

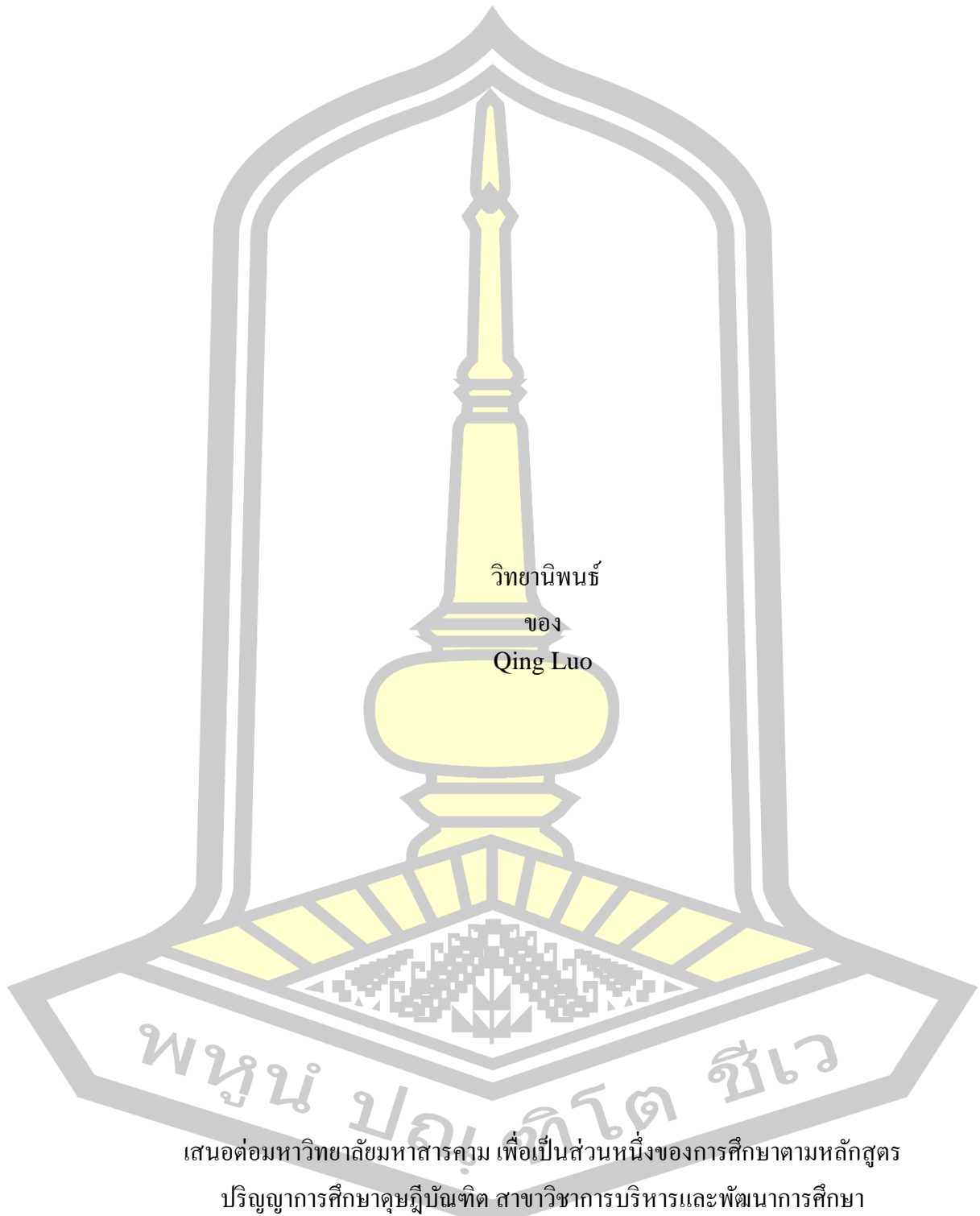
Program to Enhance the Double-Qualified Teachers Competency in Local Applied  
University

Qing Luo

A Thesis Submitted in Partial Fulfillment of Requirements for  
degree of Doctor of Education in Educational Administration and Development  
October 2024

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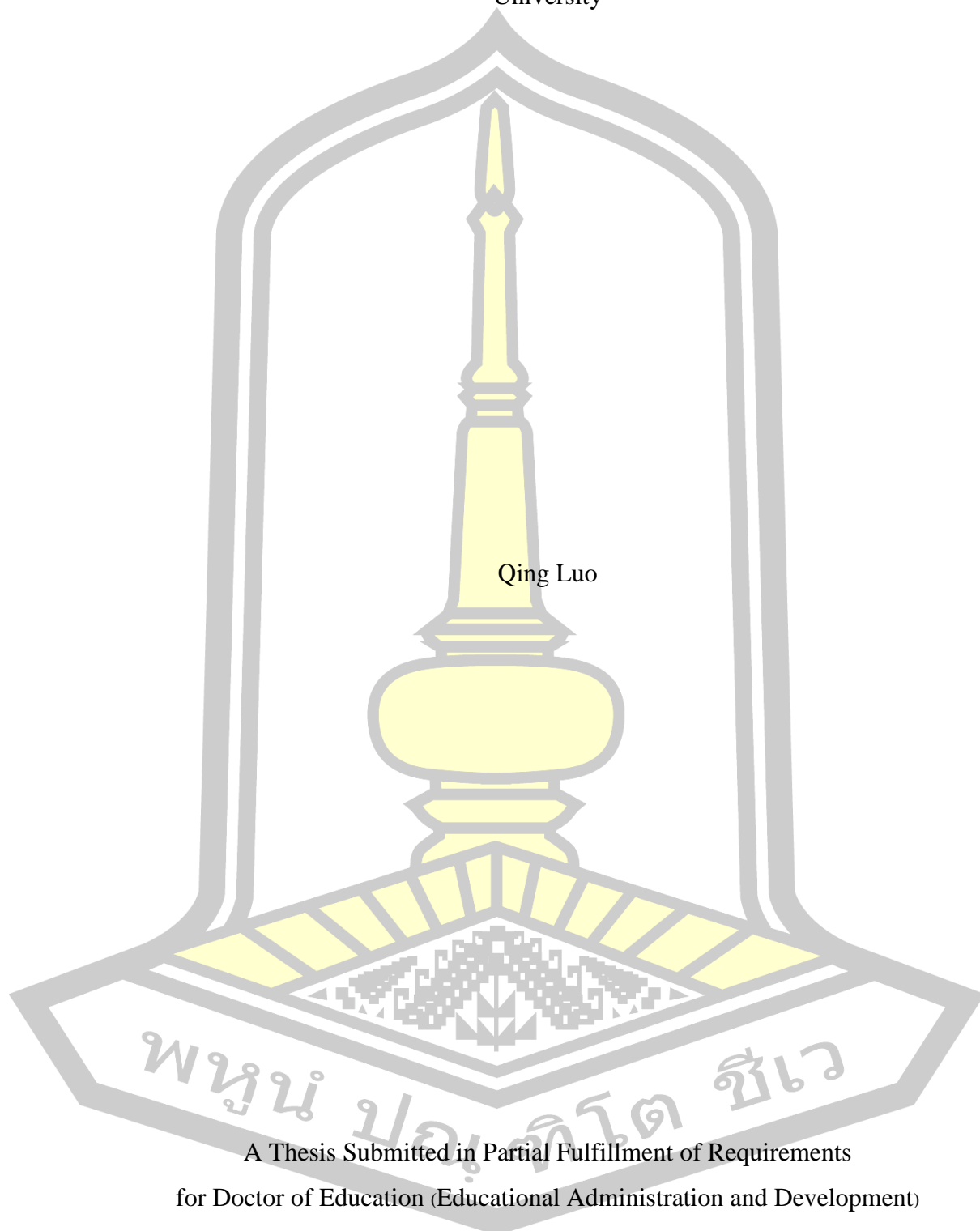
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ลิขสิทธิ์เป็นของมหาวิทยาลัยมหาสารคาม

Program to Enhance the Double-Qualified Teachers Competency in Local Applied  
University



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A Thesis Submitted in Partial Fulfillment of Requirements  
for Doctor of Education (Educational Administration and Development)

October 2024

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### ABSTRACT

The objectives of this research were: 1) To investigate the components, 2) To explore the existent condition, desired condition and need Assessment and, 3) To design and construct the program to enhance the Double-Qualified teachers competency in local applied university. The research method was divided into 3 phases: Phase 1 was to investigate components and indicators of the Double-Qualified teachers competency in local applied university. Phase 2 was to the Existence condition, Desire condition and Priority Need Index of research on the Double-Qualified teachers competency in local applied university. There were 228 samples from Baise university in Baise, Guangxi province. The research instrument was 5-point estimation scale questionnaire. The Cronbach's Alpha Coefficient has a confidence value of the existent condition is .985 and the desired condition is .965. Phase 3 was to design and construct an appropriate program to enhance the Double-Qualified teachers competency in local applied university. The informant groups consisted of 3 universities and 5 experts assessing the program. The research instruments were questionnaire, interview forms, and assessment forms. The statistics used for data analysis were percentage, mean, standard deviation, and the need index. The results revealed that:

