five key areas essential for improving employability: teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills. Through a systematic investigation of fundamental data and theoretical support, we have laid a solid foundation for developing course that improve the employability of students at Liuzhou Vocational and Technical College, helping them better adapt to the job market.

(2) Training Course Development: The pilot phase of the training course showed statistically significant improvements in the employability of students at Liuzhou Vocational and Technical College, with post-test scores significantly higher. improvements were observed across all five skill components, particularly in teamwork skills. Additionally, students suggested adjustments to the content to improve the course's practicality and appeal.

(3) Training Course effectiveness: Project Presentations and pre- and post-tests demonstrated significant improvements in students' teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills. The training course effectively improved the employability of students at Liuzhou Vocational and Technical College, with the most notable improvement in teamwork

skills. The use of project-based learning, combined with Social Cognitive Theory, Constructivist Learning Theory, Experiential Learning Theory, and Situated Learning Theory, played a crucial role in achieving these outcomes.

In summary, the training course has proven to be a highly effective educational tool in improving the employability of students at Liuzhou Vocational and Technical College. This success can be attributed to a comprehensive approach in content development, the integration of innovative teaching methods, and a strong emphasis on practical skills, including teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills. The course's effectiveness was evidenced by statistically significant improvements observed through Project Presentations and pre- and post-tests, particularly in teamwork skills. Moving forward, continuous refinement is essential, focusing on addressing diverse student needs, optimizing teaching methodologies, and further aligning the course with industry demands to ensure sustained success and adapt skills in the job market.

5.2 Discussion

Phase I Contextual Study

The aim of this phase of the study is to understand the current employbility of graduates from Liuzhou Vocational and Technical College and to identify the gap between the students' skills and the needs of enterprises. This phase of the study will provide foundational data support for the subsequent development of training course and will clarify the direction and focus of the training course design.

This phase adopts a combination of qualitative and quantitative methods to comprehensively collect and analyze relevant data. The specific steps include:

-Questionnaire

This study used the Employment Competency Elements Analysis Table designed by Wang Feng (2018) as the basis for designing the questionnaire. The questionnaire aims to assess the employbility of graduates from Liuzhou Vocational and Technical

College, particularly in areas such as teamwork, problem-solving, communication and coordination, leadership, and interpersonal skills. The questionnaire was distributed to 300 recent graduates, 200 alumni, and 10 enterprises that have consistently employed graduates from the college. Through these questionnaires, the study investigated the graduates' performance in employbility and the discrepancies between these capskills and the needs of the enterprises.

-Enterprise Interviews

Seven representative enterprises were selected for semi-structured interviews. These interviews primarily focused on the gap between the enterprises' expectations of graduates and their actual performance, particularly in terms of soft skills.

Analysis of Results

Preliminary analysis indicates that graduates from Liuzhou Vocational and Technical College score relatively low in various aspects of employbility, especially in teamwork skills, problem-solving skills, Communication and coordination skills, leadership skills, and interpersonal skills. This reveals a significant gap between the enterprises' expectations and the graduates' actual performance.

Literature Review and Theoretical Foundation

The literature review highlights the importance of employability in higher education and provides a theoretical foundation for this study. For instance, Sun (2019) explored the challenges of employability in the rapidly changing Chinese economic context, particularly the gap between graduates' skills and enterprises' expectations. The study suggests that while technical skills are important, there is an increasing demand from enterprises for soft skills such as communication skills and teamwork skills,. Therefore, this study should particularly focus on cultivating these soft skills in the course development.

In terms of theoretical foundation, this study adopts Tyler's Model (Tyler, 1972), combined with social cognitive theory (Bandura, 1999), constructivist learning theory

(Benson, 2003), experiential learning theory (Kolb, 11004), and situated learning theory (Lave, J. & Wenger, E. 1991). These theories will guide the design and implementation of the training course to ensure that the course effectively enhance students' employability.

Phase II Construction

In the phase II of course development, based on research gained from the phase I, the course design integrates project-based learning with Social Cognitive Theory, Constructivist Learning Theory, Experiential Learning Theory, and Situated Learning Theory. This integration aims to create an interactive, student-centered learning environment that enhances college students' employability, particularly in teamwork skills, problem-solving skills, communication and coordination skills, leadership skills, and interpersonal skills.

The key components of the course include:

Social Cognitive and Constructivist Learning: The course content emphasizes learning through collaborative activities and social interaction, helping students construct knowledge within a team environment. Students are not just passive recipients of knowledge but active learners who build and reinforce their teamwork skills and leadership skills through interaction and cooperation with their peers.

Practical Application: To bridge the gap between theoretical knowledge and real-world application, the course focuses on the skills to solve real-world problems within the context of a project. Grounded in Experiential Learning Theory, students engage directly with real projects, allowing them to experience and apply their knowledge, thereby improving their problem-solving skills and communication and coordination skills.

Situated Learning: The course is designed around the principles of Situated Learning Theory, emphasizing the importance of learning in authentic contexts. By performing tasks within specific project environments, students gain hands-on

experience that helps them better develop their communication and coordination skills, as well as their interpersonal skills.

Project-Based Learning: The course adopts a project-based learning approach, where students participate in the entire project process, including planning, execution, evaluation, and reflection. This method ensures that students are not only involved in practical applications but also internalize knowledge and skills, providing a platform for them to demonstrate and improve their employability.

Throughout the course development, these theories have been supported by empirical research. For instance, Social Cognitive Theory highlights learning through observation and imitation, while Constructivist Learning Theory focuses on knowledge construction through personal experience and social interaction. By integrating these approaches with project-based learning, the course emphasizes both theoretical understanding and practical application, laying a solid foundation for improving college students' employability.

Phase III Implementation

In this phase, an evaluation was conducted on the effectiveness of the implemented training course, with the goal of determining their impact on improving college students' employability. The course integrated Social Cognitive Theory, Constructivist Learning Theory, Experiential Learning Theory, and Situated Learning Theory, utilizing real-world projects to enhance students' comprehensive skills.

Increased Engagement: The course significantly boosted student engagement and motivation through project-based teaching methods. According to Mills and Treagust (2003), project-based learning is particularly effective in areas that require the integration of theoretical knowledge and practical experience. Research indicates that project-based learning not only enhances technical skills but also strengthens students' abilities in teamwork, effective communication, and project management—skills that are highly valued in the job market.

Challenges in Practical Application: Although the course implementation led to an overall improvement in abilities, students still faced challenges in applying theoretical knowledge to real-world work situations. This suggests a need for more targeted guidance to help students better integrate and apply the knowledge and skills they have acquired.

In conclusion, the study underscores a significant gap between the employability of Liuzhou Vocational and Technical College graduates and the expectations of enterprises. This discrepancy highlights the need for targeted training interventions. The findings will inform the design of training course aimed at bridging this gap and improving graduates' employability to better meet industry demands.

5.3 Suggestions

Based on the comprehensive findings and insights gleaned from the development, implementation, and evaluation of the training course, several recommendations including implementation and further research are as follow:

-Suggestions for Implication

1. Training Courses Aligned with Industry-Specific Employability Needs in Liuzhou:

Partner with local industries in Liuzhou to identify the specific skills required for employability. Develop training courses tailored to these needs, ensuring that college students gain practical and relevant skills.

Establish collaborations between universities and businesses to offer internships and apprenticeships, providing students with real-world experience that improve their employability.

2. Employment Capability Development through Targeted Training Course:

Integrate training modules focused on enhancing key employbility such as teamwork skills, problem-solving skills, Communication and coordination skills, leadership skills, and interpersonal skills. These skills are crucial for improving the employability of college students.

Promote involvement in extracurricular activities and workshops that support the development of these employment capabilities, thereby boosting overall employability.

3. Improving Career Services to Meet Industry Demands in Liuzhou:

Strengthen career services by offering targeted career counseling, job placement assistance, and resume-building workshops that align with industry needs in Liuzhou. This will improve the employability of college students.

Develop an online platform to provide information on job openings, career fairs, and networking events, facilitating connections between students and potential employers in the Liuzhou.

4. Regular Updates to Training Courses for Improved Employability in Liuzhou:

Continuously revise training courses to keep pace with evolving job market demands. Incorporate feedback from employers and alumni to ensure the courses enhance the employability of college students in Liuzhou.

Add modules on emerging technologies and trends, such as digital marketing, data analysis, and artificial intelligence, to better prepare students for future job markets.

- Suggestions for Further Research

1. Comparative Analysis of Training Course:

Compare training course aimed at improving employability across different regions and educational institutions. Identify best practices, gaps, and unique elements that can be adapted to enhance the training programs for college students in Liuzhou.

2. Case Studies on Employability:

Conduct case studies focusing on the impact of training course on the employability of college students in Liuzhou. Examine how these programs affect job readiness, career development, and overall employability.

3. Effective Pedagogical Approaches for Employability Training Course:

Explore various pedagogical approaches and teaching methods that effectively enhance employability through training course. Investigate the use of experiential learning, collaborative projects, and technology to support the development of key employability skills.

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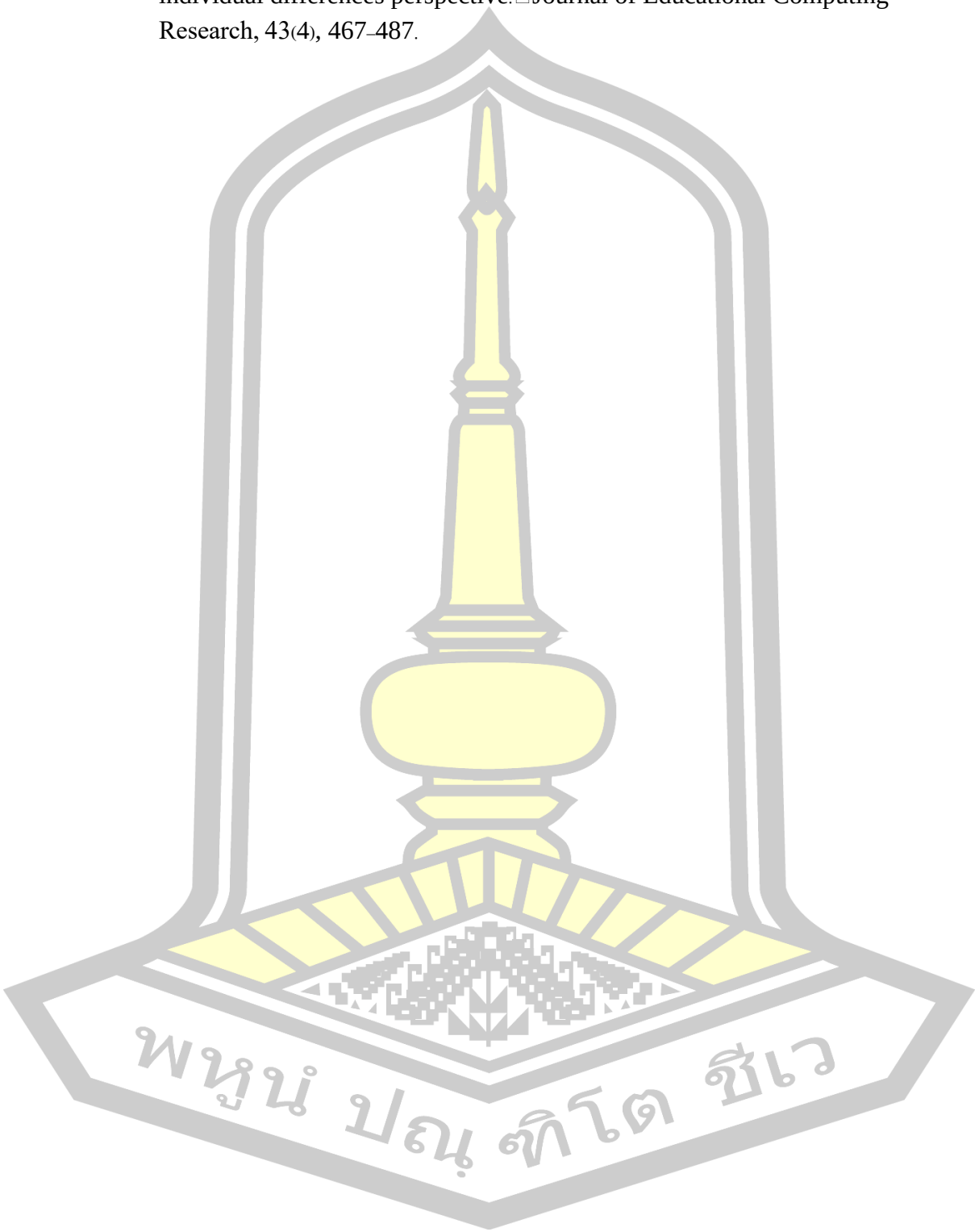


APPENDIX A

An Example of a Training Course Teaching Plan to Improve College Students' Employability

Teaching Plan
Section 1 Teamwork Skills

Teaching Content

1.1 Basic Principles of Teamwork

1.2 Team Roles and Responsibility Allocation

1.3 Techniques for Enhancing Team Collaboration

1.4 Project： Online Snail Noodle Entrepreneurship Competition

Teaching objectives

1. Learn the basic principles of teamwork to effectively manage team dynamics and foster collaboration.

2. Understand team roles and responsibility allocation to optimize team performance and efficiency.

3. Apply techniques for enhancing team collaboration to improve overall group productivity and cohesion.

4. Gain practical experience in teamwork by participating in the "Online Snail Noodle Entrepreneurship Competition," implementing teamwork skills in a real business setting.

Academic analysis

Learning Basics	Through the application of Social Cognitive Theory, Constructivist Learning Theory, and Experiential Learning Theory, students are initially introduced to the basic concepts and related theories of teamwork skills. They then apply the concepts and methods of teamwork skills in real-life situations, thereby deepening their understanding and mastery of teamwork skills.
Learning Habit	Basic Knowledge: Through preliminary study, students gain a better understanding of the basic concepts and related theories of teamwork skills. Learning Habits: Students exhibit good learning styles during the learning process. Most students think actively and have a strong desire to participate and perform. They tend to prefer experiential and interactive teaching methods to learn and master the skills and principles of teamwork skills.

Key points and difficulties in teaching

Teaching Key Points	Understanding the core principles of teamwork skills, recognizing the importance of team roles, and learning how to apply these principles in real-world situations.
Teaching Difficulties	Overcoming individualistic mindsets, addressing conflicts within the team, and fostering a spirit of collaboration and trust among team members.

Teaching Method

Based on the outlined teaching content, objectives, and academic characteristics, this training course primarily employs a project-based teaching method, focusing on integrating experiential learning and practical application. It emphasizes participation in activities and solving real-world problems. This approach maximizes the teacher's role in guiding the learning process while encouraging students to engage in independent, collaborative, and inquiry-based learning, making them active key participants in their educational experience.

Teaching Process (8 hours in total)

Before class: introduce learning content through video introduction

Teaching Session	Teaching Time	Teaching activities		Design intentions and teaching methods
		Teacher activities	Student Activities	
Assign study task	2 days before class	1. The teacher provides a learning guide on teamwork skills, covering effective communication, role allocation, and conflict resolution. 2. The teacher organizes academic investigations for students and requires them to complete a survey questionnaire to understand students' awareness and attitudes towards teamwork skills. 3. Through self-evaluation, students are provided with a preliminary understanding of the practical application of teamwork skills in employment.	1. Based on the learning guide provided by the teacher, students form small groups and engage in team role-playing activities, simulating teamwork skills scenarios in the workplace. 2. Students complete the	1. The learning guide, through group activities, allows students to experience the importance of teamwork skills in practice, thereby improving their team awareness and collaboration skills. 2. Through knowledge testing and survey questionnaires, the teacher can directly

		4. The teacher designs a team project, requiring students to complete it in groups. The teacher provides the project theme, and students need to jointly develop a plan, divide tasks, and present the final outcome.	survey questionnaire independently or as a team to understand their strengths and weaknesses in teamwork skills, and seek ways to improve. 3. In the teamwork skills process, students practice teamwork skills skills such as division of labor, communication, and collaboration, and fill out a reflection scale to record the teamwork skills process and outcomes. 4. Conduct research on relevant project information in advance.	understand the preview effect of students' teamwork skills, and organize subsequent course based on the actual situation of the students. 3. Through self-evaluation and teamwork skills, students can understand the practical significance and application of teamwork skills in employment, and seek ways to improve. The teacher determines the teaching strategies and methods based on the actual situation and needs of the students, and implements precise policies to improve students' teamwork skills and employability.
In class improving teamwork sills through project-based teaching				
Course import	10 minutes	1. Play the short video "Google - The Moonshot Factory," which showcases how Google's innovation department drives disruptive	1. Watch the video to understand the teamwork skills	**Design Intentions:** 1. Introducing real-world case videos helps students

		technological innovations through team collaboration. This video not only demonstrates the practical application of teamwork skills but also inspires students to harness the power of collaboration to achieve greater success when facing professional challenges. 2. After the video, guide a discussion among students about the teamwork skills scenarios depicted, especially focusing on how collaboration helped overcome challenges in the workplace. Ask the question, "What role do you think teamwork skills played in the success of these cases?"	scenarios and related workplace cases presented. 2. After viewing, reflect on the importance of teamwork skills in the modern workplace, participate in discussions, and share thoughts and feelings, particularly comparing the examples with their past experiences in team collaboration.	experience the practical application of teamwork skills in real workplace settings, stimulating their interest in collaboration and connecting it with the actual needs of their future careers. 2. Selecting vivid and representative case videos allows students to quickly grasp the core concepts of teamwork skills and deepen their understanding through discussion. **Teaching Methods:** Case Method and Guided Discussion Method.
Theoret-ical lectures	20 minutes	1.1Basic Principles of Teamwork Definition and importance of teamwork -Definition and importance of teamwork -Key principles: Communication, Trust, Mutual Respect, Common Goals, Accountability 1.2Team Roles and Responsibility Allocation -Different team roles: Leader, Facilitator, Recorder, Timekeeper, etc.	Based on the teacher's lecture, students reflect on and organize their understanding of the key concepts of teamwork skills, try to explain these concepts in their own words, and share and	**Design Intent:** Through the teacher's explanation of teamwork skills concepts, help students build a basic cognitive framework for teamwork skills, providing theoretical support for practical applications and

		-The importance of clear role definitions -Strategies for assigning roles based on individual strengths and team needs 1.3 Techniques for Enhancing Team Collaboration -Communication skills: active listening, constructive feedback, conflict resolution -Collaborative tools and technologies Building team cohesion and morale	discuss them in class.	case analysis in subsequent course. **Teaching Method**: Lecture Method.
Learning feedback before class	30 minutes	1. Based on the pre-class assignment, invite each group to present and share the examples they discovered about teamwork skills through self-directed learning, using Chinese for their presentations. 2. Organize the representatives of each group to present in turn, ensuring that each group has the opportunity to share their insights. 3. Guide students to analyze and evaluate the presentations of other groups, encouraging them to provide feedback from different perspectives, discussing the strengths and weaknesses of the presentations.	1. Each group's representative shares the results of their pre-class learning, specifically demonstrating how teamwork skills was used to solve problems or achieve success, and explaining the teamwork skills spirit embodied in these examples. 2. Students listen to the presentations of other groups, learn about different teamwork skills approaches and	**Design Intent**: The combination of online self-directed learning and offline presentation and sharing deepens students' understanding of teamwork skills, improves their analytical and expressive skills, and lays a solid foundation for the learning of subsequent course content. **Teaching Methods**: Discussion and Review Methods.

			methods, evaluate the presentations, provide feedback, and learn from each other's strengths and weaknesses.	
Teaching the course	30 minutes	**1.4 Project： Online Snail Noodle Entrepreneurship Competition** 1. Course Introduction and Project Overview 1. 1Explanation of the Snail Rice Noodle Market Background and Industry Trends In recent years, the snail rice noodle market has expanded rapidly, becoming a popular local specialty snack among young people and office workers, with a market size reaching 20 billion yuan, primarily driven by online instant products and takeout services. The growth of the market has been fueled by brand development and technological innovation, though the industry faces fierce competition and food safety challenges. Additionally, the exploration of international markets and the trend toward health and environmental sustain skills present new opportunities for the snail rice noodle industry. 1.2 Project Tasks, Rules, and Processes, Including Group Assignments **Project Title**: Snail Rice Noodle Online Marketing Project **Task Description**: Each group is required to conduct a marketing	Listen to the course objectives and project introduction to understand the market background. Form teams and discuss initial project ideas.	**Design Intent**: By introducing the market background and project rules, students will gain a clear understanding of the practical significance and operational process of the project, stimulating their learning interest and establishing a foundation for teamwork skills. **Teaching Methods**: Lecture, Q&A

		campaign for snail rice noodles on a real e-commerce platform or social media. Students will go through the complete marketing process, from market research and strategy formulation to product launch, promotion, and performance evaluation. **Project Objectives**: To experience and master e-commerce marketing and promotion skills. To improve teamwork skills and communication skills. To strengthen analytical skills and the skills to solve practical problems. Group Assignments: Groups will consist of10 students, either self-organized or randomly assigned by the instructor. **Process**: **Market Research**: Each group must conduct market research, analyzing target customers and competitors. **Strategy Formulation**: Develop marketing strategies, including product positioning, pricing strategies, promotional activities, etc. **Product Launch**: Publish the product page on the selected platform, designing product descriptions and advertising content. **Marketing Promotion**: Promote the product through social media, advertising campaigns, and other methods. **Performance Evaluation**: Collect sales data and user feedback,		

		analyzing the effectiveness of the marketing efforts.		
	45 minutes	2. Explanation of Market Research Methods and Data Analysis Tools (5 minutes): 2.1 Market Research Methods: **Survey:** Use online survey tools such as Survey Monkey or Google Forms to design questionnaires targeting specific customers, gathering information about customer preferences, purchasing behavior, and demand for snail rice noodles. **Competitor Analysis:** Utilize online tools like Similar Web or SEM rush to analyze the market performance of competing brands, customer feedback, and their sales data on e-commerce platforms. **Social Media Analysis:** Monitor relevant keywords related to snail rice noodles using social media monitoring tools like Hootsuite or BuzzSumo to understand consumer discussion trends, satisfaction levels, and product reviews. 2.2 Data Analysis Tools: **Excel/Google Sheets:** Used for organizing and analyzing research data, including data cleaning and statistical analysis such as averages and percentages. **Tableau/Power BI:** Used for visualizing research results, creating charts and dashboards to help students better understand the market situation.	1. Conducting Market Research Using the Provided Methods and Tools: **Data Collection:** Each group, following the methods learned, will use surveys, competitor analysis, and social media monitoring to gather data on target customers, competitors, and market demand. 2.Organizing Research Results: **Data Organization:** Collected data will be organized in Excel or Google Sheets for initial analysis, such as calculating averages and proportions. **Market Analysis Report:** Using Tableau or Power BI, the	**Design Intent:** By engaging in practical market research, students will acquire data collection and analysis skills, developing their skills to formulate marketing strategies based on data. By providing standardized tools and real-time support, each group will be able to effectively complete their research tasks and produce a market analysis report with practical value. **Teaching Methods:** Case-Based Teaching, Collaborative Learning

		2.3 Guiding Students in Conducting Online Market Research and Providing Necessary Resources and Providing Online Resources: **Survey Design Templates**: Offer standardized survey templates to help students quickly design questionnaires that meet the research objectives. **Tool Usage Guides**: Provide user manuals or video tutorials for various online research and data analysis tools, ensuring students can proficiently use these tools. **Real-Time Guidance**: Problem Solving: Address any questions students encounter during the market research process, helping them overcome technical and methodological challenges. **Research Direction Suggestions**: Offer personalized suggestions based on each group's progress in market research to ensure the accuracy and relevance of the data.	research data will be visualized, and an initial market analysis report will be drafted, covering key aspects such as market size, customer demand, and competitive landscape.	
	65 minutes	3. Formulating Marketing Strategies and Preparing for Product Launch 3.1 Explain the Methodology for Formulating Marketing Strategies **Target Market Positioning**: 1. Define the demographics, psychographics, and behavioral characteristics of the target market. 2. Use segmentation techniques to identify specific customer segments	1. Group Discussion and Formulation of Specific Marketing Strategies: **Target Market Positioning**: Discuss and define the target customer	**Design Intent**: The goal is to help students translate market research findings into practical marketing strategies and improve their project execution skills through

		that are most likely to purchase snail rice noodles. **Product Pricing**: 1. Discuss various pricing strategies such as cost-plus pricing, competitive pricing, and value-based pricing. 2. Consider factors like production costs, competitor pricing, and perceived customer value. **Promotion Strategies**: 1. Outline different promotional tactics including discounts, online advertisements, social media campaigns, influencer partnerships, and email marketing. 2. Emphasize the importance of creating appealing promotional messages that resonate with the target audience. **Channel Selection**: 1. Explain the different channels available for selling snail rice noodles, such as e-commerce platforms, social media, and physical stores. 2. Discuss the pros and cons of each channel and the importance of an omnichannel approach for maximizing reach and sales. 3.2 Guide Students in Developing Marketing Strategies and Preparing Product Pages **Marketing Strategy Development**: Provide real-time feedback and suggestions as students work on their marketing strategies. Ensure each group addresses the key components: market positioning,	segments for the snail rice noodles. Determine the unique selling points (USPs) and key messages to attract these segments. **Product Pricing**: Calculate appropriate pricing based on research and competitive analysis. Decide on any introductory offers or discounts to attract initial customers. **Promotion Strategies**: Plan promotional activities, including which social media platforms and advertising methods to use. Develop a timeline for promotional events and content releases. **Channel Selection**: Choose the primary sales	hands-on activities. By guiding them in the creation of comprehensive marketing plans and preparing product pages, students will gain a deeper understanding of the entire marketing process from research to execution. **Teaching Methods**: Case-Based Teaching、Collaborative Learning

		pricing, promotion, and channel selection. **Product Page Preparation**: Assist students in creating compelling online product pages. Guide them in designing product descriptions, setting prices, selecting high-quality images, and crafting promotional content.	channels and consider integrating multiple channels for broader reach. 2. Preparation of the Online Sales Page for Snail Rice Noodles: **Product Description**: Write detailed and enticing descriptions highlighting the unique flavors and ingredients of the snail rice noodles. **Pricing**: Clearly display the product price, including any discounts or special offers. **Images**: Select or create high-quality images that showcase the product attractively. Promotional **Content**: Design banners, ads, and other promotional materials to be	