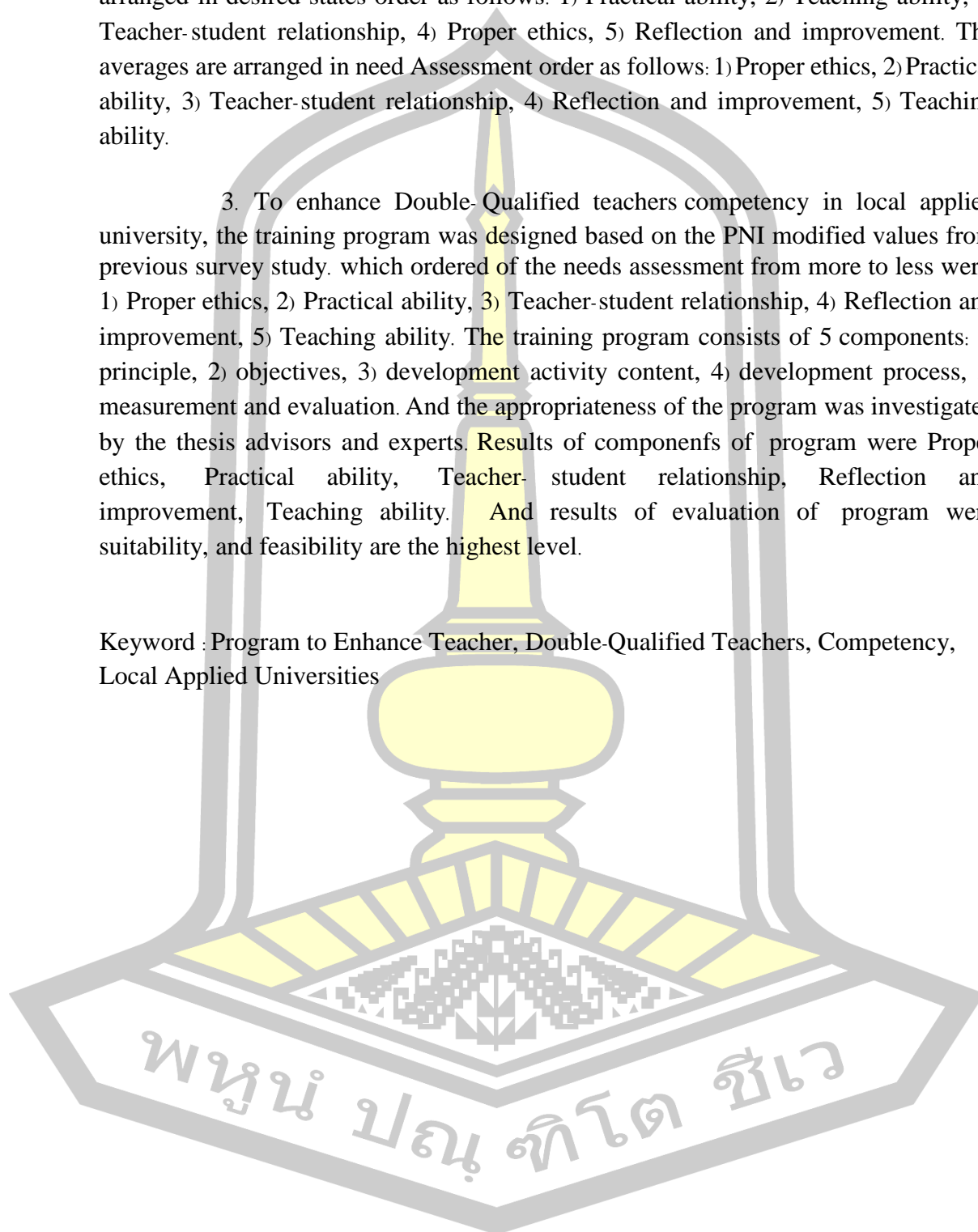
1. The components of Double-Qualified teachers competency in local applied university were 1) Proper Ethics, 2) Practical ability, 3) Teaching ability, 4) Reflection and improvement, 5) Teacher-student relationship.

2. The existent condition in general was at the medium level, with an average of 2.82. Proper ethics was at the lowest level. The averages are arranged in descending order as follows: 1) Teaching ability, 2) Reflection and improvement, 3) Teacher-student relationship, 4) Practical ability, and 5) Proper ethics. The desired condition, each aspect of Double-Qualified teachers competency in local applied

university was at the very high levels, with an average of 4.85. The averages are arranged in desired states order as follows: 1) Practical ability, 2) Teaching ability, 3) Teacher-student relationship, 4) Proper ethics, 5) Reflection and improvement. The averages are arranged in need Assessment order as follows: 1) Proper ethics, 2) Practical ability, 3) Teacher-student relationship, 4) Reflection and improvement, 5) Teaching ability.

3. To enhance Double-Qualified teachers competency in local applied university, the training program was designed based on the PNI modified values from previous survey study. which ordered of the needs assessment from more to less were: 1) Proper ethics, 2) Practical ability, 3) Teacher-student relationship, 4) Reflection and improvement, 5) Teaching ability. The training program consists of 5 components: 1) principle, 2) objectives, 3) development activity content, 4) development process, 5) measurement and evaluation. And the appropriateness of the program was investigated by the thesis advisors and experts. Results of componenfs of program were Proper ethics, Practical ability, Teacher- student relationship, Reflection and improvement, Teaching ability. And results of evaluation of program were suitability, and feasibility are the highest level.

Keyword : Program to Enhance Teacher, Double-Qualified Teachers, Competency, Local Applied Universities



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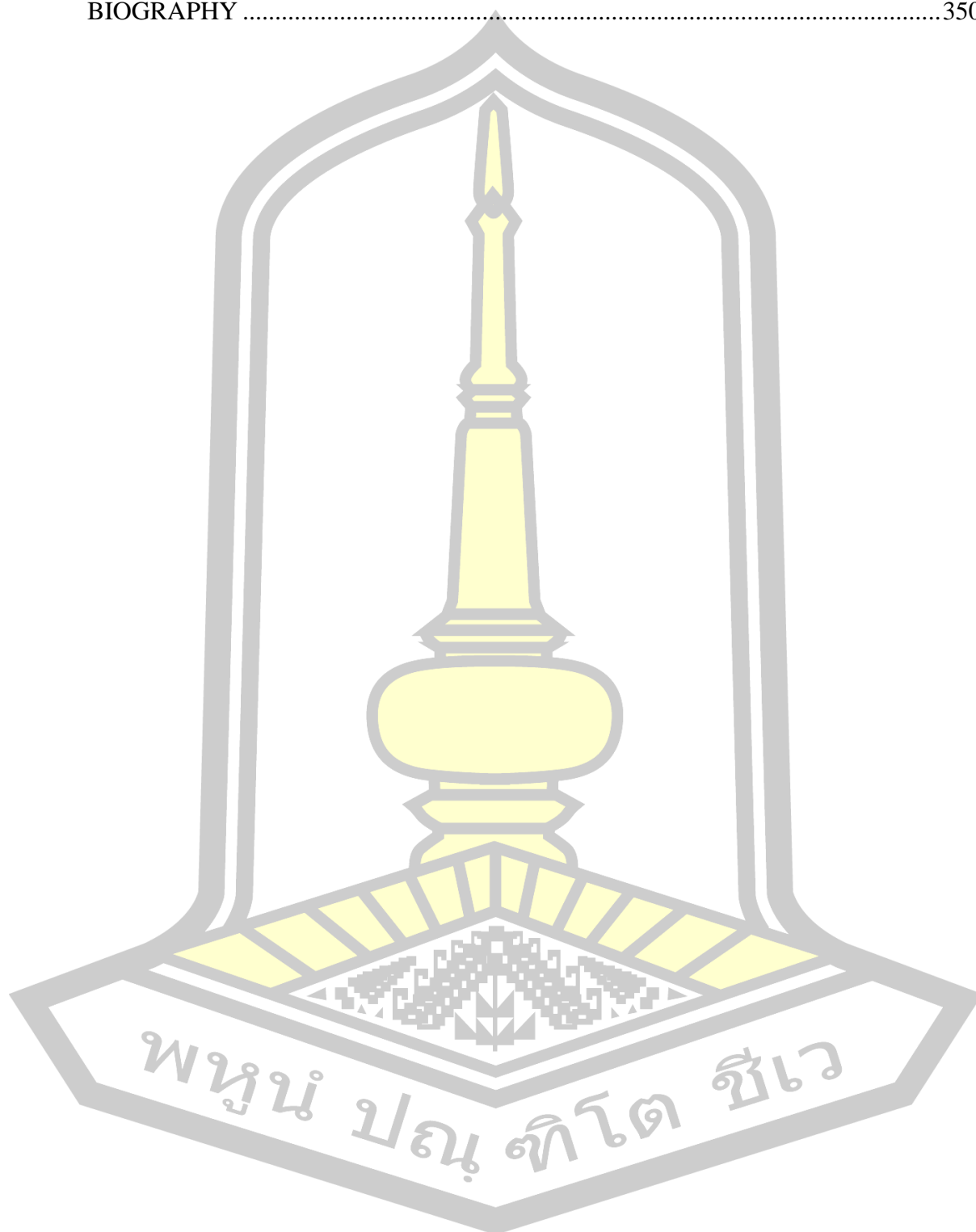
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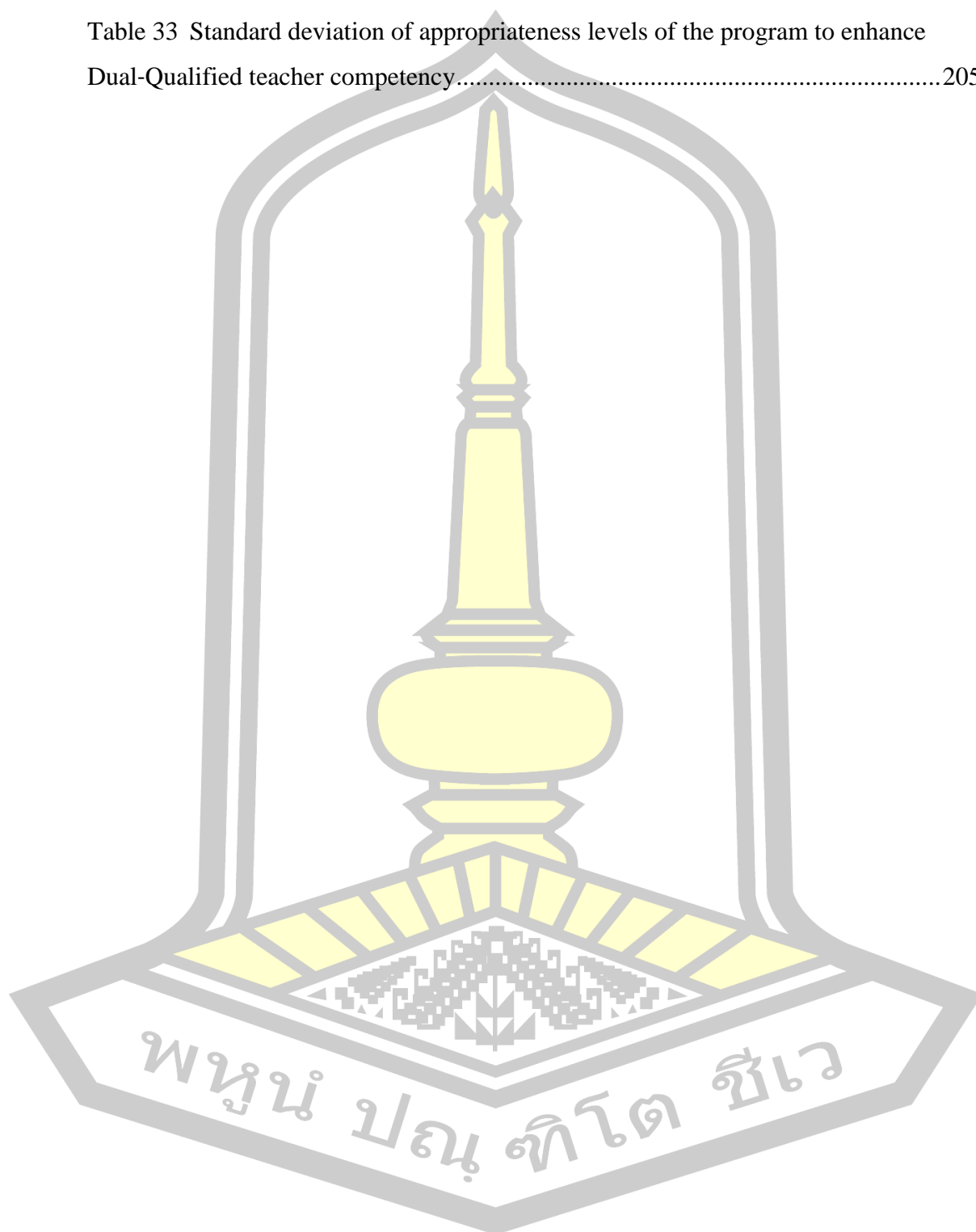
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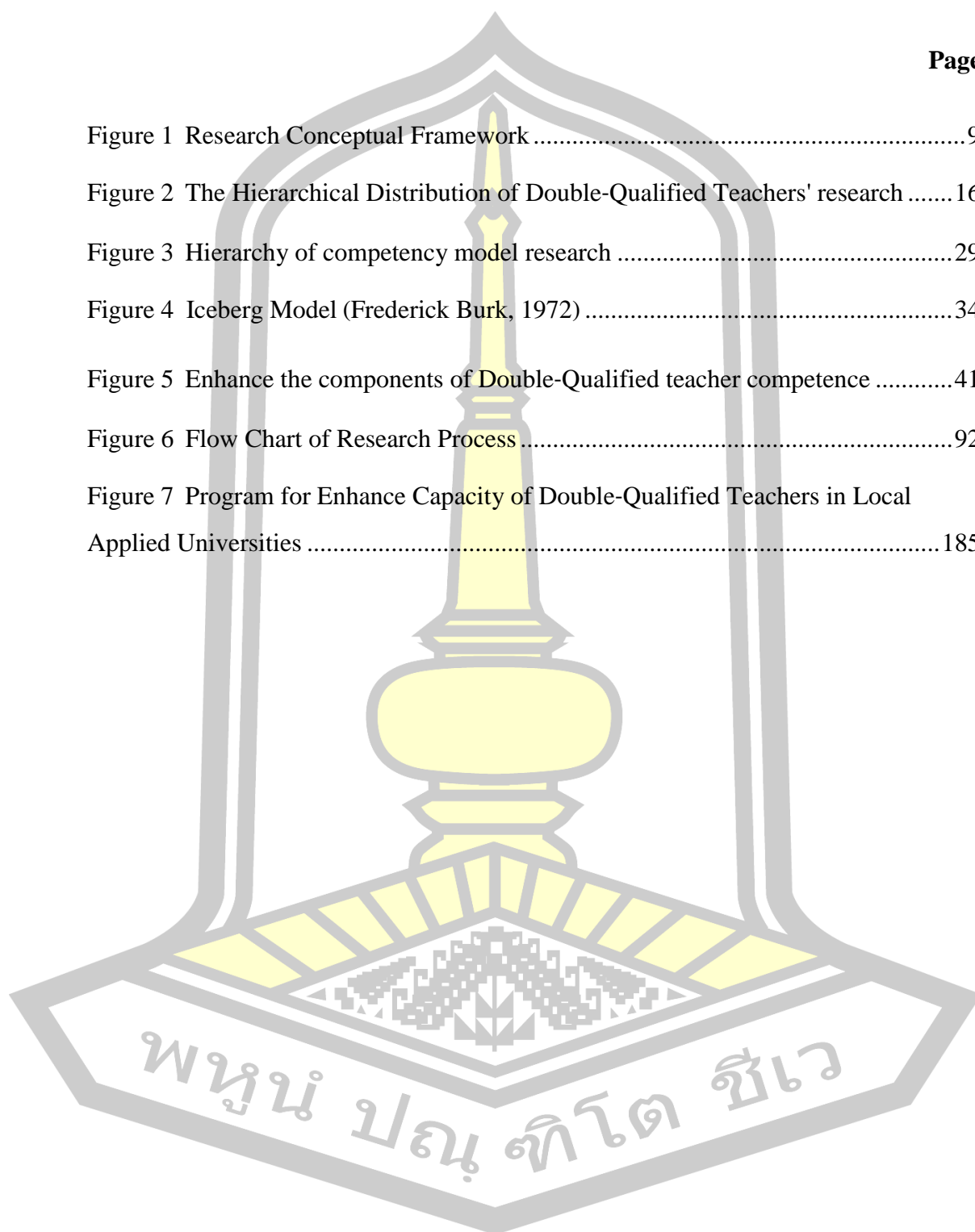
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# CHAPTER I