			used on the product page and across social media.	
	80 minutes	4. Product Launch and Marketing Promotion 4.1 Explain Key Considerations for Online Sales and Promotion, and Platform Operation Processes **Key Considerations:** Product Listings: Emphasize the importance of accurate and compelling product descriptions, high-quality images, and clear pricing. Highlight the need for consistency across all sales platforms. **SEO Optimization:** Discuss how to optimize product titles, descriptions, and tags with relevant keywords to improve visibility on search engines and within the platform. **Customer Engagement:** Stress the importance of timely responses to customer inquiries, managing reviews, and maintaining a positive brand image. 4.2 Platform Operation Processes: **Product Uploading:** Provide a step-by-step guide on how to upload the snail rice noodle products onto selected e-commerce platforms (e.g., Taobao, JD.com) or social media (e.g., WeChat, Instagram). **Payment and Shipping Settings:** Explain how to set up payment	1. Product Launch and Implementation of Marketing Strategies: **Product Upload:** Each group will upload their snail rice noodle products to the selected e-commerce platform or social media, ensuring that all information is accurate and appealing to potential customers. **Marketing Execution:** Implement the previously developed marketing strategies, including social media promotions, paid advertisements, and engagement tactics. Use promotional tools like discount offers,	**Design Intent:** This session is designed to give students hands-on experience in launching a product online and executing a marketing campaign. By directly engaging with the platforms and monitoring real-time data, students will develop practical skills in online sales management and digital marketing. This will also teach them how to adapt their strategies based on performance metrics, preparing them for real-world challenges in e-commerce and marketing. **Teaching Methods:** Practical Demonstration、Experiential Learning

		options, manage inventory, and configure shipping settings to ensure a smooth transaction process. **Promotional Tools**: Introduce platform-specific promotional tools, such as discount codes, flash sales, and pay-per-click (PPC) advertising, explaining how to use them effectively. 4.3 Guide Students in Launching Products on Selected E-commerce Platforms or Social Media and Monitoring Promotion Effectiveness **Product Launch**: Assist each group in uploading their product to the chosen platform, ensuring all elements (descriptions, images, pricing) are correctly set up. Provide real-time support to troubleshoot any issues related to the platform's operation or technical aspects. **Marketing Promotion**: Guide students in implementing their pre-planned marketing strategies, such as social media promotion, PPC advertising, or influencer partnerships. Encourage students to use analytics tools provided by the platforms to monitor key performance indicators (KPIs) such as traffic, conversion rates, and sales figures. **Effectiveness Monitoring**: Instruct students on how to analyze sales data and marketing	bundling deals, or limited-time sales to attract customers. 2. Real-Time Monitoring of Sales Data and Analysis of Promotion Effectiveness: **Sales Data Monitoring**: Each group will monitor their sales data in real-time using the analytics tools provided by the platform, focusing on metrics such as number of visitors, conversion rates, and total sales. **Promotion Analysis**: Analyze the effectiveness of the marketing strategies based on the data collected. Identify which tactics are driving the most traffic and conversions.	

		metrics to assess the success of their promotional efforts. Offer advice on adjusting strategies based on real-time data, such as increasing ad spend on successful campaigns or tweaking underperforming promotions.	Make data-driven adjustments to the marketing strategy, such as reallocating budget to more successful channels or altering promotional content to better resonate with the target audience.	
	30 minutes	5. Marketing Plan Presentation and Feedback 5.1 Organize Student Presentations of Their Marketing Plans and Sales **Presentation Setup**: Allocate time for each group to present their marketing strategies, including target market positioning, product pricing, promotion strategies, and channel selection. Ensure students also showcase their sales data and any metrics tracked during their marketing campaigns (e.g., website traffic, conversion rates, sales figures). **Facilitate Presentations**: Guide the flow of presentations, ensuring each group stays within the allotted time. Encourage the use of visual aids such as slides, charts, and graphs to make their data and strategies clear and engaging. 5.2 Provide Feedback and Analyze Group Performance	1. Group Presentation of Marketing Strategies and Actual Sales Data: **Marketing Strategy Presentation**: Each group presents their developed marketing strategies, detailing their approaches to market positioning, pricing, promotion, and channel selection. Share the implementation process and highlight key decisions made	**Design Intent**: This session is designed to help students reflect on their marketing efforts, understand their strengths and weaknesses, and learn from the experiences of their peers. The process of presenting and receiving feedback encourages critical thinking and continuous improvement, essential skills in marketing and project management. By analyzing their performance and receiving constructive criticism, students can better understand their

		Feedback Session: After each presentation, provide constructive feedback focusing on the strengths and weaknesses of each marketing plan. Highlight successful elements, such as effective use of promotional tools or innovative strategies that yielded positive results. **Suggestions for Improvement**: Offer specific advice on areas that need improvement, such as refining target market positioning, adjusting pricing strategies, or improving promotional content. Encourage other students to contribute their observations and suggestions, fostering a collaborative learning environment.	during the campaign. **Sales Data and Metrics**: Present the actual sales data collected during the marketing campaign, including metrics such as number of visitors, conversion rates, and total sales. Discuss what worked well and what didn't, sharing both successes and challenges faced. 2. Receive and Record Feedback **Feedback Reception**: Listen attentively to the feedback from the teacher and peers, taking notes on the comments and suggestions. Engage in a discussion to clarify any points and gain deeper insights into areas for improvement.	competencies and areas for development. **Teaching Methods**: Demonstration Method、Feedback Method

			Reflection and Documentation: Reflect on the feedback received, considering how to apply it to future projects. Document the key takeaways and action items for improvement, creating a plan for improving their marketing strategies andteamwork skills skills.	
	30 minutes	6. Project Summary and Reflection 6.1 Summarize the Highlights and Issues Encountered During Project Implementation, Emphasizing the Importance of teamwork skills **Project Highlights**: Review key successes and innovations achieved throughout the project, such as effective marketing strategies, successful product launches, and team collaboration. **Identify Issues**: Discuss challenges faced during the project, including any difficulties in communication, execution, or decision-making. Emphasize how these challenges impacted the overall project and what could be learned from them. **Importance of teamwork skills**: Stress the crucial role of teamwork skills in achieving project	1. Reflect on the entire project process, identifying the strengths and weaknesses in teamwork skills. 2. Share personal reflection results and propose improvement plans for future practice.	**Design Intent**: Through summary and reflection, help students systematically review the entire project, further improving their teamwork skills and practical marketing skills. **Teaching Methods**: Reflection Method、Summary Method

		goals, highlighting examples of effective collaboration and areas where teamwork skills could be improved. 6.2 Guide Students in Completing a Project Reflection Form, Summarizing Individual and Team Performance **Reflection Form Completion**: Provide students with a structured reflection form to assess both their personal contributions and the team's overall performance. Encourage honest self-assessment and identification of strengths, weaknesses, and areas for growth. **Facilitate Reflection**: Offer guidance on how to critically analyze the project experience, focusing on key aspects such as problem-solving, communication, and task management. 6.3 Assign Follow-up Learning Tasks and Encourage Students to Apply What They Have Learned to Future Practices **Follow-up Tasks**: Assign tasks or projects that require students to apply the marketing concepts andteamwork skills skills they have developed. **Encouragement for Future Application**: Motivate students to take the lessons learned from this project and implement them in future academic or professional endeavors.		

		Discuss how these experiences can be valuable in real-world scenarios, encouraging continuous learning and improvement.		
Conclusion	10 minutes	Summary of knowledge points, class summary, and after-class homework assignments	Listen to the teacher	Have a systematic understanding of the entire teached content
After class Experience in teamwork skills activities				
Assignment		Select a successful or unsuccessful teamwork skills case (it can be from the course or another experience) and conduct an analysis. Submit the case analysis document in PDF format to the designated learning platform.	Conduct case analysis based on materials provided by the teacher	Consolidate and deepen the knowledge learned.

7. Teaching evaluation

The assessment of this unit is divided into pre-class assessment, in-class assessment, and post-class assessment. Company experts and teachers evaluate individual students and student groups. The assessment objectives include low-level goals achieved before class, mid-level goals achieved during class, and high-level goals achieved after class. The assessment content covers case studies, participation in project activities, and their effectiveness. Assessment methods include questionnaires, project presentations, and case discussions.

Evaluation Section	Evaluation objectives	Evaluation content	Evaluation method	Evaluation subject	Perform-ance record
30% before class	Understand the importance of teamwork skills.	Understand the basic concepts and skills of teamwork skills.	Case Sharing	Teacher	10 points
	Establish a positive learning attitude.	Participate in completing an academic survey questionnaire.	Participation in the survey.	Teacher	10 points

40% in class	Gain practical experience in teamwork by participating in the "Online Snail Noodle Entrepreneurship Competition," implementing teamwork skills in a real business setting.	Understand the role of teamwork skills in the workplace.	Evaluation by Industry Experts; Evaluation by Teachers	Teacher, Industry Experts	50 points
30% after class		Understanding the application of teamwork skills in the workplace.	Finish assignment		20 points
		Knowledge application	Participate in online discussions		10 points

8. Teaching reflection

1. Role Clarity and Allocation

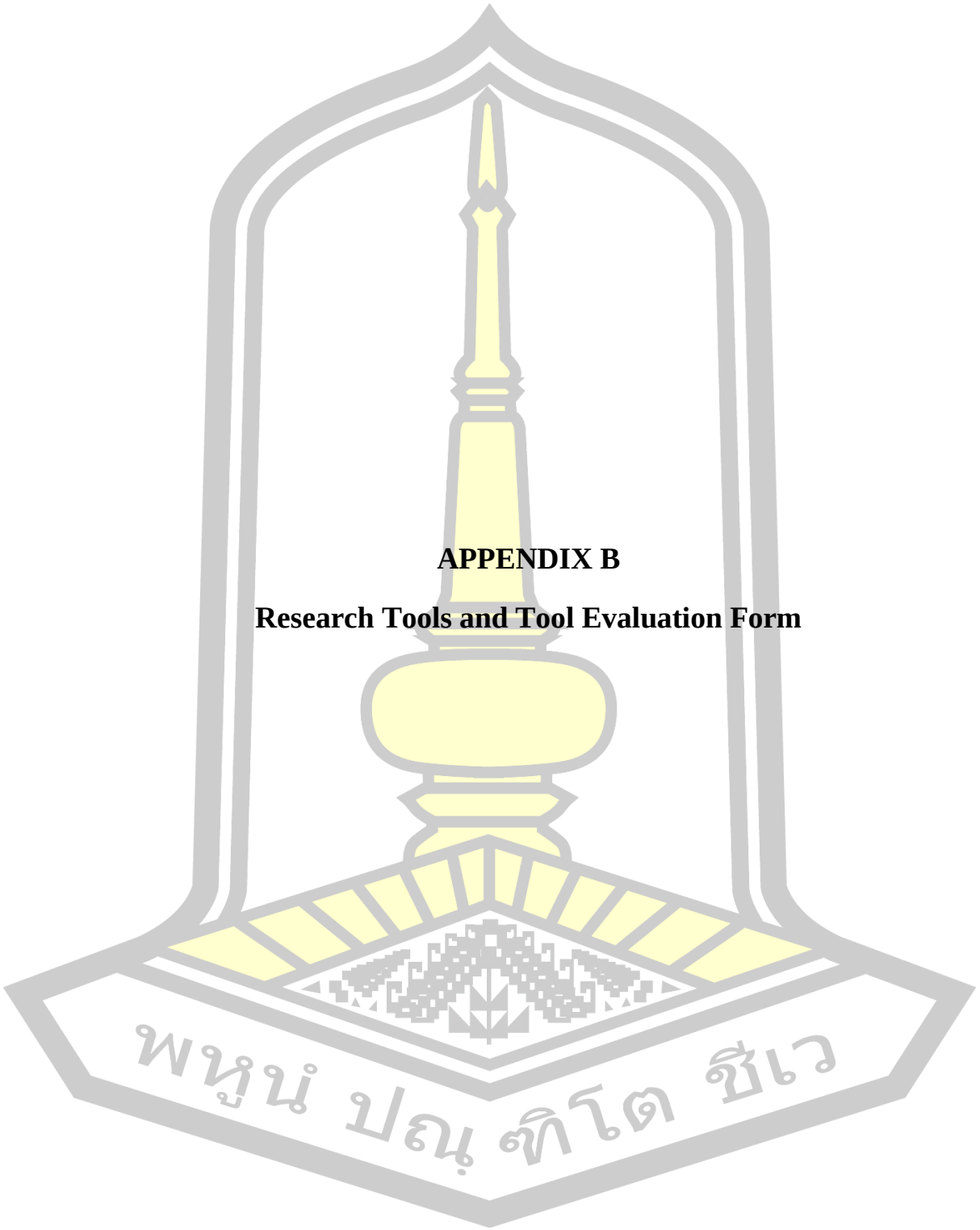
One key reflection is the importance of clear role allocation within teams. Although assigning specific roles was beneficial, some students felt that their responsibilities were not well-defined. Future iterations should provide more detailed role descriptions and training to ensure everyone understands their tasks and can contribute effectively.

2. Continuous Feedback and Support

The regular feedback sessions were crucial for student development, allowing them to reflect and improve continuously. However, it became evident that ongoing support from mentors and industry experts could further enhance this process. Providing more structured and accessible support throughout the competition would help students navigate challenges and maximize their learning.

3. Practical Application and Real-World Relevance

The competition's real-world context significantly boosted student engagement and skill application. However, increasing the number of practical, hands-on sessions could further enhance learning outcomes. Incorporating more real-world simulations and case studies would provide students with additional opportunities to apply their skills in diverse scenarios, thereby deepening their understanding and readiness for the workplace.