## INTRODUCTION

### Background

The research and practice of teacher-industry integration in western countries started earlier, and many creative results have been achieved in both theoretical research and application practice, which is also representative. (Petri Kettunen, 2022) China has gradually paid attention to the role of the integration of production and education in the field of education, but it still has certain limitations. From the perspective of research theory, most of the research on Double-Qualified teachers mainly focuses on the deep cultivation of the construction of Double-Qualified teachers in colleges and universities from the perspective of school development; From the perspective of research methods, previous scholars have mainly adopted comparative research, but neglected to demonstrate the construction of Double-Qualified teachers in Chinese universities from an empirical point of view. (Xu Zhiwang, 2020)

Oriented by the development of service industry and the needs of regional economic development, local application-oriented colleges and universities cultivate high-quality application-oriented talents. Learners' practical ability, entrepreneurial ability and employment quality are the core criteria to evaluate their educational quality. (Li Jinmei, Wang Zhijian, 2021) The Ministry of Education of China encourages large enterprises, universities and research institutes to open up innovation resources, and encourages local application-oriented universities to carry out multi-form, multi-level and multi-directional integration of industry and education. (Chen Qian, Xu Liqing, 2022) As the main force to train application-oriented talents, local application-oriented colleges and universities must rely on a group of Double-Qualified teachers with high quality and strong competence, and the quantity and



quality of Double-Qualified teachers directly determine the overall level of higher education personnel training. (Zhang Jingfang, Zhang Lijuan, 2015)

In recent years, with the transformation of China from a manufacturing country to a manufacturing power, the gap of applied talents has been expanding, and the call for improving the training quality of applied talents has become increasingly high. Training a group of high-quality applied talents has become imminent. As the main force to train application-oriented talents, local application-oriented colleges and universities must rely on a group of Double-Qualified teachers with high quality and strong competence, and the quantity and quality of Double-Qualified teachers directly determine the overall level of higher education personnel training. (Li Zheng, 2021)

Double-Qualified teachers should adopt the combination of theory teaching and practice teaching in teaching methods. In terms of knowledge specifications, it is required to have the theoretical knowledge and application theory foundation of the relevant specialty; In terms of ability specifications, both the ability of combining theory with practice and the ability of self-study are required. In terms of service, it serves regional economic and social development. Therefore, the Double-Qualified teachers in local application-oriented colleges and universities should not only have a solid "theoretical foundation" and rich subject knowledge, but also have senior "practical experience" and strong "teaching ability". (Wang Zhiqiang, Xiong Shunshun, Long Zhehai, 2021)

The demand for Double-Qualified teachers in local application-oriented colleges and universities is increasing day by day, and students' requirements for Double-Qualified teachers are getting higher and higher. However, due to the lack of unified identification standards for Double-Qualified teachers, the self-development orientation and development goals of Double-Qualified teachers are not clear, and they cannot be well qualified for their own posts. (Xu Bingmei, 2019)

Colleges and universities have been unable to improve the competence of Double-Qualified

teachers in a targeted way, and the training efficiency is low. In this paper, the Double-Qualified teachers competency model formed by the transformation plays a guiding and normative role in the development of Double-Qualified teachers, and uses empirical methods to investigate the shortcomings and causes of Double-Qualified teacher competency in local application-oriented colleges and universities, which can be more targeted to improve the Double-Qualified teacher competency. (Peng Mingrong, 2016)

According to the relevant provisions of the Measures for the Construction of Double-Qualified teachers in Baise University, Double-Qualified teachers refer to those who become intermediate teachers in our school and have any of the following conditions.

Technical title or qualification certificate issued by the state for related work (such as accountant, network engineer, statistician, auditor, economist, etc.);

In the past five years, there are two or more years (can be calculated cumulatively) in the front line of enterprises and institutions engaged in the professional practical work experience, can comprehensively guide students' professional practice and training activities; Or two or more years in the last five years (can be calculated cumulatively) to guide students in professional practice experience. (Baise University, 2019)

Therefore, for application-oriented undergraduate colleges, the core of the Double-Qualified standard is practical work ability. Practical work, practical work experience, applied technology research and practical teaching facilities construction are all proofs of teachers' practical work ability. (Li Jieliang, Xie Xiaoxue, Zhang Feng, 2019)

The researcher is engaged in education management in Baise University, mainly responsible for the training and identification of Double-Qualified teachers and

the construction of teachers. During the actual work, the researchers found that there are three main problems of Double-Qualified teachers:

In terms of teachers' professional quality, Double-Qualified teachers lack a sense of professional identity, their professional knowledge is derailed from the forefront of the industry, and their learning consciousness is not strong.

In terms of teachers' professional practice ability, Double-Qualified teachers have the problems of lack of practical experience in enterprises and lack of practice-oriented horizontal research.

In terms of teachers' teaching ability and accomplishment, Double-Qualified teachers have problems such as insufficient classroom interaction ability, outdated teaching methods, and insufficient combination of theory and practice teaching.

The construction of Double-Qualified teachers and the improvement of teachers' ability are very important for schools as application-oriented universities. The researcher study on the Double-Qualified teachers' ability improvement plan of local application-oriented universities is to provide theoretical support and a replicable realistic model for the construction of Double-Qualified teachers in other local undergraduate universities.

### **Research Questions**

This research has three questions, these are:

1. What are the constituent components and indicators of Double-Qualified teacher competence in local applied university?
2. What is the existent condition, desired condition and need Assessment of Double-Qualified teacher competence in local application-oriented university?

3. How to strengthen the competence of Double-Qualified teachers in local application-oriented universities?

### **Research Objectives**

This research has three objectives, as follows:

1. To investigate the constituent components of Double-Qualified teacher competence in local application-oriented university.
2. To explore the existent condition, desired condition and need Assessment of Double-Qualified teacher competence in local applied university.
3. To design and evaluate the appropriate program to improve the competence of Double-Qualified teachers in local application-oriented university.

### **Research Significances**

By conducting this research, it is hoped that this research will add more options that is useful to improve the Double-Qualified Teachers competency. This study would give many advantages to the following points.

#### **1. Principal**

The results of this study may be especially helpful for the Double-Qualified teachers in local applied colleges and universities to know more about the abilities that Double-Qualified teachers should have. To improve the competence of Double-Qualified teachers in order to achieve the purpose of improving education. It is not easy to improve the ability of Double-Qualified teachers, so we should improve the quality of Double-Qualified teachers. Therefore, through this study, the competence of Double-Qualified teachers is an important factor affecting the quality of education, so they must have teacher ethic, Practical ability, Teaching ability, Reflection and improvement, Teacher-student relationship.

## 2. Teacher

The research on the Double-Qualified teacher competency model in local applied colleges is helpful to enrich the competency model. Secondly, for the personnel managers of local application-oriented colleges, the results of this study can not only provide certain standards for the selection of Double-Qualified teachers, but also apply them to the performance management of Double-Qualified teachers. In terms of the training of Double-Qualified teachers, the analysis of the reasons for the lack of competence of Double-Qualified teachers in this paper is conducive to digging deep causal relationship and making teacher training more targeted. Finally, for the Double-Qualified teachers in local application-oriented colleges and universities, this study can point out the direction of personal development and contribute to the Double-Qualified teachers. Teachers take this as a contrast, so that they can improve their competence purposefully and step by step.

## 3. Future Research

In the field of education, the research on teacher competence has become a major topic at present. This paper draws on the characteristics of Double-Qualified teachers in local application-oriented colleges. The capacity model has a certain theoretical value to enrich the Double-Qualified teacher competency model in local application-oriented colleges. Secondly, in view of the lack of competence of Double-Qualified teachers, this paper puts forward feasible improvement countermeasures by using Maslow's hierarchy of needs theory and two-factor theory, which provides a reference for the research on the method of improving Double-Qualified teachers competence.

## Scope of Research

### 1. Scope of Research

The focus of this study is to develop the training program to enhance the ability of Double-Qualified teachers. Components of teachers' teaching competency, such as 1) Proper Ethics, 2) Practical ability, 3) Teaching ability, 4) Reflection and improvement, 5) Teacher-student relationship. As a component of the training, it includes objectives, content, resources, length, teaching provision, and evaluation.

## 2. Population and Sample

First of all, this study conducted an expectation survey on the competency components and indicators of Double-Qualified teachers in Guangxi Baise University. At present, there are 526 Double-Qualified teachers in the school, including 26 school leaders, 53 professors, 127 associate professors and 320 assistant professors. Using the Yamane formula, a sample of 228 people was obtained, including 12 school leaders, 25 professors, 65 associate professors, and 126 assistant professors. In order to achieve the purpose of the study, the researchers divided the study into three phases, there were:

Phase1: The researchers investigated the components and indicators of the competence of Double-Qualified teachers in Guangxi Baise University, and verified them by 5 experts.

Phase2: To explore existent condition, desired condition and need Assessment of research on the Double-Qualified teacher competency in local applied university in Baise, Guangxi province, involving about 228 samples of Double-Qualified teachers.

Phase3: The researchers designed a scheme to improve the competence of Double-Qualified teachers and assessed it by 5 supervision experts.

## Theoretical Framework

The focus of this study is to develop the training program to enhance the ability of Double-Qualified teachers. Henan province, including Ethic, Practical ability, Teaching ability, Reflection and improvement, Teacher-student relationship.

1. Proper Ethics. Including teachers' integrity and honesty; privacy and respect; abide by the law; good team work ability; supervision and self-supervision.
2. Practical ability. Including improving teachers' technical skills; problem-solving ability; hands-on experience ability; tool and equipment proficiency ability; feedback and improvement.
3. Teaching ability. Including teachers' Teaching design; pedagogical knowledge; communication skills ability; classroom management ability; continuous learning.
4. Reflection and improvement. Including teachers' self-knowledge; learning and growth; decision making; find the problem; summary analysis.
5. Teacher-student relationship. Including concern for students' academic growth; Give students emotional support; Social skills; Ability to guide students; The development of behavior.

After defining the Double-Qualified teachers in this paper, the Double-Qualified teacher competency model in higher vocational colleges "(Zhao Yanyun, 2018) is used for reference, and on this basis, the model is appropriately reformed to make it conform to the competency characteristics of Double-Qualified teachers in local application-oriented colleges. Then the questionnaire was designed according to the competency components, including the personal information of teachers and the competency question scale (Yang Hui, 2018). By issuing questionnaires to understand the situation of Double-Qualified teachers in local application-oriented colleges and universities, and other software were used to conduct in-depth analysis of the



problems and use relevant theories to analyze the causes of the problem insufficient competence of Double-Qualified teachers in local application-oriented colleges.

In this study, researchers conducted research based on the following framework shown in Figure 1.

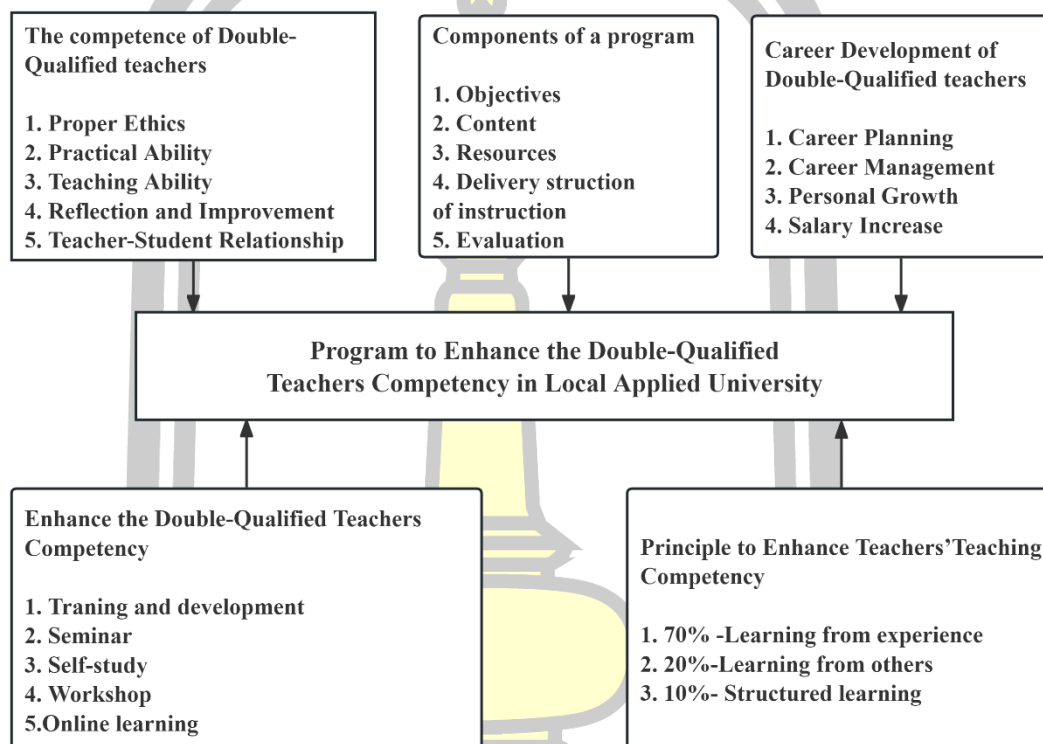


Figure 1 Research Conceptual Framework

### Definition of terms

**1. Double-Qualified teachers** refers to educators who possess dual professional competencies, characterized by high levels of expertise in both teaching and practical application. These teachers have not only theoretical knowledge but also extensive practical experience, enabling them to integrate theory and practice to enhance teaching effectiveness. Specifically, Double-Qualified Teachers typically have the following characteristics:



**1.1 Dual Professional Titles** refers to teachers usually hold academic titles in their respective fields, such as associate professor, lecturer, etc. Simultaneously, they also hold relevant titles or certifications in their practical work field, such as engineer, technical expert, etc., which reflects their practical abilities in the profession.

**1.2 Dual Certificates** refers to teachers possess teaching qualifications or related educational training certificates. They also hold relevant vocational qualifications or technical certifications in their teaching subject area.

**1.3 Dual Abilities** refers to teachers have a deep understanding of and can convey the theoretical knowledge of their subject. Teachers possess substantial practical experience and can demonstrate professional skills in real-world scenarios, incorporating these experiences into their teaching.

**1.4 Dual Experience** refers to teachers have rich practical experience in teaching, including classroom instruction and curriculum design. Teachers also have practical work experience in their relevant industry, allowing them to bring the latest industry developments and real-world problems into the classroom.

**2. Double-Qualified teacher competence** refers to teachers need to have good Proper Ethics, be role models and care for students. Have rich Practical ability to guide students to carry out practical operations and improve students' practical skills. Have solid theoretical Teaching ability and be able to systematically impart professional knowledge. Able to carry out Reflection and improvement and have a good Teacher-student relationship, which has 5 components:

**2.1 Proper Ethics** refers to teachers is the code of conduct and necessary moral quality that teachers follow in their educational work. It includes not only the norms and standards that teachers should follow in their professional activities, but also the beliefs and pursuits that teachers should hold for the cause of

education. The Ethics of teachers include respect for students, educational faith, professionalism, honesty and trustworthiness, fairness and incorruptibility, leading by example and cooperative spirit. These qualities are the basic moral norms that teachers should follow in their educational practice, and are also important standards for evaluating teachers' work.

**2.2 Practical ability refers** to the capacity to apply knowledge and skills to real-world situations or tasks effectively. Practical ability is often developed through hands-on experience, training, and practice. In many professions and fields of study, having a strong practical ability is essential because it ensures that an individual can translate what they've learned in a classroom or training environment into actionable results in a real-world context.

**2.3 Teaching ability refers** to the set of skills, knowledge, and attributes that enable an individual to effectively facilitate learning and impart knowledge or skills to others. It encompasses a wide range of competencies that go beyond just subject matter expertise. Able to use scientific teaching concepts and teaching methods, effective use of modern information technology to carry out teaching, so that students grasp a solid theoretical foundation.

**2.4 Reflection and improvement refers** to reflection is the process of introspection, analyzing, and evaluating experiences, decisions, and actions. It's about looking back and understanding the reasons behind certain actions and their outcomes. Improvement refers to the process of becoming better, enhancing skills, knowledge, behaviors, or processes.

**2.5 Teacher-student relationship refers** to the teacher-student relationship is a foundational element in the educational process and plays a crucial role in shaping a student's academic and personal development. This relationship is multifaceted and can influence not only academic achievement but also the emotional and social growth of students.

**3. Local applied colleges and universities refers** to according to the orientation of colleges and universities to cultivate talents, the types of colleges and universities are divided. In addition to having the characteristics of application-oriented colleges, local application-oriented colleges also have strong regional characteristics and serve the regional economy. which are generally supported by local financial funds allocated by local administrative departments.

**4. 70:20:10 Model refers** to learning and development that makes recommendations about how people learn and develop in the most effective ways. The model is based on three main sources of learning: 1) 70% of learning comes from actual work experience; 2) 20% of learning comes from others; 3) 10% of learning comes from formal education and training.

**5. Need Assessment refers** to the process of identifying and evaluating the needs or gaps within a specific context or group to determine what is required to address those needs effectively. This assessment helps in understanding the existing conditions, determining priorities, and developing strategies or interventions to meet those needs. It is often used in various fields such as education, healthcare, business, and community development to ensure that resources and efforts are aligned with the actual requirements of the target population or situation.

**6. Program to enhance the Double-Qualified teacher competency refers** to a set of activities related to enhancing the Double-Qualified teacher knowledge, abilities, competencies. The components of the program consist principles, objectives, content, development process and evaluation.