APPENDIX B

Research Tools and Tool Evaluation Form

College Student Employability Questionnaire (Student)

1. Gender

A. Male B. Female

2. Your school is

A. School of Mechanical and Electrical Engineering

B. School of Automotive Engineering

C. School of Trade and Tourism Management

D. School of Art

E. School of Electronic Information Engineering

F. School of Environment and Food Engineering

G School of Finance and Logistics Management

3. Source of students

A.2023 Graduates B. 2024 Graduates

4. How do you evaluate your skills? 1=Completely dissatisfied 2=Dissatisfied 3=General 4=Satisfaction 5=Very satisfied					
个人性格特质 Personal character traits	1	2	3	4	5
就业人格特质 Employment personality traits	1	2	3	4	5
职业管理能力 Career management skills	1	2	3	4	5
职业认同 Professional identity	1	2	3	4	5
团队合作能力 Teamwork skills	1	2	3	4	5
办公工作基本技能 Basic office skills	1	2	3	4	5
人际交往能力 Interpersonal skills	1	2	3	4	5
独立工作能力 Independent working skills	1	2	3	4	5

解决问题能力 Problem-solving skills	1	2	3	4	5
执行能力 Execution skills	1	2	3	4	5
创新创业能力 Innovation and Entrepreneurship skills	1	2	3	4	5
实践能力 Practical skills	1	2	3	4	5
个人管理能力 Personal management skills	1	2	3	4	5
求职能力 Job-hunting skills	1	2	3	4	5
适应能力 Adapt skills	1	2	3	4	5
学习能力 Learning skills	1	2	3	4	5
资源整合利用能力 Resource integration and utilization skills	1	2	3	4	5
信息管理能力 Information management skills	1	2	3	4	5
理解判断能力 Comprehension and judgment skills	1	2	3	4	5
领导能力 Leadership skills	1	2	3	4	5
沟通与协调能力 Communication and Coordination	1	2	3	4	5
社会资本（毕业院校、社会关系等） Social capital (graduate school, social relations, etc.)	1	2	3	4	5
社会经济因素 Socio-economic factors	1	2	3	4	5
学业人力资本（学业成绩、证书等）Academic human capital (academic grades, certificates, etc.)	1	2	3	4	5
专业技能 Professional skills	1	2	3	4	5
专业知识 Professional knowledge	1	2	3	4	5

Evaluation form for experts to check the validity of Questionnaire for College Students: Employability (Student) Status

Explanation

1. This assessment is for experts to check that each question is appropriate.

Is it consistent with the objectives? The evaluation criteria are as follows:

Scoring +1 means that you are sure that the questions meet the objectives.

A score of 0 means not sure that the question meets the objective.

A score of -1 means that you are sure that the question does not meet the objective.

2. In this research The employability test is applied the employability Inventory developed by Wang Feng (2018).

	Questions	Evaluation score			Comments or suggestions
		+1	0	-1	
Section 1: Personal Information	1.1 Gender: Male / Female				
	1.2 College				
	1.3 Source of students： Recent Graduates / Previous Graduates				
Section 2: How do you evaluate your skills?	Personal character traits				
	Employment personality traits				
	Career management skills				
	Professional identity				
	Teamwork skills				
	Basic office skills				
	Interpersonal skills				
	Independent working skills				
	Problem-solving skills				
	Execution skills				
	Innovation and entrepreneurship skills				

Practical skills					
Personal management skills					
Job-hunting skills					
Adapt skills					
Learning skills					
Resource integration and utilization skills					
Information management skills					
Comprehension and judgment skills					
Leadership skills					
Communication and coordination skills					
Social capital (graduating institutions, social relationships, etc.)					
Socio-economic factors					
Academic human capital (academic performance, certificates, etc.)					
Professional skills					
Professional knowledge					

Additional suggestions:

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Signed..... Assessor

(.....)

Position.....

Date.....Month.....Year.....

The IOC index results of the questionnaire content on testing college students' employability (Student)

Content	Expert 1	Expert 2	Expert 3	Expert4	Expert 5	Total score	IOC	Result
Gender	+1	+1	+1	+1	+1		1.00	Available
School	+1	+1	+1	+1	+1		1.00	Available
Source of students	+1	+1	+1	+1	+1		1.00	Available
Personal character traits	+1	+1	+1	+1	+1		1.00	Available
Employment personality traits	+1	0	+1	+1	+1		0.80	Available
Career management skills	+1	+1	+1	+1	+1		1.00	Available
Professional identity	+1	+1	+1	0	+1		0.80	Available
Teamwork skills	+1	0	0	+1	+1		0.60	Available
Basic office skills	+1	+1	+1	+1	+1		1.00	Available
Interpersonal skills	+1	+1	+1	+1	+1		1.00	Available
Independent working skills	+1	+1	+1	+1	+1		1.00	Available
Problem-	+1	0	+1	+1	+1		0.80	Availab

solving skills								le
Executio n skills	+1	+1	+1	+1	+1		1.00	Availab le
Innovatio n and entrepren eurship skills	+1	+1	+1	+1	+1		1.00	Availab le
Practical skills	+1	+1	+1	+1	+1		1.00	Availab le
Personal manage ment skills	+1	+1	+1	+1	+1		1.00	Availab le
Job-hunting skills	+1	+1	+1	+1	+1		1.00	Availab le
Adapt skills	+1	+1	+1	+1	+1		1.00	Availab le
Learning skills	+1	+1	+1	+1	+1		1.00	Availab le
Resource integratio n and utilizatio n skills	+1	+1	+1	+1	+1		1.00	Availab le
Informati on manage ment skills	+1	+1	+1	+1	+1		1.00	Availab le
Compreh ension and judgment skills	+1	+1	+1	+1	+1		1.00	Availab le
Leadersh	+1	+1	+1	+1	+1		1.00	Availab

ip skills								le
Communication and coordination skills	+1	0	+1	+1	+1		0.80	Available
Social capital (graduating institutions, social relationships, etc.)	+1	+1	+1	+1	+1		1.00	Available
Socio-economic factors	+1	+1	+1	+1	+1		1.00	Available
Academic human capital (academic performance, certificates, etc.)	+1	+1	+1	+1	+1		1.00	Available
Professional skills	+1	+1	+1	+1	+1		1.00	Available
Professional knowledge	+1	+1	+1	+1	+1		1.00	Available
Total							0.95	

College Student Employability Questionnaire (Companies)

1. Gender

A. Male B. Female

2.贵单位所在地区The location of your unit

A. Beijing, Shanghai, Guangzhou and Shenzhen B Provincial capital

C Ordinary city

3.贵单位的单位性质Unit nature

A 国有企业State-owned companies B 民营企业 Private companies

C 外资企业Foreign companies D 合资企业Joint venture

E 政府机构及事业单位 Government agencies and Public institutions

4. How do you evaluate your skills? 1=Completely dissatisfied 2=Dissatisfied 3=General 4=Satisfaction 5=Very satisfied					
个人性格特质 Personal character traits	1	2	3	4	5
就业人格特质 Employment personality traits	1	2	3	4	5
职业管理能力 Career management skills	1	2	3	4	5
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办公工作基本技能 Basic office skills	1	2	3	4	5
人际交往能力 Interpersonal skills	1	2	3	4	5
独立工作能力 Independent working skills	1	2	3	4	5
解决问题能力 Problem-solving skills	1	2	3	4	5
执行能力 Execution skills	1	2	3	4	5
创新创业能力 Innovation and Entrepreneurship skills	1	2	3	4	5
实践能力 Practical skills	1	2	3	4	5
个人管理能力 Personal management skills	1	2	3	4	5

求职能力 Job-hunting skills	1	2	3	4	5
适应能力 Adapt skills	1	2	3	4	5
学习能力 Learning skills	1	2	3	4	5
资源整合利用能力 Resource integration and utilization skills	1	2	3	4	5
信息管理能力 Information management skills	1	2	3	4	5
理解判断能力 Comprehension and judgment skills	1	2	3	4	5
领导能力 Leadership skills	1	2	3	4	5
沟通与协调能力 Communication and Coordination	1	2	3	4	5
社会资本（毕业院校、社会关系等） Social capital (graduate school, social relations, etc.)	1	2	3	4	5
社会经济因素 Socio-economic factors	1	2	3	4	5
学业人力资本（学业成绩、证书等）Academic human capital (academic grades, certificates, etc.)	1	2	3	4	5
专业技能 Professional skills	1	2	3	4	5
专业知识 Professional knowledge	1	2	3	4	5

Evaluation form for experts to check the validity of Questionnaire for College Students: Employability (Companies) Status

Explanation

1. This assessment is for experts to check that each question is appropriate.

Is it consistent with the objectives? The evaluation criteria are as follows:

Scoring +1 means that you are sure that the questions meet the objectives.

A score of 0 means not sure that the question meets the objective.

A score of -1 means that you are sure that the question does not meet the objective.

2. In this research The employability test is applied the employability Inventory developed by Wang Feng (2018).

	Questions	Evaluation score			Comments or suggestions
		+1	0	-1	
Section 1: Personal Information	1.1 Gender: Male / Female				
	1.2 The location of your unit				
	1.3 Unit nature				
Section 2: How do you evaluate your skills?	Personal character traits				
	Employment personality traits				
	Career management skills				
	Professional identity				
	Teamwork skills				
	Basic office skills				
	Interpersonal skills				
	Independent working skills				
	Problem-solving skills				
	Execution skills				
	Innovation and entrepreneurship skills				
	Practical skills				
	Personal management skills				

	Job-hunting skills				
	Adapt skills				
	Learning skills				
	Resource integration and utilization skills				
	Information management skills				
	Comprehension and judgment skills				
	Leadership skills				
	Communication and coordination skills				
	Social capital (graduating institutions, social relationships, etc.)				
	Socio-economic factors				
	Academic human capital (academic performance, certificates, etc.)				
	Professional skills				
	Professional knowledge				

Additional suggestions:

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Signed..... Assessor

(.....)

Position.....

Date.....Month.....Year.....

The IOC index results of the questionnaire content on testing college students' employability (Companies)

Content	Expert 1	Expert 2	Expert 3	Expert4	Expert 5	Total score	IOC	Result
Gender	+1	+1	+1	+1	+1	5	1.00	Available
The location of your unit	+1	+1	+1	+1	+1	5	1.00	Available
Unit nature	+1	+1	+1	+1	+1	5	1.00	Available
Personal character traits	+1	+1	+1	+1	+1	5	1.00	Available
Employment personality traits	+1	0	+1	+1	+1	4	0.80	Available
Career management skills	+1	+1	+1	+1	+1	5	1.00	Available
Professional identity	+1	+1	+1	0	+1	4	0.80	Available
Teamwork skills	+1	0	0	+1	+1	3	0.60	Available
Basic office skills	+1	+1	+1	+1	+1	5	1.00	Available
Interpersonal skills	+1	+1	+1	+1	+1	5	1.00	Available
Independent working skills	+1	+1	+1	+1	+1	5	1.00	Available
Problem-solving skills	+1	0	+1	+1	+1	4	0.80	Available
Execution skills	+1	1	+1	+1	+1	5	1.00	Available
Innovation and entrepreneurship skills	+1	1	+1	+1	+1	5	1.00	Available
Practical skills	+1	1	+1	+1	+1	5	1.00	Available
Personal management skills	+1	1	+1	+1	+1	5	1.00	Available
Job-hunting skills	+1	+1	+1	+1	+1	5	1.00	Available
Adapt skills	+1	+1	+1	+1	+1	5	1.00	Available
Learning skills	+1	+1	+1	+1	+1	5	1.00	Available
Resource integration and utilization skills	+1	+1	+1	+1	+1	5	1.00	Available
Information management skills	+1	+1	+1	+1	+1	5	1.00	Available
Comprehension and judgment skills	+1	+1	+1	+1	+1	5	1.00	Available

Leadership skills	+1	+1	+1	+1	+1	5	1.00	Available
Communication and coordination skills	+1	0	+1	+1	+1	4	0.80	Available
Social capital (graduating institutions, social relationships, etc.)	+1	+1	+1	+1	+1	5	1.00	Available
Socio-economic factors	+1	+1	+1	+1	+1	5	1.00	Available
Academic human capital (academic performance, certificates, etc.)	+1	+1	+1	+1	+1	5	1.00	Available
Professional skills	+1	+1	+1	+1	+1	5	1.00	Available
Professional knowledge	+1	+1	+1	+1	+1	5	1.00	Available
Total							0.95	

Semi-structured Interview on the Factors Influencing Companies' Employment Cap skills Demands for Graduates of Liuzhou Vocational Technical College Outline

The semi-structured interview outline regarding the factors influencing the employability of graduates from Liuzhou Vocational and Technical College is as follows:

Introduction

• Greet the interviewee and express appreciation for their participation.

• Briefly explain the purpose of the interview: to gather insights and feedback on the factors influencing the employability of graduates from Liuzhou Vocational and Technical College.

1. Basic Information about the Company:

Could you please introduce yourself and the department you work in?

How many years of experience do you have in recruitment and training?

2. Impressions and experiences with graduates from Liuzhou Vocational Technical College:

Has your company ever recruited graduates from Liuzhou Vocational Technical College? Why did you choose them?

3. Companies' Skill and Cap skills Requirements for Graduates:

In which areas do you believe students from Liuzhou Vocational Technical College excel? What skills that the company need from the prospective employee?

4. Suggestions and Expectations for the College:

What recommendations do you have for Liuzhou Vocational Technical College to better train their students and meet the needs of companies?

Closing Remarks:

Thank you for taking the time to participate in our interview.

Evaluation form for experts to check the validity of tools Semi-Structured Interview for Companies Outline

Explanation

This assessment is for experts to check that each question is appropriate.

Is it consistent with the objectives? The evaluation criteria are as follows:

Scoring +1 means that you are sure that the questions meet the objectives.

A score of 0 means not sure that the question meets the objective.

A score of -1 means that you are sure that the question does not meet the objective.

	Questions	Evaluation score			Comments or suggestions
		+1	0	-1	
Section 1: 1.Basic Information about the Company	1. Could you please introduce yourself and the department you work in?				
	2. How many years of experience do you have in recruitment and training?				
Section 2: Impressions and experiences with graduates from Liuzhou Vocational Technical College	1. Has your company ever recruited graduates from Liuzhou Vocational Technical College? Why did you choose them?				