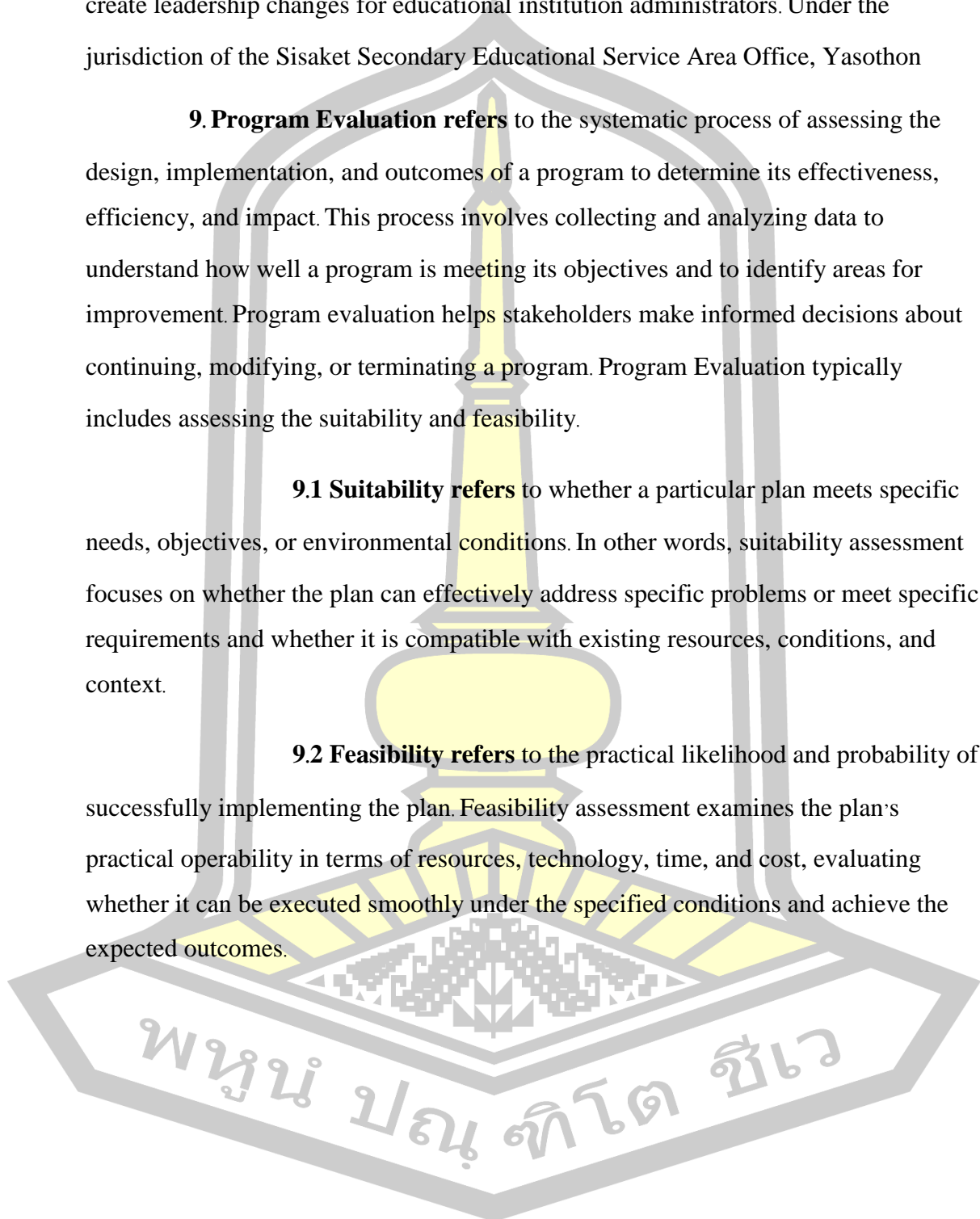
**7. Existence condition refers** to the level of practice. About the Adaptive Leadership of educational institution administrators Under the jurisdiction of the Sisaket Secondary Educational Service Area Office, Yasothon

**8. Desired condition refers** to the level of need. That shows the need to create leadership changes for educational institution administrators. Under the jurisdiction of the Sisaket Secondary Educational Service Area Office, Yasothon

**9. Program Evaluation refers** to the systematic process of assessing the design, implementation, and outcomes of a program to determine its effectiveness, efficiency, and impact. This process involves collecting and analyzing data to understand how well a program is meeting its objectives and to identify areas for improvement. Program evaluation helps stakeholders make informed decisions about continuing, modifying, or terminating a program. Program Evaluation typically includes assessing the suitability and feasibility.

**9.1 Suitability refers** to whether a particular plan meets specific needs, objectives, or environmental conditions. In other words, suitability assessment focuses on whether the plan can effectively address specific problems or meet specific requirements and whether it is compatible with existing resources, conditions, and context.

**9.2 Feasibility refers** to the practical likelihood and probability of successfully implementing the plan. Feasibility assessment examines the plan's practical operability in terms of resources, technology, time, and cost, evaluating whether it can be executed smoothly under the specified conditions and achieve the expected outcomes.



## CHAPTER II

### LITERATURE REVIEW

The literature review is the second part of this thesis, which presents the core concepts of the research field by abstracting and integrating them from theoretical and empirical research. This chapter provides specific theories of relevance to expand the field of research. Through the introduction and description in this chapter, the reader will learn more about the limitations of research underpinned under resources and other sources. Furthermore, this chapter will remind researchers to try not to break away from this topic. The outline of literature review is mentioned below:

#### 1. The Related Research of Double-Qualified Teachers

1.1 Research on the concept of Double-Qualified teachers

1.2 Research on the development process of Double-Qualified teachers

1.3 Research on the training mode of Double-Qualified teachers

#### 2. Competency

2.1 Competency characteristics

2.2 Competency related research

2.3 Research on competency model

2.4 Research on the application of competency model

2.5 The enhance Double-Qualified teacher competence

2.6 A study on the competence of Double-Qualified teachers

1) Proper ethics

2) Practical ability

3) Teaching ability

4) Reflection and improvement

5) Teacher-student relationship

3. Career Development

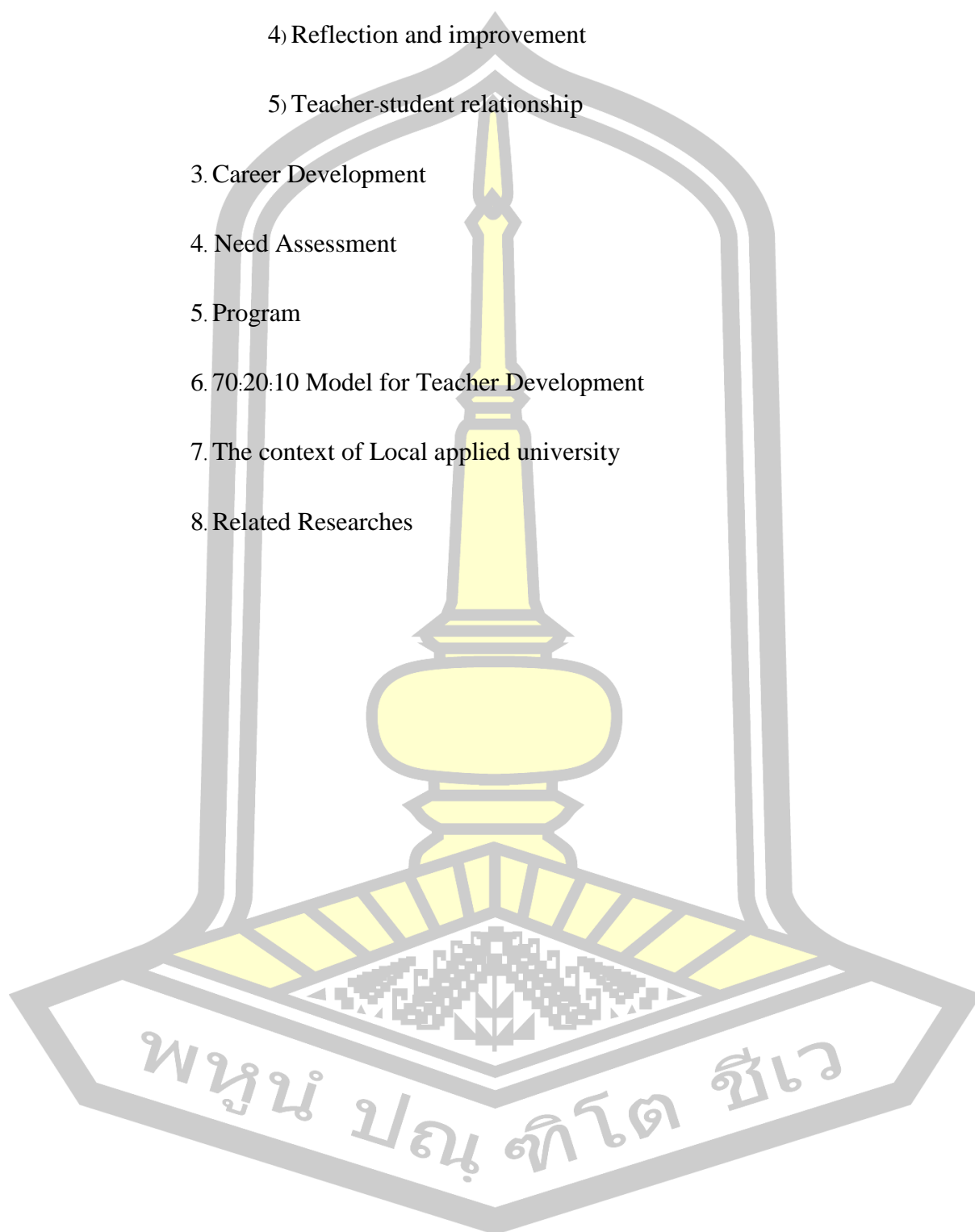
4. Need Assessment

5. Program

6. 70:20:10 Model for Teacher Development

7. The context of Local applied university

8. Related Researches



## The Related Research of Double-Qualified Teachers

Excellent Double-Qualified teachers are the key to ensuring the teaching quality of local application-oriented colleges and universities and cultivating higher application-oriented talents. In recent years, many scholars have done research on the competence of Double-Qualified teachers. By searching Double-Qualified teachers as the search term on CNKI, a total of 9570 literatures have been collected, and the specific distribution diagram is shown in Figure 2. In terms of the distribution of research levels of Double-Qualified teachers, the basic research level has the largest number and the largest proportion of research literatures, with 4106 literatures, accounting for 43% of the total literatures. The second is the industry guidance level, the number of literature is 2247, accounting for 24% of the total number of literature; The number of literature at the higher education level is 1275, accounting for 13% of the total literature number, indicating that the research on Double-Qualified teachers in the field of higher education is still insufficient, and there is great potential for further research.

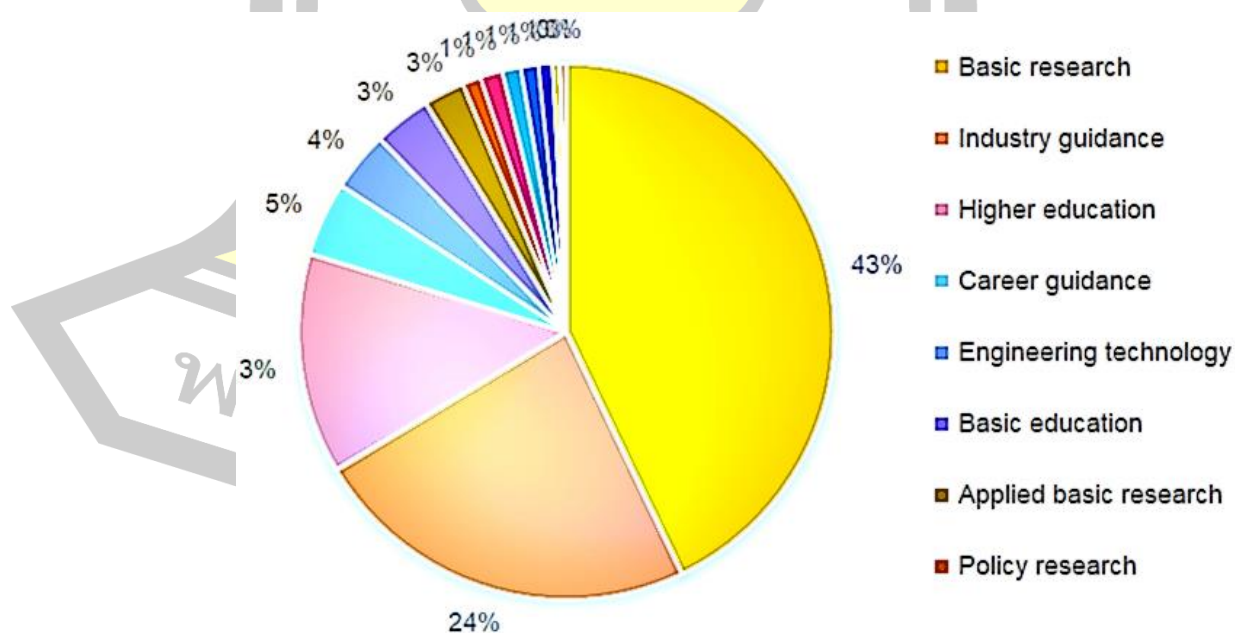


Figure 2 The Hierarchical Distribution of Double-Qualified Teachers' research



Through reading and combing relevant literature on Double-Qualified teachers, it is found that scholars' researches mostly start from the concept definition of Double-Qualified teachers, and there are also many research results on the construction of Double-Qualified teachers competency model. There are also some literature focused on the recruitment and training of Double-Qualified teachers based on competency theory. In general, the literature on the research of Double-Qualified teachers mainly focuses on the following aspects.

### **1. Research on the concept of Double-Qualified teachers**

There is no such thing as Double-Qualified teachers in foreign research literature, but there are similar concepts to Double-Qualified teachers, such as "dual teacher system" in Germany, "professional guidance coach" in Japan and so on. (Hu Ting, 2018) The "dual system" includes two kinds of relations, namely: The relationship between schools and enterprises, and the relationship between students and apprentices. In schools, "dual-system teachers" are responsible for teaching students professional knowledge; in enterprises, students act as apprentices, and "dual-system teachers" act as masters to help students learn practical skills. This learning method improves students' learning efficiency and reduces enterprise labor costs. (Frankfurt, 2000) (BMBF, 1997) The term "career coach" in Japan refers to specialists who conduct skills training for employees in an enterprise. In addition to necessary knowledge teaching, employees also need to be trained in operational ability to meet the needs of production. (Taniguchi Yuji, LAN Xin, 2017)

In China, Wang Yicheng first proposed the concept of Double-Qualified teachers in his article "Building a 'Double-Qualified' teacher Team to Meet the needs of specialized teaching" in 1991. He believes that Double-Qualified teachers are "teachers and engineers." (Wang Yicheng, 1991) The definition of this concept was highly recognized in the field of vocational education at that time, and the more



common view at that time was that Double-Qualified teachers had two titles, "teacher" and "engineer".

In addition to the standard of "double titles", the academic community has other categories, such as "double certificates" theory, "double quality" theory and so on. In 1999, in the "Decision of the CPC Central Committee and The State Council on Deepening Education Reform and Comprehensively Promoting Quality Education", it was proposed to "accelerate the construction of" Double-Qualified "teachers who have both teacher qualifications and other professional and technical positions." Clearly put forward the Double-Qualified teachers is to have a teacher's qualification and other professional and technical certificates. (Deng Shiwen, 2010) This view is a typical "double certificate" theory, and having two certificates of "teacher qualification certificate" and "professional technology" can be called Double-Qualified teachers.

Cai Fen further defines the Double-Qualified teachers, he believes that Double-Qualified teachers should have at least the ability at the same time, such as: have both teaching ability and practical ability. (Cai Fen, 2018) This view is a representative of the "double quality" or "double ability" theory.

Zhu Xiaoping summarized the above definitions: 1. Double-Qualified teachers refers to the teacher must have two titles, such as: lecturer + doctor. 2. Double-Qualified teachers should have two or more abilities, such as practical ability and teaching ability. 3. Double-Qualified teachers should have two or more professional certificates, such as engineer certificates and teaching ability certificates. (Zhu Xiaoping, 2008)

## **2. Research on the development process of Double-Qualified teachers**

China's research on Double-Qualified teachers started late, but generally can be divided into three phases.

Phase one, the exploratory phase. Since 1980, China began to increase the investment in vocational education, vocational education began to start. However, since China was in the shadow of the "ten-year Cultural Revolution" at that time, the education system was seriously damaged and the teacher resources were insufficient. In order to supplement the teachers, the state selected professional and technical talents to meet the teaching requirements in various industries to serve as teachers in higher vocational colleges, and began to have the rudiments of Double-Qualified teachers. In 1987, the country put forward the concept of Double-Qualified teachers for the first time, and made a certain distinction between Double-Qualified teachers and ordinary teachers, and began to have some requirements for the training of Double-Qualified teachers. Thus, "two divisions the research on the concept of "Type" teachers and the training of Double-Qualified teachers began to start. (Chen Li, 2015)

The second phase is steady development. After 1990, the state determined the status of vocational education through the "three supplements and one reform" and the "Vocational Education Law", and then introduced a series of policies which greatly encouraged vocational colleges to explore the mode of independent development. With the support of such policies, both the national education administration and schools have actively explored the Double-Qualified teachers, and the concept of Double-Qualified teachers has been greatly promoted and entered the public's vision. (Fang Tongqing, 2003) The "Vocational Education Law" has established the important position of Double-Qualified teachers, and the construction of Double-Qualified teachers has entered a period of steady development.

The third phase, connotation enhancement period. In 1997, the "Several Opinions on Strengthening the Construction of Vocational Education Teachers" and in 2002, the "Opinions on Strengthening the construction of higher vocational (higher vocational) colleges and universities" promoted the development of Double-Qualified teachers, encouraged colleges and universities to introduce qualified enterprise

talents, and advocated teachers to participate in enterprise training. It further defines the channels and measures for the construction of Double-Qualified teachers. (State Education Commission, 1998)

### **3. Research on the training mode of Double-Qualified teachers**

In order to improve the quality of Double-Qualified teachers, the training of Double-Qualified teachers is an essential link. Many scholars have done research and exploration on the training of Double-Qualified teachers, and there are mainly several training modes.

#### **3.1 School-based training mode.**

School-based training mode refers to the teacher training plan formulated within the school according to its own situation. The advantage of the school-based model is that the time is flexible and the training content is highly targeted. School-based training is mainly aimed at the shortcomings of teachers in the school, to solve the actual needs of the school, and to solve the problems of the school in essence. Schools can reasonably arrange training according to teachers' spare time, and conduct individual training according to teachers' professional categories, and the training time is very flexible. (Wu Jiayu, Xie Pinghua, Zhang Hongxian, 2008)

#### **3.2 Mode of industry-university-research cooperation.**

Industry-university-research cooperation refers to the cooperation mode between institutions of higher learning, enterprises and research institutes. Usually, under the technical needs of enterprises, institutions of higher learning, research institutes and research institutes cooperate to develop technologies that meet the production needs of enterprises, and its essence is the effective combination of various production factors required to promote technological innovation.

#### **3.3 School-enterprise cooperation model.**

School-enterprise cooperation mode is a win-win mode of cooperative teaching and production between schools and enterprises. Liu Guanfa et al. believe that the school-enterprise cooperation model can not only meet the needs of school teaching but also reduce the production cost of enterprises. Through the school-enterprise cooperation model, application-oriented talents can be cultivated on a large scale and efficiently. (Liu Guanfa, 2018)

### **Competency**

The origins of competency research can be traced back to the late 1960s, when the "intelligence" doctrine was questioned and it was found that success on early ability tests often depended on memory and sustained learning endurance. Moreover, the final score is closely related to the learning environment of the tested person, the test person's position on the question, and different test places, which even includes many accidental factors. As a result, the performance of people who are considered competent is often disappointing. A further question is whether, even if as accurate a measure as possible could be used, the results of such measures-even those of an individual's abilities that have been accurately appraised -are predictive of individual success.

In response to this situation, Professor David McClelland, professor of psychology at Harvard University and founder of the consulting firm McBer (which later became the famous international management consulting firm Hay-McBer), and his team conducted extensive research. It argues that traditional theoretical tests simply fail to predict job performance and individual success, and are unfair to minorities, women, and people from lower social classes. At the same time, they found that characteristics such as "achievement motivation," "interpersonal understanding," and "team influence" fundamentally affect individual performance. He proposed abandoning this traditional evaluation method and argued that researchers should try to find a variable that is both successful and unbiased, and then develop an

objective and describable method for identification. It was in this context of egalitarian motivation that McClelland developed the competency-based concept. It can be seen that from the very beginning, the concept of competency aims to be future-oriented, performance-oriented, objective and operable. In 1973, Professor McClelland published an article entitled "Measuring Competence, Not Intelligence", which laid the foundation for the birth of competency theory. (David D. Dubois, 2005)

Since the concept of competency came into being, it has been widely concerned by the academic and theoretical circles. So far, different scholars have different views on its definition.

In the United Kingdom, researchers often link work behavior with competencies, and connect competencies with national vocational qualifications (NVQS), management charter initiative (management charter initiative), and national vocational qualifications (NVQS). MCI is linked to the national standard, which constitutes the reference work standards developed by official and management academic organizations. This definition tends to be based on industry standards and labor relations, and is not concerned with individual performance.