Section 3: Companies' Skill and Capability Requirements for Graduates	1. In which areas do you believe students from Liuzhou Vocational Technical College excel?				
	2. What skills that the company need from the prospective employee?				
Section 4: Suggestions and Expectations for the College	1. What recommendations do you have for Liuzhou Vocational Technical College to better train their students and meet the needs of companies?				

Additional suggestions:

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Signed..... Assessor

(.....)

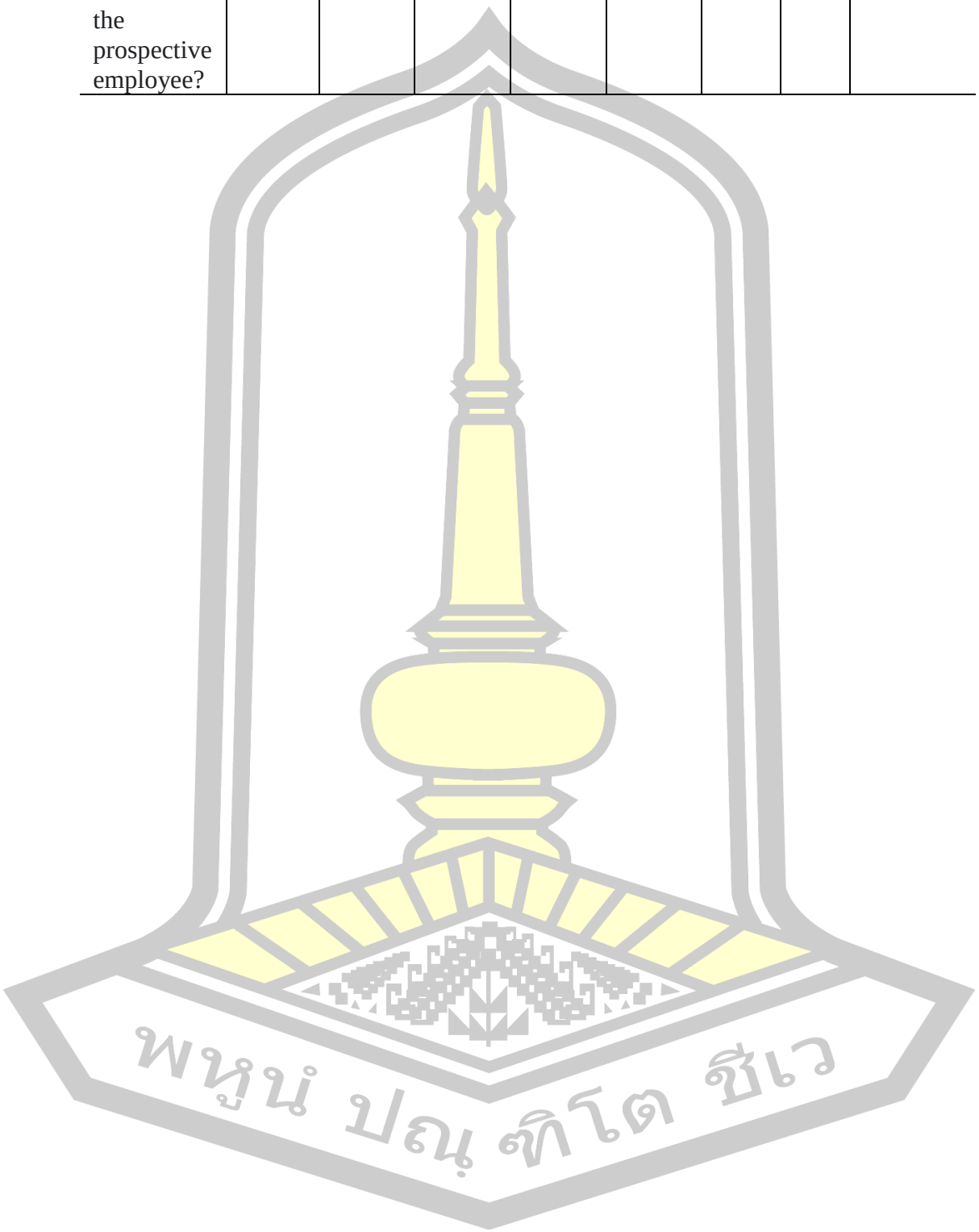
Position.....

Date.....Month.....Year.....

Index of Conformity (IOC) of the Semi-Structured Interview for Companies Outline

Content	Expert opinion					Total score	IOC	Result
	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5			
Could you please introduce yourself and the department you work in?	+1	+1	+1	+1	+1	5	1.00	Available
How many years of experience do you have in recruitment and training?	+1	0	+1	+1	+1	4	0.80	Available
Has your company ever recruited graduates from Liuzhou Vocational Technical College?	+1	+1	+1	+1	+1	5	1.00	Available
Why did you choose them?	+1	+1	+1	+1	+1	5	1.00	Available
In which areas do you believe students from Liuzhou Vocational Technical College excel?	+1	+1	+1	0	+1	4	0.80	Available
What skills that the	+1	+1	+1	0	+1	4	0.80	Available

company need from the prospective employee?								



The Result of IOC Index of The Teaching Design Content

Teaching design content	Experts 1	Experts 2	Experts 3	Experts 4	Experts 5	IOC
Chapter 1teamwork skills						0.90
Teaching goals	1	1	1	1	1	1.00
Teaching focus and learning difficulty	1	0	0	1	1	0.60
Teaching content and time arrangement	1	1	1	1	1	1.00
Teaching content organization and process design	1	1	1	1	1	1.00
Chapter 2 problem-solving skills						0.90
Teaching goals	1	1	1	1	1	1.00
Teaching focus and learning difficulty	1	0	1	1	1	0.80
Teaching content and time arrangement	1	1	0	1	1	0.80
Teaching content organization and process design	1	1	1	1	1	1.00
Chapter 3 communication and coordination skills						0.85
Teaching goals	1	1	1	1	1	1.00
Teaching focus and learning difficulty	1	1	1	1	0	0.80
Teaching content and time arrangement	1	1	1	1	1	1.00
Teaching content organization and process design	0	0	1	1	1	0.60
Chapter 4 Leadership Skills						0.90
Teaching goals	1	1	1	1	1	1.00
Teaching focus and learning difficulty	0	1	1	1	1	0.80
Teaching content and time arrangement	1	1	1	1	1	1.00
Teaching content organization and process design	1	1	1	1	0	0.80
Chapter 5 interpersonal skills						0.95
Teaching goals	1	1	1	1	1	1.00
Teaching focus and learning difficulty	1	0	1	1	1	0.80
Teaching content and time arrangement	1	1	1	1	1	1.00
Teaching content organization and process design	1	1	1	1	1	1.00
Total						0.90

Expert Evaluation Form of the Developed Training Course Content

Note: Please check the space corresponding to your opinion and comment on its applicability.

The space is divided into 5 levels, choose "Excellent"=5, "Good"=4, "Qualified"=3, "To be improved"=2, "Unqualified"=1.

Evaluation checklist	Grade				
	Excellent	Good	Qualified	To be improved	Unqualified
1.Teamwork Skills					
1.1 Basic Principles of Teamwork					
1.2 Team Roles and Responsibility Allocation					
1.3 Techniques for Enhancing Team Collaboration					
1.4 Project: Online Snail Noodle Entrepreneurship Competition					
2.Problem-Solving Skills					
2.1 Basic Steps in Problem Solving					
2.2 Creative Thinking and Problem Solving					
2.3 Project: "Smart City" Innovation Challenge					
3. Coordination and communication and coordination Skills					
3.1 Basic Principles and Techniques of Communication					
3.2 Coordination and Negotiation Skills					
3.3 Project: "Cross-departmental Project Collaboration" Communication Exercise					
4. Leadership Skills					

4.1 Basic Concepts of Leadership					
4.2 Techniques for Enhancing Leadership					
4.3 Project: Campus Public Service Activity Planning and Execution					
5. Interpersonal Skills					
5.1 The Importance of Interpersonal Relationships					
5.2 Techniques for Building and Maintaining Interpersonal Relationships					
5.3 Conflict Management and Resolution					
5.4Project: "Cross-cultural Communication" Simulation Practice					

Additional suggestions:

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Signed..... Assessor

(.....)

Position.....

Date.....Month.....Year.....

Likert Scale of the Expert Evaluation Form: Evaluate the Developed Training Course Content

No.		Expert opinion					Total score		Result
		Expert 1	Expert 2	Expert 3	Expert 4	Expert 5			
Chapter 1	1	+5	+5	+5	+5	+5	25	□16	Quality
	2	+5	+5	+5	+5	+5	25	□16	Quality
	3	+5	+5	+5	+5	+5	25	□16	Quality
	4	+5	+5	+5	+5	+5	25	□16	Quality
Chapter 2	1	+5	+4	+5	+5	+5	24	□16	Quality
	2	+5	+5	+5	+5	+5	25	□16	Quality
	3	+5	+5	+4	+5	+5	24	□16	Quality
Chapter 3	1	+5	+4	+5	+5	+5	24	□16	Quality
	2	+5	+5	+4	+5	+5	24	□16	Quality
	3	+4	+5	+3	+5	+5	22	□16	Quality
Chapter 3	1	+5	+5	+5	+5	+5	25	□16	Quality
	2	+5	+4	+5	+5	+5	24	□16	Quality
	3	+5	+5	+5	+5	+5	25	□16	Quality
Chapter 4	1	+5	+5	+5	+4	+5	24	□16	Quality
	2	+5	+5	+3	+5	+5	23	□16	Quality
	3	+5	+5	+5	+4	+5	24	□16	Quality
Chapter 5	1	+5	+5	+3	+5	+5	23	□16	Quality
	2	+4	+5	+3	+5	+5	22	□16	Quality

Assessment Form for College Students' Employability

Employability	Factors	Grade	Score
Teamwork Skills	1.1 Willingness to Collaborate	Requires encouragement to engage in teamwork.	1
		Participates in teamwork with some external motivation.	2
		Regularly takes the initiative and offers help.	3
		Actively promotes teamwork and encourages others to join.	4
		Demonstrates a profound understanding and appreciation of teamwork, fostering a positive team atmosphere.	5
	1.2 Teamwork Skills	Often needs guidance during team interactions.	1
		Completes basic team tasks with occasional assistance.	2
		Effectively collaborates with team members to ensure smooth progress.	3
		Assumes a leadership role to enhance teamwork efficiency.	4
		Manages multiple teams and promotes cross-team collaboration for maximum efficiency.	5
	1.3 Achievement of Team Goals	Contributes to achieving team goals but often needs guidance.	1
		Strives to achieve team goals with additional time if needed.	2
		Actively participates in goal achievement and assists others.	3
		Helps set team goals and drives their achievement.	4
		Establishes both long-term and short-term goals and formulates strategies for successful realization.	5
	1.4 Conflict Resolution	Takes a wait-and-see approach in conflicts and requires assistance to resolve.	1
		Participates in conflict resolution but does not usually lead.	2
		Leads in resolving general team conflicts.	3
		Handles complex conflicts within the team and ensures harmony.	4
		Utilizes extensive experience and strategies to resolve various conflicts and can train others.	5
		Needs guidance in team communication, someti	1

	1.5 Effective Teamwork Skills	mes resulting in unclear messages.	
		Communicates with team members, though effec tiveness may vary.	2
		Ensures generally effective communication with team members.	3
		Promotes open and meaningful communication w ithin the team.	4
		Exhibits advanced communication and coordinati on skills, ensuring clear and efficient team intera ctions in complex environments.	5
Problem-Solv ing Skills	2.1 Problem Identification	Can identify obvious problems with guidance.	1
		Can independently identify basic problems but m ay struggle with complex issues.	2
		Generally able to quickly identify and raise probl ems.	3
		Capable of identifying and predicting potential is sues in advance.	4
		Possesses deep insights into problems, often iden tifying and proposing preventive measures before issues arise.	5
	2.2 Problem Ana lysis and Assessment	Requires assistance from others to analyze proble ms.	1
		Can perform basic problem analysis but may nee d help with complex issues.	2
		Usually capable of independently analyzing and assessing a problem's complexity and urgency.	3
		Able to conduct thorough problem analysis, sugg esting various potential causes and solutions.	4
		Demonstrates advanced analytical skills, conduct ing in-depth research and assessment of various p roblems, and proposing optimal strategies.	5
	2.3 Solution Formulation	Needs guidance from others when formulating so lutions.	1
		Can propose basic solutions for common problem s.	2
		Able to devise suitable solutions for most proble ms.	3
		Capable of designing innovative solutions for co mplex issues.	4
		Utilizes extensive knowledge and experience to d evelop optimal and innovative solutions for a wid e range of problems.	5
	2.4 Effectiveness	Often requires assistance to resolve problems.	1
		Can address basic problems but may need multip	2

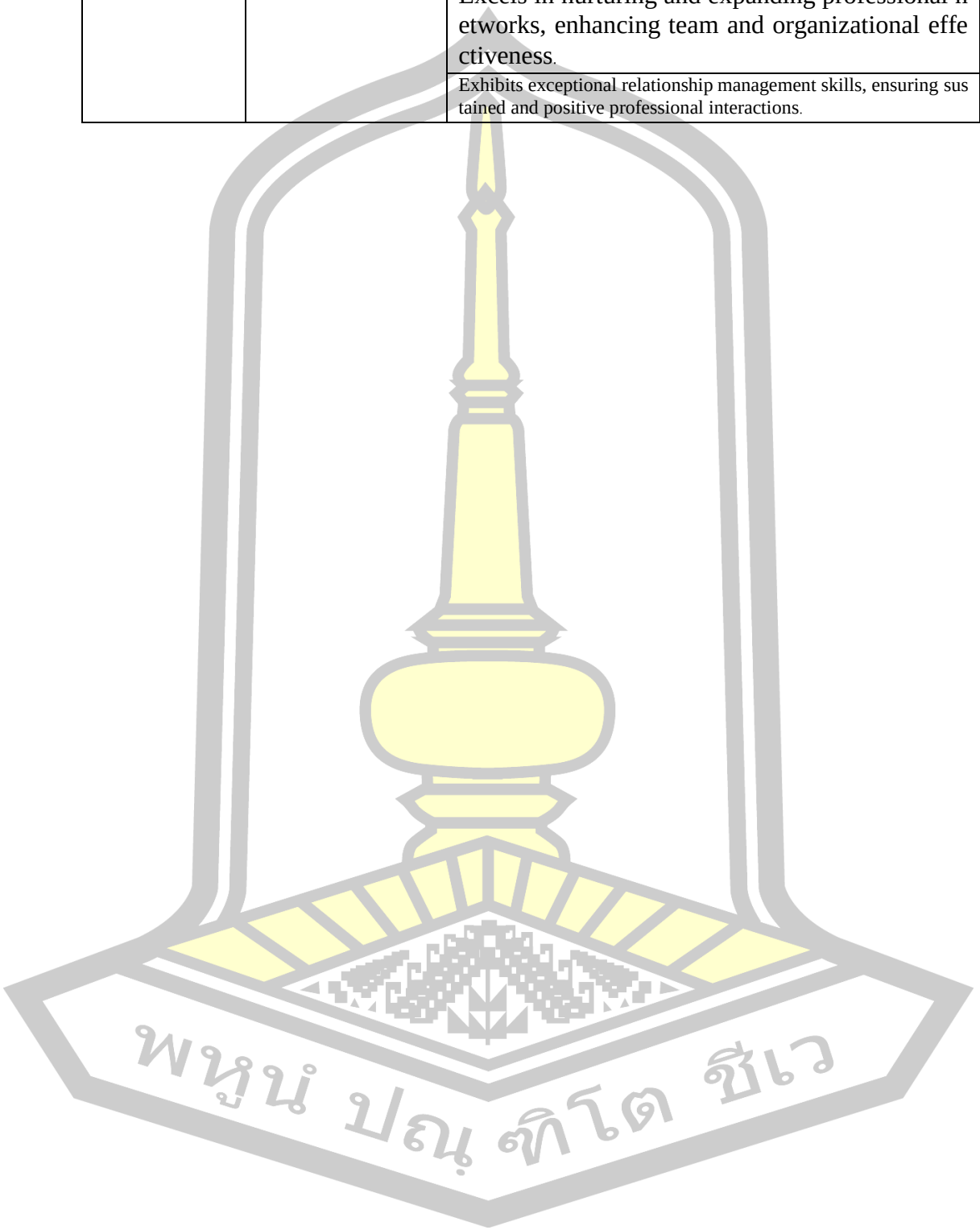
	of Problem-Solving	le attempts.	
		Typically effective in problem-solving, ensuring issues do not recur.	3
		Capable of resolving complex problems within teams and organizations, providing sustainable solutions.	4
		Effectively manages problems in various complex scenarios, contributing to organizational stability and success.	5
	2.5 Feedback and Improvement	Accepts feedback but may not always know how to improve.	1
		Can make improvements based on feedback but may require guidance.	2
		Actively seeks feedback and makes appropriate improvements.	3
		Encourages team feedback and develops improvement plans.	4
		Possesses a deep understanding of feedback and improvement processes, creating long-term improvement strategies for teams and organizations.	5
Communication and Coordination Skills	3.1 Oral Communication	Can handle basic oral communication, though fluency may be limited.	1
		Communicates relatively clearly but may lack precision on complex topics.	2
		Expresses thoughts and information clearly and accurately.	3
		Speaks effectively in public and persuades various audiences.	4
		Exhibits exceptional oral communication and coordination skills, efficiently communicating in diverse settings.	5
	3.2 Written Communication	Manages basic written communication, such as simple emails and reports.	1
		Writes clearly but may have grammatical or stylistic errors.	2
		Produces clear, accurate, and professional documents and reports.	3
		Writes complex documents, including research papers, proposals, or policy papers.	4
		Demonstrates superior writing skills, creating high-quality documents like publications, white papers, or strategy reports.	5
	3.3Cross-Cultural Communication	Understands basic cross-cultural communication but may encounter occasional misunderstanding.	1

		Communicates with individuals from different cultural backgrounds but may need to consciously avoid conflicts.	2
		Effectively communicates with people from various cultural backgrounds.	3
		Acts as a bridge in cross-cultural settings, facilitating communication between different cultures.	4
		Has deep cross-cultural knowledge and communicates efficiently in diverse cultural contexts.	5
	3.4 Communication and Coordination Skills Effectiveness	May lack confidence in communication, leading to occasional misunderstandings.	1
		Ensures communication is mostly effective, though clarifications might sometimes be necessary.	2
		Maintains clear and effective communication with others.	3
		Communicates effectively in various situations, including under stress or challenging circumstances.	4
		Exhibits advanced communication and coordination skills, ensuring efficient communication and precise information delivery in any environment.	5
	3.5 Listening Skills	Can listen to basic information but may need improvement for more complex content.	1
		Demonstrates adequate listening skills but may occasionally miss nuances.	2
		Actively listens and comprehends most information accurately.	3
		Excels in attentive listening, understanding detailed and complex information.	4
		Possesses exceptional listening skills, ensuring complete comprehension and effective response in all situations.	5
Leadership Skills	4.1 Model the Way	Occasionally sets an example for team members but lacks consistency.	1
		Demonstrates values and principles in routine tasks but may struggle to inspire others.	2
		Consistently leads by example, aligning actions with shared values.	3
		Acts as a role model, inspiring others through consistent behaviors and high standards.	4
		Exemplifies leadership by consistently embodying values, inspiring trust, and setting a strong foundation for team culture.	5
		Has difficulty articulating a vision that inspires o	1

		thers.	
	4.2 Inspire a Shared Vision	Communicates a basic vision but may lack clarity or enthusiasm.	2
		Effectively communicates a compelling vision that motivates others.	3
		Articulates an inspiring vision that aligns with the team's goals and values, rallying others toward a common future.	4
		Creates and communicates a powerful, shared vision that engages and motivates the entire organization toward achieving collective goals.	5
	4.3 Challenge the Process	Reluctant to challenge existing processes or seek improvements.	1
		Occasionally suggests improvements but may hesitate to take risks.	2
		Regularly seeks opportunities to innovate, taking calculated risks to improve processes.	3
		Encourages experimentation and learning from mistakes, fostering a culture of continuous improvement.	4
		Proactively challenges the status quo, inspiring innovative thinking and significant changes to drive the organization forward.	5
	4.4 Enable Others to Act	Provides minimal support or empowerment to team members.	1
		Offers support and resources but may not fully empower team members to act independently.	2
		Builds trust and collaboration, empowering others to make decisions and take ownership.	3
		Actively fosters teamwork and collaboration, encouraging others to develop and contribute fully.	4
		Creates a culture of trust, respect, and empowerment, enabling others to achieve their highest potential and work together effectively.	5
	4.5 Encourage the Heart	Offers recognition and encouragement occasionally, but may lack sincerity or consistency.	1
		Provides positive feedback but may not always acknowledge individual contributions.	2
		Regularly recognizes and celebrates individual and team accomplishments.	3
		Shows genuine appreciation for others' contributions, motivating them to excel.	4
		Consistently encourages and recognizes efforts, celebrating successes in ways that strengthen the t	5

		eam's commitment and morale.	
Interpersonal Skills	5.1Collaborative Relationships	Can collaborate with others to complete basic tas ks.	1
		Builds positive working relationships, successful ly completing joint projects.	2
		Establishes and maintains long-term collaborative relationships with a variety of individuals.	3
		Plays a key role in collaborations, ensuring their success.	4
		Masterfully understands collaboration, consistent ly finding ideal partners and fostering stable, pro ductive relationships.	5
	5.2 Conflict Management	May avoid or evade conflicts when they arise.	1
		Identifies and addresses basic conflicts but may n eed assistance.	2
		Resolves conflicts independently, ensuring satisf action for all parties involved.	3
		Anticipates and mitigates potential conflicts, mai ntaining team and organizational harmony.	4
		Has extensive experience in conflict resolution, c onsistently finding win-win solutions.	5
	5.3 Colleague Relationships	Gets along with most colleagues.	1
		Builds effective working relationships with colle agues, providing mutual support.	2
		Forms strong, supportive friendships with collea gues, becoming a core team member.	3
		Not only maintains good relationships but also m ediates and guides interactions within the team.	4
		Excels in interpersonal relations within the team, promoting ongoing harmony and unity.	5
	5.4 Social Skills	Engages in basic social interactions with ease.	1
		Develops positive social relationships, though m ay need support in complex situations.	2
		Interacts confidently in various social settings.	3
		Excels in social situations and can mentor others to improve their social skills.	4
		Demonstrates outstanding social skills, consisten tly earning the respect and admiration of others.	5
	5.5 Relationship Management	Manages basic professional relationships with mi nimal guidance.	1
		Effectively maintains and develops professional r elationships, fostering collaboration and growth.	2
		Builds and sustains strong, productive relationshi ps, contributing to the success of projects and init	3

		iatives.	
		Excels in nurturing and expanding professional n etworks, enhancing team and organizational effe ctiveness.	4
		Exhibits exceptional relationship management skills, ensuring sus tained and positive professional interactions.	5



Evaluation form for experts to check the validity of tools employability Test

Explanation

1. This assessment is for experts to check that each question is appropriate.

Is it consistent with the objectives? The evaluation criteria are as follows:

Scoring +1 means that you are sure that the questions meet the objectives.

A score of 0 means not sure that the question meets the objective.

A score of -1 means that you are sure that the question does not meet the objective.

2. In this research The employability test is applied the employability Inventory developed TRI by Meredith Belbin, PSI by Donald A. Neudecker, CCQ by James C. McCroskey, LPI by James M. Kouzes and Barry Z. Posner, and SSI by E. William Riggio

No.	Evaluation score			Suggestions From experts
	+1	0	-1	
1.1				
1.2				
1.3				
1.4				
1.5				
2.1				
2.2				
2.3				
2.4				
2.5				
3.1				
3.2				
3.3				
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3.5				
4.1				
4.2				
4.3				
4.4				
4.5				
5.1				
5.2				

5.3				
5.4				
5.5				

Additional suggestions:

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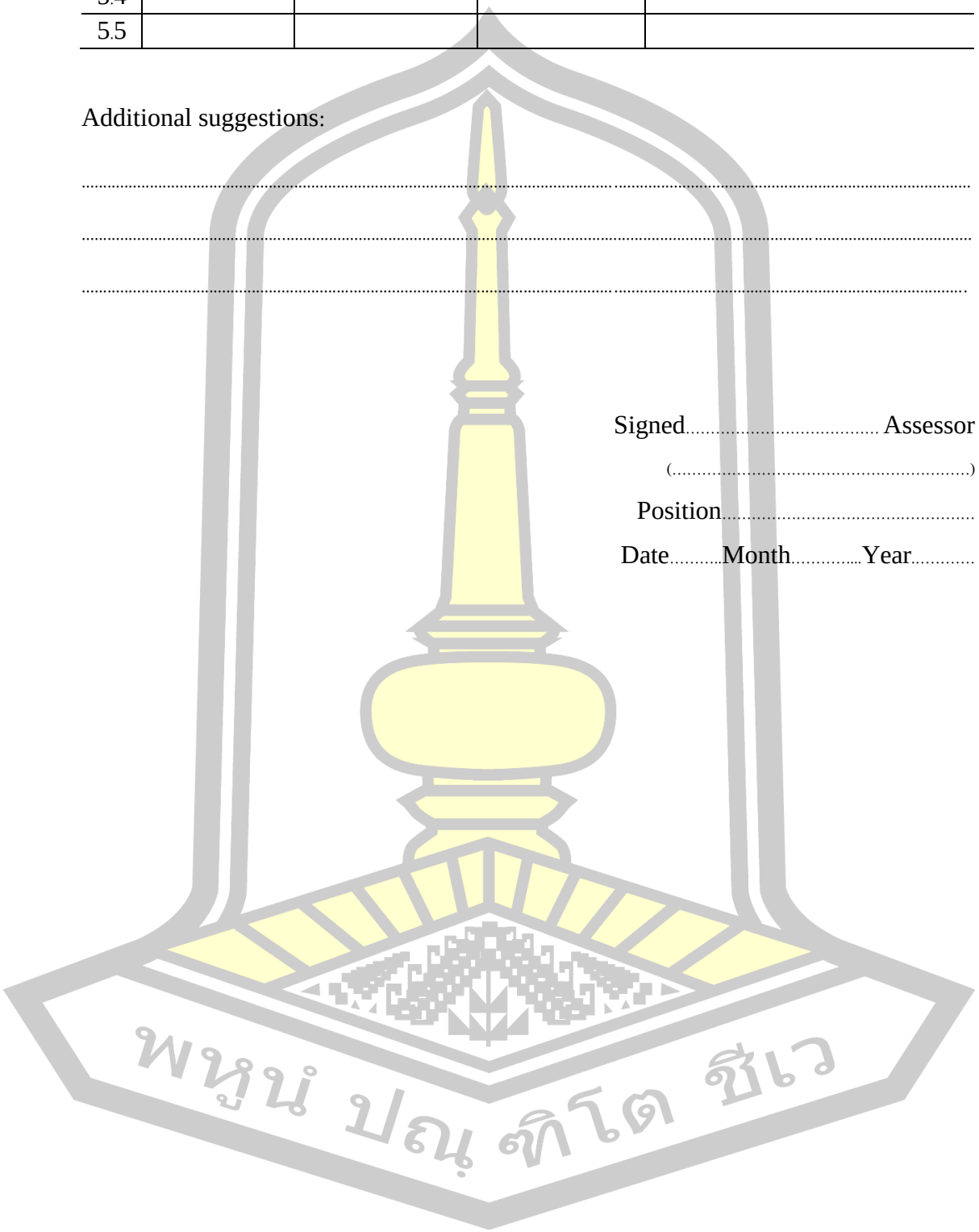
Signed..... Assessor

(.....)