Here is the definition of "competency" we found in various literature:

1. Knowledge, skills, abilities, traits, or motivations that are directly similar to or related to work or job performance or other important outcomes in life (McClelland, 1973).
2. The underlying characteristics that an individual possesses that lead to outstanding performance in a job, such as motivation, traits, skills, self-image or social role, or the knowledge entity he uses (Boyatzis, 1981).
3. The underlying characteristics of individuals associated with effective or outstanding job performance, including five levels: knowledge, skills, self-concept, traits, and motivation (Lyle. M Spencer, 1993).

4. Credibly measured motivations, traits, self-concepts, attitudes, values, knowledge, identifiable behavioral skills, and personal traits that distinguish high performers from average performers. (Spencer McClelland, 1994)

5. A mixture of knowledge, skills, abilities, motivations, beliefs, values, and interests (Fleishman, Wetrongen, Uhlman, and Marsnall Mies, 1995).

6. Knowledge, skills, abilities, or characteristics associated with high performance in a profession (Mirabile, 1997).

7. A written description of measurable work habits and personal skills used to achieve work objectives (Green, 1999)

The most widely used of these is the concept proposed by Spencer McClelland in 1994, which Outlines that the use of competency - documenting the core factors that distinguish high performers from average performers and the main characteristics of competency - can be measured in a credible way. And the key components of competency - motivation, traits, self-concept, attitudes, values, knowledge, identifiable behavioral skills, and personal traits. (Spencer McClelland, 1994)

Professor McClelland defines competency as "the deep personal conditions and behavioral characteristics that really distinguish between good and bad in life achievement or job performance." American psychologist Spencer gave a more complete definition in 1993, that is, competency model refers to the deep characteristics of individuals who can have a causal relationship with the reference criterion (excellent performance or qualified performance). This concept includes three aspects of meaning: deep characteristics, causality and criterion reference.

Deep characteristics refer to the underlying characteristics of an individual that can be maintained for a considerable period of time, and can predict the behavior or thinking mode of an individual in different situations and work tasks. The basic



level is the deep motivation, characteristics, self-image, attitude or values, and of course, it also includes the superficial knowledge and skills. Causality refers to the ability of competence to cause or predict behavior or performance. Generally speaking, competency such as motivation, trait, self-concept and social role can predict behavioral response mode, and behavioral response mode will affect work performance, which can be expressed as intention-behavior-result. Criterion reference refers to the ability to predict the performance of criterion group according to a certain standard. Criterion reference is a very key content in the definition of competency. A competency cannot be called competent if it does not predict meaningful differences and has no clear causal relationship with the referenced criterion.

### **1. Competency characteristics**

On competency, McClelland (1973) summarized the following five characteristics:

1. The best way to understand performance is to look at what people actually do to achieve success (i.e., competency), rather than relying on assumptions based on underlying traits and characteristics such as intelligence.
2. The best way to measure and predict performance is to have people demonstrate the key aspects of competency that you want to measure, rather than administering a quiz to assess underlying traits and characteristics.
3. In contrast to competencies, which can be learned and developed, traits and characteristics are inherited and difficult to change.
4. Competency is visible and understandable, and people can understand and develop the level of competency necessary to achieve performance.

5. Competency is associated with meaningful life outcomes that describe the way people are bound to behave in the real world, not some esoteric mental trait or construct that only psychologists can understand. (Mc Clelland, 1973)

Teacher competency refers to the key abilities, knowledge and skills required by teachers to effectively complete their educational and teaching tasks. These competencies relate not only to teaching skills, but also to the ability to build relationships with students, parents and colleagues (Drossel et al, 2017), as well as to engage in self-reflection (Beka et al, 2021) and continuing professional development (Aljuzayri, 2021).

Teacher competency typically includes the following key areas:

1. Teaching knowledge and skills: This includes knowledge and skills in curriculum design, teaching methods, assessment, and feedback. (Zhao Yanyun, 2019)
2. Classroom management: Effectively manage the classroom environment to ensure student participation and learning.
3. Relationships with students: Establish and maintain positive relationships with students to support their learning and development. (Wang Zhiqiang, Xiong Shunshun, 2021 )
4. Professional development: Continuously updating and expanding one's educational knowledge and skills. (Wang Guangming, Wei Qian ping, 2019)
5. Collaboration with parents and community: Work with parents, guardians, and community members to support student learning.
6. Self-reflection and evaluation: Regularly reflect on and evaluate your own teaching practice for continuous improvement (Farizan Binti Che Musa, et al, 2019).



## 2. Competency related research

Competency model is a framework or structure used to describe and measure the key competencies, knowledge, and skills required of an employee in a specific job role (Aija Staškeviča, et al, 2019). Competency models typically include a well-defined set of competencies or traits that are considered critical to success in a particular role or organization. The main components of the competency model include:

- 1) Knowledge: information or facts that employees need to know, such as laws, product knowledge, or market trends (Dwi Yoga Ari Wibowo, et al, 2021).
- 2) Skills: Abilities that employees need to perform tasks or activities, such as programming, data analysis, or sales skills (Riska Dwi Yolanda, et al, 2021).
- 3) Competence: Inherent traits or behaviors that employees exhibit at work, such as teamwork, leadership, or problem solving (V. Barvinok, et al, 2022).
- 4) Other traits, such as attitudes, values, motivations, or beliefs, that may affect an employee's work performance.

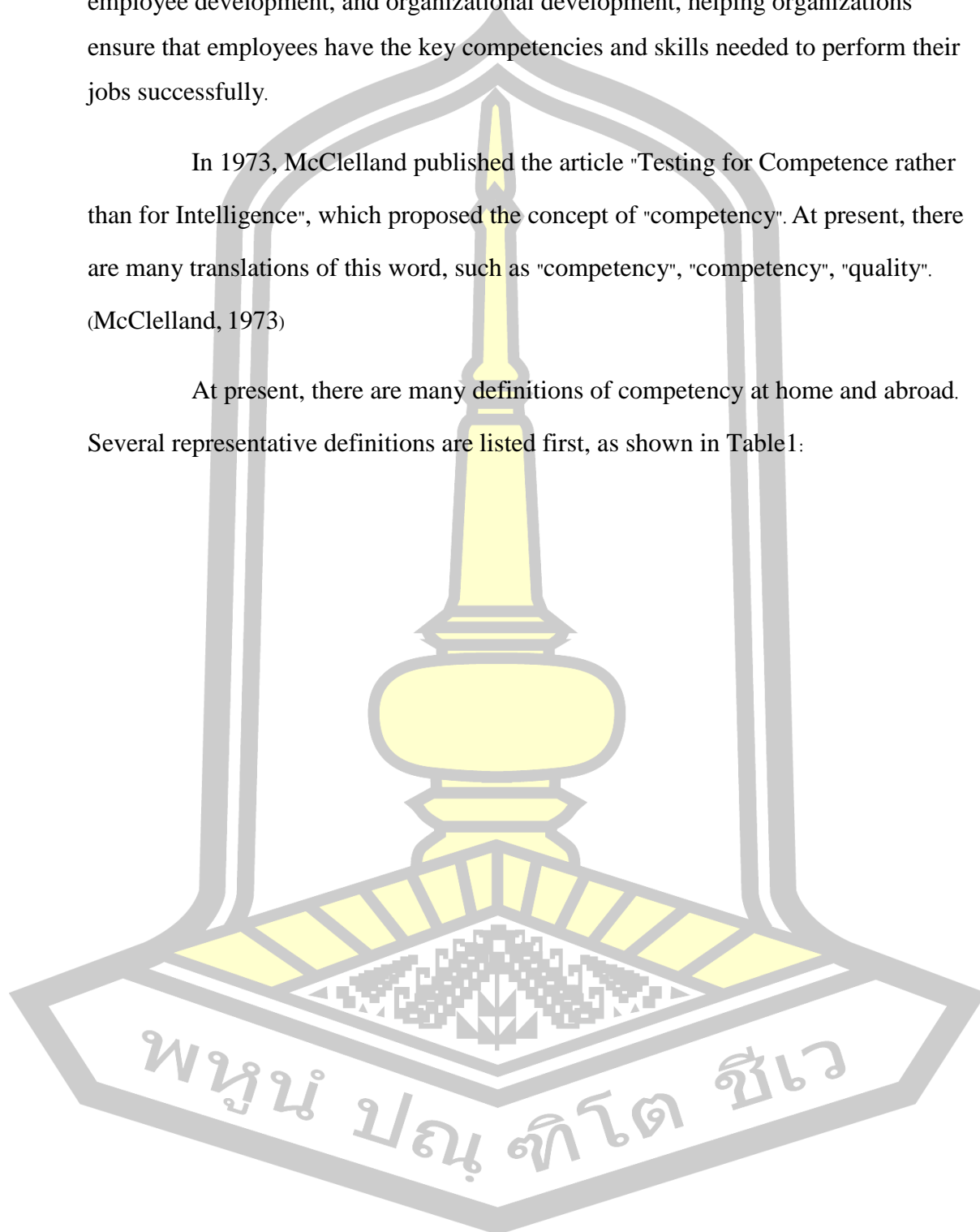
The main purpose of the competency model is to:

- 1) Provide an organization with a clear and consistent framework for defining and measuring employee performance (Yulianah, et al, 2022).
- 2) Help the organization identify the needs for employee development and training (Ronald Regen, et al, 2020).
- 3) Provide guidance for recruitment, selection, promotion and performance management (S. Suherman, et al, 2022).
- 4) Enhance employees' career development and career planning (Gede Pronajaya, et al, 2021).

The competency model plays a key role in human resource management, employee development, and organizational development, helping organizations ensure that employees have the key competencies and skills needed to perform their jobs successfully.

In 1973, McClelland published the article "Testing for Competence rather than for Intelligence", which proposed the concept of "competency". At present, there are many translations of this word, such as "competency", "competency", "quality". (McClelland, 1973)

At present, there are many definitions of competency at home and abroad. Several representative definitions are listed first, as shown in Table1:



1973	McClelland	Personal conditions and behavioral characteristics derived directly from primary sources that truly distinguish between good and bad in terms of life achievement or job performance under study.
1980	P.Mclagan	The knowledge, skills and abilities necessary to perform the main tasks.
1982	R.Boyatzis	The underlying characteristics of an individual that produce effective or superior work performance may be motivations, traits, skills, self-image or social roles, or the knowledge entities he uses.
1993	Spencer	Potential and measurable individual characteristics, such as motivation, attitudes, values, self-image, knowledge, skills, etc. that distinguish top performers from average performers in a particular role (or organization or culture).
1996	Bayham&Moyer	All work-related behaviors, motivations, and knowledge can be divided into behavioral competencies; Knowledge competency: motivational competency
2001	Zhong Mingwang	Characteristics such as personality, values, motivation, knowledge, skills, and abilities that lead to effective management performance.
2002	Shi Kan	The underlying, persistent behavioral characteristics of an individual that distinguish between high and low performers in a position. These characteristics can be cognitive, conscious, attitudinal, emotional, motivational, or tendentious.
2007	Huang Xunjing	The knowledge, skills, abilities, personality, and motivation required to perform well in an organization are those qualities that can be observed and measured.