Position.....

Date.....Month.....Year.....



Index of Conformity (IOC) of the employability Test

No.	Expert opinion					Total score	IOC	Result
	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5			
1.1	+1	+1	+1	+1	+1	5	1.00	Available
1.2	+1	+1	+1	+1	+1	5	1.00	Available
1.3	+1	+1	+1	+1	+1	5	1.00	Available
1.4	+1	+1	+1	+0	+1	4	0.80	Available
1.5	+1	+1	+0	+1	+1	4	0.80	Available
2.1	+1	+1	+1	+1	+1	5	1.00	Available
2.2	+1	+1	+1	+1	+1	5	1.00	Available
2.3	+1	+1	+1	+1	+1	5	1.00	Available
2.4	+1	+1	+1	+1	+1	5	1.00	Available
2.5	+1	+0	+1	+1	+1	4	0.80	Available
3.1	+0	+1	+1	+1	+1	4	0.80	Available
3.2	+1	+1	+1	+1	+1	5	1.00	Available
3.3	+1	+1	+1	+1	+1	5	1.00	Available
3.4	+1	+1	+1	+1	+0	4	0.80	Available
3.5	+1	+1	+1	+1	+1	5	1.00	Available
4.1	+1	+1	+1	+1	+0	4	0.80	Available
4.2	+1	+1	+1	+1	+1	5	1.00	Available
4.3	+1	+1	+1	+1	+1	5	1.00	Available
4.4	+1	+1	+1	+1	+1	5	1.00	Available
4.5	+1	+1	+1	+0	+1	4	0.80	Available
5.1	+1	+1	+1	+1	+1	5	1.00	Available
5.2	+1	+1	+0	+1	+1	4	0.80	Available
5.3	+1	+1	+1	+1	+1	5	1.00	Available
5.4	+1	+1	+1	+1	+1	5	1.00	Available
5.5	+1	+1	+1	+1	+1	5	1.00	Available

Questionnaire: Feedback of Employability Training Course

Dear Participants,

Thank you for participating in this survey to evaluate the employability training course. Your feedback is invaluable in helping us understand the effectiveness of the program and make necessary improvements. Please take a few minutes to complete this survey.

Part I: Participant Information

1. Name (Optional): _____

2. College: _____

Part II: Program Evaluation

Please indicate your level of agreement with the following statements:

For each statement, please select the appropriate response:

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

Perceived Learning Outcomes:

1. The employability training course effectively improved my job market readiness.

- [ ] 1 - [ ] 2 - [ ] 3 - [ ] 4 - [ ] 5

2. The training course helped me develop critical employability (e.g., communication, teamwork skills).

- [ ] 1 - [ ] 2 - [ ] 3 - [ ] 4 - [ ] 5

3. The course improved my understanding of teamwork skills, problem-solving, communication, leadership, and interpersonal skills.

- [ ] 1 - [ ] 2 - [ ] 3 - [ ] 4 - [ ] 5

4. The teaching materials provided practical knowledge applicable to real-world job scenarios.

- [ ] 1 - [ ] 2 - [ ] 3 - [ ] 4 - [ ] 5

5. The course's interactive activities improved my learning experience.

- [ ] 1 - [ ] 2 - [ ] 3 - [ ] 4 - [ ] 5

Part III: Open-ended Questions (Qualitative)

Please provide detailed responses to the following questions:

1. What aspects of the employability training course did you find most valuable in improving your employability?

2. In your opinion, were there any topics or areas that were not adequately covered in the program? Please elaborate.

3. How do you think the employability training course could be improved to better facilitate learning for future students?

4. Were there any specific teaching methods or resources that you found particularly effective? Please share your thoughts.

5. Do you have any additional comments, suggestions, or insights about the employability training course?

Thank you for your time and valuable feedback! Your input will help us improve the employability Training Course for future learners.

Evaluation form for Questionnaire: Feedback of Training Course

Explanation

This assessment is for experts to check that each question is appropriate.

Is it consistent with the objectives? The evaluation criteria are as follows:

Scoring +1 means that you are sure that the questions meet the objectives.

A score of 0 means not sure that the question meets the objective.

A score of -1 means that you are sure that the question does not meet the objective.

	Questions	Evaluation score			Comments or suggestions
		+1	0	-1	
Part I: Participant Information	1.Name				
	2. College				
Part II: Program Evaluation	1. The employability training course effectively improved my job market readiness.				
	2. The training course helped me develop critical employability (e.g., communication, teamwork skills)				
	3. The course improved my understanding of teamwork skills, problem-solving, communication, leadership, and interpersonal skills.				
	4. The teaching materials provided practical knowledge applicable to real-world job scenarios.				

	5. The course's interactive activities improved my learning experience.				
Part III : Open-ended Questions (Qualitative)	1. What aspects of the employability training course did you find most valuable in improving your employability?				
	2. In your opinion, were there any topics or areas that were not adequately covered in the program? Please elaborate.				
	3. How do you think the employability training course could be improved to better facilitate learning for future students?				
	4. Were there any specific teaching methods or resources that you found particularly effective? Please share your thoughts.				
	5. Do you have any additional comments, suggestions, or insights about the employability training course?				

Additional suggestions:

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Signed..... Assessor

(.....)

Position.....

Date.....Month.....Year.....

Index of Conformity (IOC) of the Questionnaire: Feedback of Training Course

No.		Expert opinion					Total score	IOC	Result
		Expert 1	Expert 2	Expert 3	Expert 4	Expert 5			
Part I	1	+1	+1	+1	+1	+1	5	1.00	Available
	2	+1	+1	+1	+1	+1	5	1.00	Available
Part II	1	+1	+1	+1	+1	+1	5	1.00	Available
	2	+1	+1	+1	+1	+1	5	1.00	Available
	3	+1	+1	+1	+1	+1	5	1.00	Available
	4	+1	+0	+1	+1	+1	4	0.80	Available
	5	+1	+1	+1	+1	+1	5	1.00	Available
Part III	1	+1	+1	+1	+1	+1	5	1.00	Available
	2	+1	+1	+1	+1	+1	5	1.00	Available
	3	+1	+1	+1	+1	+0	4	0.80	Available
	4	+1	+1	+1	+1	+1	5	1.00	Available
	5	+1	+1	+1	+1	+1	5	1.00	Available

Scoring Standards for Project Presentation in Employability Training Course

No.	Project	Scoring Criteria	Score				
			5	4	3	2	1
1	Teamwork Skills: Online Snail Noodle Entrepreneurship Competition	1.1Clarity and timeliness of information within the team, facilitating cooperation among members.					
		1.2Whether members understand their roles and responsibilities and whether tasks are allocated effectively to optimize team efficiency.					
		1.3Effectiveness of communication and decision-making in collective decisions within the team.					
		1.4Skills of the team to collaborate effectively and implement feasible solutions when facing challenges.					
		1.5Whether a supportive and positive atmosphere is created within the team and whether members actively participate in activities.					
2	Problem-solving Skills："Smart City" Innovation Challenge	2.1Skills to accurately identify and define key problems in the "Smart City" innovation challenge.					
		2.2Creativity and feasibility of proposed solutions in addressing specific issues in the smart city context.					

		2.3Effectiveness of solution implementation, adherence to plan, and achievement of expected outcomes.					
		2.4Team members' ability to work together effectively to drive solution implementation.					
		2.5Systematic evaluation of solution effectiveness and adjustments based on feedback.					
3	Communication and Coordination Skills："Cross-departmental Project Collaboration" Communication Exercise	3.1Accuracy and clarity of communication, ensuring a shared understanding of project goals across departments.					
		3.2Timeliness of communication to ensure all relevant departments receive synchronized information, avoiding misunderstandings and delays.					
		3.3Effectiveness in coordinating tasks and facilitating progress across departments in a cross-departmental project.					
		3.4Responsiveness to feedback during the communication process, including making necessary adjustments.					
		3.5Efficiency in organizing meetings, ensuring orderly discussion, and making clear decisions.					
4	Leadership Skills：Campus Public Service Activity Planning and Execution	4.1Skills to develop a clear vision and plan for the campus public service activity.					
		4.2Effectiveness in motivating and guiding team members throughout the planning and execution phases.					

		4.3Skills to make timely and effective decisions during activity planning and execution.					
		4.4Efficient management of resources to ensure successful execution of the public service activity.					
		4.5Evaluation of the activity's outcomes and ability to make improvements based on results.					
5	Interpersonal Skills："Cross-cultural Communication" Simulation Practice	5.1Skills to understand and respect cultural differences during interactions.					
		5.2Demonstrating empathy and understanding towards individuals from different cultural backgrounds.					
		5.3Skills to communicate effectively and clearly in a cross-cultural context.					
		5.4Skills in resolving conflicts and misunderstandings arising from cultural differences.					
		5.5Skills to build and maintain positive relationships across cultural boundaries.					

Evaluation form for Scoring Standards for Project Presentation in Employability Training Course

Explanation

This assessment is for experts to check that each question is appropriate.

Is it consistent with the objectives? The evaluation criteria are as follows:

Scoring +1 means that you are sure that the questions meet the objectives.

A score of 0 means not sure that the question meets the objective.

A score of -1 means that you are sure that the question does not meet the objective.

	Questions	Evaluation score			Comments or suggestions
		+1	0	-1	
Teamwork Skills: Online Snail Noodle Entrepreneurship Competition	1.1Clarity and timeliness of information within the team, facilitating cooperation among members.				
	1.2Whether members understand their roles and responsibilities and whether tasks are allocated effectively to optimize team efficiency.				
	1.3Effectiveness of communication and decision-making in collective decisions within the team.				
	1.4Skills of the team to collaborate effectively and implement feasible solutions when facing challenges.				

	1.5Whether a supportive and positive atmosphere is created within the team and whether members actively participate in activities.				
Problem-solving Skills: "Smart City" Innovation Challenge	2.1Skills to accurately identify and define key problems in the "Smart City" innovation challenge.				
	2.2Creativity and feasibility of proposed solutions in addressing specific issues in the smart city context.				
	2.3Effectiveness of solution implementation, adherence to plan, and achievement of expected outcomes.				
	2.4Team members' ability to work together effectively to drive solution implementation.				
	2.5Systematic evaluation of solution effectiveness and adjustments based on feedback.				
Communication and Coordination Skills: "Cross-departmental Project Collaboration" Communication Exercise	3.1Accuracy and clarity of communication, ensuring a shared understanding of project goals across departments.				
	3.2Timeliness of communication to ensure all relevant departments receive synchronized information, avoiding misunderstandings and delays.				
	3.3Effectiveness in coordinating tasks and facilitating progress across departments in a cross-departmental project.				
	3.4Responsiveness to feedback during the communication process, including making necessary adjustments.				
	3.5Efficiency in organizing meetings, ensuring orderly discussion, and making clear decisions.				

Leadership Skills: Campus Public Service Activity Planning and Execution	4.1Skills to develop a clear vision and plan for the campus public service activity.				
	4.2Effectiveness in motivating and guiding team members throughout the planning and execution phases.				
	4.3Skills to make timely and effective decisions during activity planning and execution.				
	4.4Efficient management of resources to ensure successful execution of the public service activity.				
	4.5Evaluation of the activity's outcomes and ability to make improvements based on results.				
Interpersonal Skills: "Cross-cultural Communication" Simulation Practice	5.1Skills to understand and respect cultural differences during interactions.				
	5.2Demonstrating empathy and understanding towards individuals from different cultural backgrounds.				
	5.3Skills to communicate effectively and clearly in a cross-cultural context.				
	5.4Skills in resolving conflicts and misunderstandings arising from cultural differences.				
	5.5Skills to build and maintain positive relationships across cultural boundaries.				

Additional suggestions:

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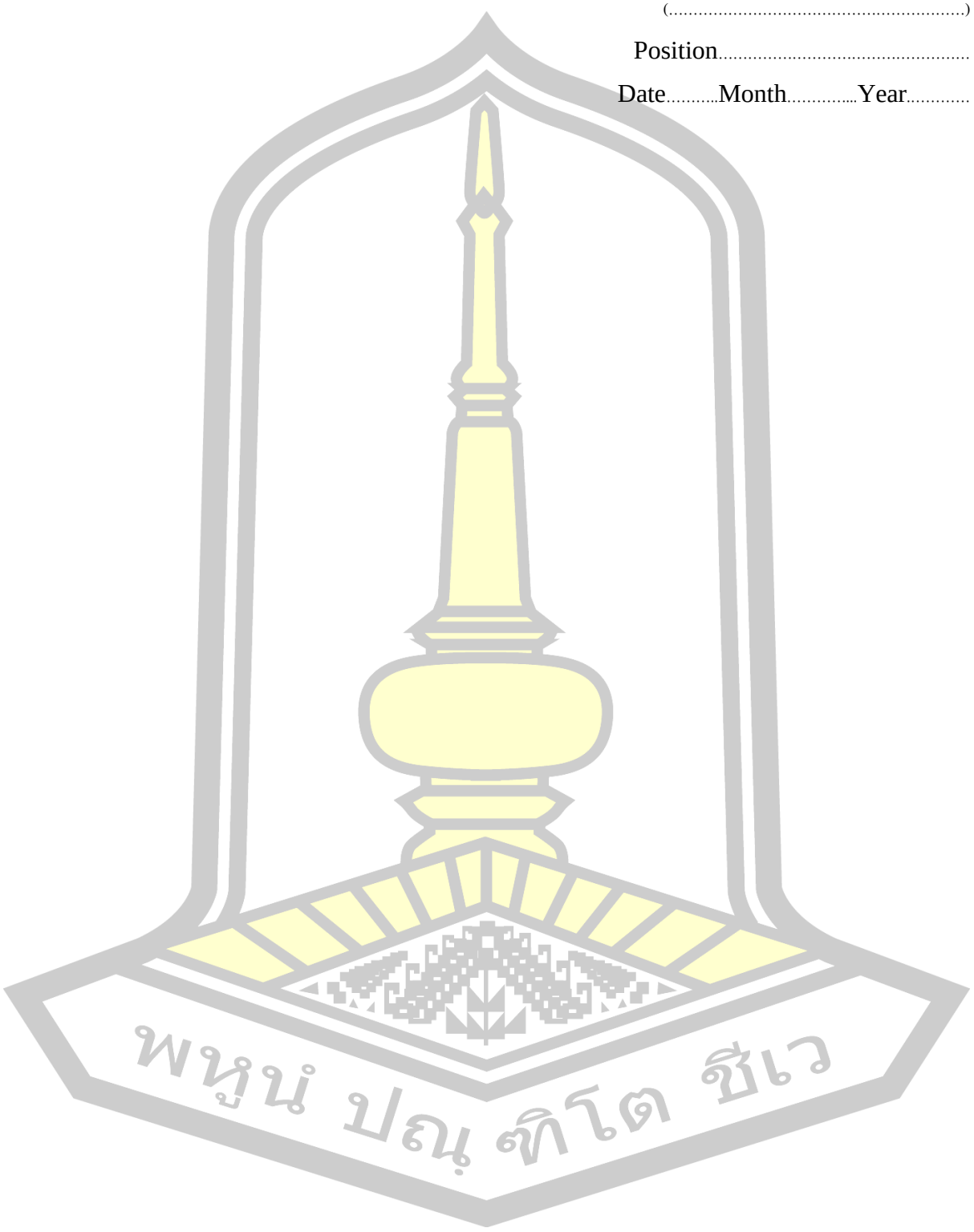
Signed..... Assessor

(.....)

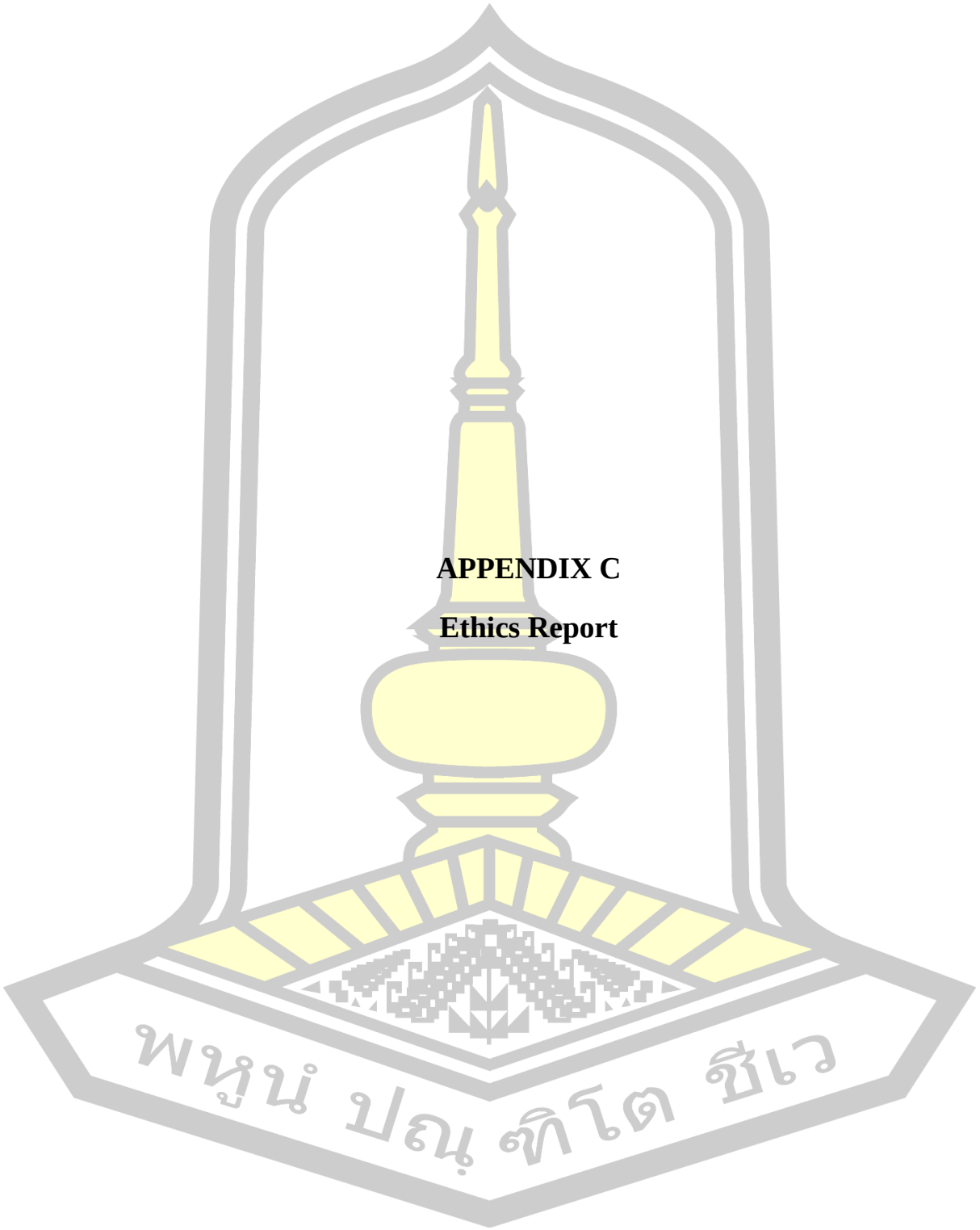
Position.....

Date.....Month.....Year.....



Index of Conformity (IOC) of Scoring Standards for Project Presentation in Employability Training Course

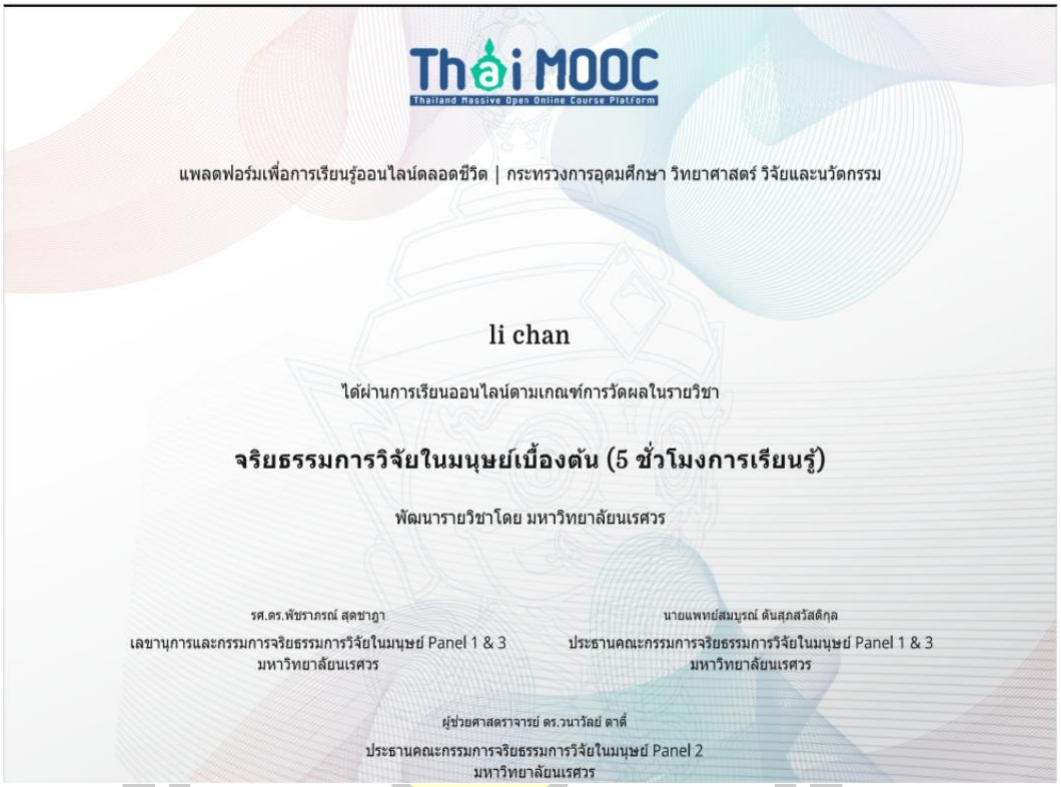
No.	Expert opinion					Total score	IOC	Result
	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5			
1.1	+1	+1	+1	+1	+1	5	1.00	Available
1.2	+1	+1	+1	+0	+1	4	1.00	Available
1.3	+1	+1	+1	+1	+1	5	1.00	Available
1.4	+1	+0	+1	+1	+1	4	0.80	Available
1.5	+1	+1	+1	+1	+1	5	1.00	Available
2.1	+1	+1	+1	+1	+1	5	1.00	Available
2.2	+1	+0	+1	+1	+1	4	0.80	Available
2.3	+1	+1	+1	+1	+1	5	1.00	Available
2.4	+1	+0	+1	+1	+1	4	0.80	Available
2.5	+1	+1	+1	+1	+1	5	1.00	Available
3.1	+1	+1	+1	+1	+1	5	1.00	Available
3.2	+1	+1	+1	+1	+1	5	1.00	Available
3.3	+1	+0	+1	+1	+1	4	0.80	Available
3.4	+1	+1	+1	+1	+1	5	1.00	Available
3.5	+1	+1	+1	+1	+1	5	1.00	Available
4.1	+1	+1	+1	+1	+1	5	1.00	Available
4.2	+1	+1	+1	+1	+0	4	0.80	Available
4.3	+1	+1	+1	+1	+1	5	1.00	Available
4.4	+1	+1	+1	+1	+1	5	1.00	Available
4.5	+1	+1	+1	+1	+1	5	1.00	Available
5.1	+1	+0	+1	+1	+1	4	0.80	Available
5.2	+1	+1	+1	+1	+1	5	1.00	Available
5.3	+1	+1	+1	+1	+1	5	1.00	Available
5.4	+1	+1	+1	+1	+1	5	1.00	Available
5.5	+1	+1	+1	+1	+1	5	1.00	Available



APPENDIX C

Ethics Report

Training Certificate of Basic Human Subject Protection Course



Thai MOOC
Thailand Massive Open Online Course Platform

แพลตฟอร์มเพื่อการเรียนรู้ออนไลน์ตลอดชีวิต | กระทรวงการอุดมศึกษา วิทยาศาสตร์ วิจัยและนวัตกรรม

li chan

ได้ผ่านการเรียนออนไลน์ตามเกณฑ์การวัดผลในรายวิชา

จริยธรรมการวิจัยในมนุษย์เบื้องต้น (5 ชั่วโมงการเรียนรู้)

พัฒนารายวิชาโดย มหาวิทยาลัยนเรศวร

รศ.ดร.พัชราภรณ์ สุดชาฎา
เลขานุการและกรรมการจริยธรรมการวิจัยในมนุษย์ Panel 1 & 3
มหาวิทยาลัยนเรศวร

นายแพทย์สมบูรณ์ ตันสุภสวัสดิกุล
ประธานคณะกรรมการจริยธรรมการวิจัยในมนุษย์ Panel 1 & 3
มหาวิทยาลัยนเรศวร

ผู้ช่วยศาสตราจารย์ ดร.วนาวัลย์ ดาดี้
ประธานคณะกรรมการจริยธรรมการวิจัยในมนุษย์ Panel 2
มหาวิทยาลัยนเรศวร

Ethical Approval for Human Research

MAHASARAKHAM UNIVERSITY ETHICS COMMITTEE FOR RESEARCH INVOLVING HUMAN SUBJECTS

Certificate of Approval

Approval number: 182-175/2024

Title : Developing Training Course for College Students to Improve Employability in Liuzhou China.

Principal Investigator : Miss. Li Chan
Responsible Department : Faculty of Education
Research site : Liuzhou City, GuangXi Province, China

Review Method : Expedited Review

Date of Manufacture : 28 March 2024 **expire :** 27 March 2025

This research application has been reviewed and approved by the Ethics Committee for Research Involving Human Subjects, Mahasarakham University, Thailand. Approval is dependent on local ethical approval having been received. Any subsequent changes to the consent form must be re-submitted to the Committee.

Ratree S.

(Assistant Professor Ratree Sawangjit)
Chairman

Approval is granted subject to the following conditions: (see back of this Certificate)

BIOGRAPHY

NAME	Chan Li
DATE OF BIRTH	July 13, 1983
PLACE OF BIRTH	Liuzhou, China
ADDRESS	28 Shewan Road, Liuzhou, Guangxi Zhuang Autonomous Region, China
POSITION	Liuzhou, Guangxi Zhuang Autonomous Region, China
PLACE OF WORK	Liuzhou Vocational and Technical College
EDUCATION	Graduated in July 2005 with a degree in Business Administration from Guangxi University of Technology; Graduated in June 2012 with a degree in Electronics and Communication Engineering from Wuhan University.
Research grants & awards	None