Table 1 Summary of competency definitions at home and abroad

After the concept of competency was put forward, people increased the study of competency theory, and built various competency models according to the competency theory. The wide application of competency models greatly improved the management level and work efficiency of all walks of life. Nowadays, competency model has become an indispensable tool in human resource management, and the research on competency model is also ongoing. Before the research, this paper conducted a search on the "competency Model" on the "China National Knowledge

Network", and collected a total of 4867 literatures. The collected literatures were classified into research levels. Please refer to Figure 3 for specific distribution. At present, the level of basic research, which accounts for the largest proportion of "competence" research, has reached 2317 articles, accounting for 48% of the total. The second is the industry guidance research level, the number of literatures is 962, accounting for 20% of the total number of literatures; Next is the vocational guidance level, the number of literature is 731, accounting for 15% of the total literature; The number of literatures at the policy research level was 224, accounting for 5% of the total literatures. The number of engineering literature is 178, accounting for 4% of the total literature. The number of literatures at the technical guidance level of the industry is 142, accounting for 3% of the total literatures, and the number of literatures at the higher education level is 139, accounting for only 2.9% of the total literatures, indicating that the competency model research for higher education still has shortcomings and needs to be further improved.

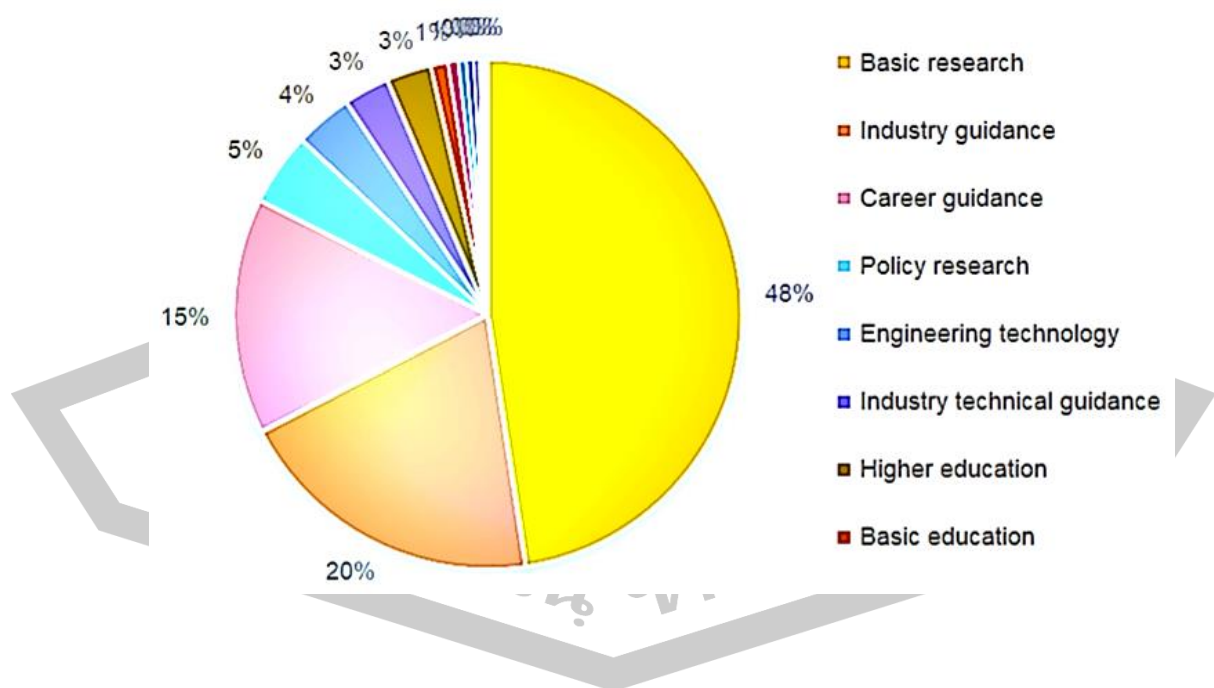


Figure 3 Hierarchy of competency model research

### 3. Research on competency model

The research of competency model first arose abroad, and the thought of competency originated in ancient Rome. The ancient Roman people once constructed a competency model graph for the attributes that fit the "good Roman warrior", which can be regarded as the earliest origin of the competency model. In the early 1970s, Professor David McClelland of Harvard University put forward the concept of competency, pointing out that competency is a set of ability characteristics possessed by those who perform well in a specific working environment and team cooperation, which is often associated with work efficiency and work results, and has a certain predictability. (McClelland, 1973) After that, more scholars gave a new definition of competency. For example, Sebens believed that competency refers to the relationship between employees' personality characteristics and job performance, and personality characteristics determine the level of performance. Blonder believes that in addition to the external characteristics of an individual that can be linked with competence, the intrinsic characteristics of an individual are the real factors that really determine the level of performance, such as the role orientation of an individual, motivation, etc. These intrinsic characteristics cannot be easily measured but are the determining factors of whether an employee is competent for a certain job. (Carl O Olson, 2000)

On the indicators of teacher competence, foreign scholars have also done some related research. Dutch educator Danke believes that teacher competency is a cluster of teacher characteristics, professional knowledge, teacher practice and teaching skills. (Jorgen Sanberg, 2000) Donald M. edley found through research that the competence of college teachers generally includes three indicators: teaching skills, professional knowledge and teacher values. (Dineke E. H, 2000) Carl, Jerry and other scholars generally believe that teacher competency is a professional theory, skill and value formed in teaching practice with colleges and universities. (Donald M, 1998)

Summarizing the definition of competency by scholars, the connotation of competency usually includes three aspects. First, it can effectively predict the work

effect of employees; Second, it is related to the working situation and dynamic; Third, the qualified and unqualified employees can be judged according to the components of competence. Meeting the above three conditions is considered competent.

The concept of competency model can be traced back to the 1970s. The first research on competency model originated in the United States, followed by the United Kingdom. Other countries also began to study competency model and gradually applied it to the human resource system of various companies, such as IBM and Microsoft. After more than 30 years of practical application, the competency model has achieved great success, and the competency theory has been widely adopted by people. (Guo Yajiao, 2018)

Some scholars have also given their own views on the research of college teacher competency model. Yamige pointed out that teachers in vocational colleges should possess three basic competency characteristics: Ethics, professional knowledge and practical skills. With the development of the field of vocational education, the existent condition vocational education teachers should also have the ability of innovation, adaptability, communication ability, lifelong learning ability. (Wang Zhuoran, 2011) According to the weight value, Mndebale deals with interpersonal relationship, the relationship between development and industry, and the relationship between community. (ATTWELL.G, 1999) The above scholars' studies on competency characteristics provided certain reference value for the construction of the competency model in this paper.

In China, the relevant research on competency model started relatively late. Searching for the keyword "competency model" on CNKI, it is found that Wang Chongming and Chen Minke are the first scholars to study competency model in China. In the article "Analysis of Management Competency Characteristics: The Test of Structural Equation Model", they used the interview method to survey 220 personnel engaged in enterprise management, obtained the universally recognized competency components, and used the structural equation model to compare and



analyze the competency components, and found the differences between the competency characteristics required in different positions. (Wang Chongming, Chen Minke, 2002)

After the research of Wang Chongming and Chen Minke, many experts and scholars have studied the construction methods and components of competency model. Wei Jun of Tsinghua University obtained the competency model of commercial bank managers through research, which includes six aspects; Communication skills, interpersonal skills, presentation skills, information screening skills, self-adjustment skills, innovation skills. (Wei Jun, Zhang De, 2005) Wang Fang, Yu Li and Chen Huaxi established the competency evaluation index system of college counselors by using literature analysis and interview, and established the competency evaluation model of college counselors by using comprehensive evaluation method in "Research on the Competency Model of College Counselors". The model includes 9 competency components: teaching ability, educational knowledge, personality trait, interpersonal trait, teaching design, teaching implementation, teaching design, professional attitude, knowledge accomplishment and professional character. (Wang Fang, Yu Li, Chen Huaxi, 2018)

Yang Hui believes that teachers in colleges and universities should not only possess external skills, but also internal competency characteristics, and builds a teacher competency model based on this. Its recessive characteristics include entrepreneurial spirit, shaping ability and entrepreneurial thinking training ability. Its dominant characteristics include entrepreneurial basic teaching ability and entrepreneurial practice guidance ability. (Yang Hui, 2018)

The Double-Qualified teachers competency model of higher vocational colleges adopts the "iceberg model", and divides the Double-Qualified teachers competency components into the "explicit" part which is easy to observe and the "implicit" part which is not easy to detect. The explicit part includes knowledge, behavior, skill, etc., which can be directly observed. Implicit include motivation, self-

concept, traits, values and other parts that are not easily observed directly. According to these two parts, 50 competency components are listed, and 23 competency components are finally obtained by using questionnaire and factor analysis, which are mainly divided into three aspects: personality charm, teaching quality and practical skills. Personality charm includes five components, such as tolerance, confidence and optimism, fairness and justice, erudite and humorous. Teaching quality includes teamwork spirit, lifelong learning concept, advanced vocational education concept, classroom control ability, information technology application teaching ability, realistic and logical teaching design, curriculum reform and development ability, language expression ability, individualized teaching, communication ability; Practical skills include hands-on ability, enterprise and job demand analysis ability, enterprise practical experience, insight into industry dynamics ability, social service ability, school-enterprise cooperation consciousness, combining theory and practice teaching ability, guiding students vocational skills competition ability. (Zhao Yanyun, 2018)

There are some similarities between Double-Qualified teachers in higher vocational colleges and Double-Qualified teachers in local application-oriented colleges, so this model can be used for reference. In addition, in view of the differences between the characteristics of Double-Qualified teachers in local applied colleges and vocational colleges, this paper appropriately reformed the model, eliminated inappropriate competency dimensions and qualities through expert interviews, and added part of Double-Qualified teachers' competency qualities suitable for local applied colleges and universities. After the final reform, the Double-Qualified teacher competency model of local application-oriented colleges includes three dimensions, namely, professional accomplishment, practical ability accomplishment and teaching ability accomplishment. Professional quality includes: fair and fair treatment of students, love the teaching profession and willing to struggle for the career of education, can learn from each other, learn from excellent teachers, can accurately grasp the job responsibilities and fulfill the obligations as required, can lead by example, cultivate people, and can continue to learn cutting-edge professional



technology in the industry. Practical ability literacy includes: able to solve professional problems by oneself, often successfully declare practice-oriented horizontal topics, often participate in a variety of practical teaching activities, often participate in enterprise practice, sum up experience and constantly improve practical methods, often improve their professional practice skills, often compare notes with peers on their own professional problems, and always participate in practical training work. Teaching competence includes: being able to express their own views clearly, communicating and interacting with students frequently in class, being able to combine theory and practice in teaching, being good at developing new teaching methods, and having excellent professional knowledge reserve.

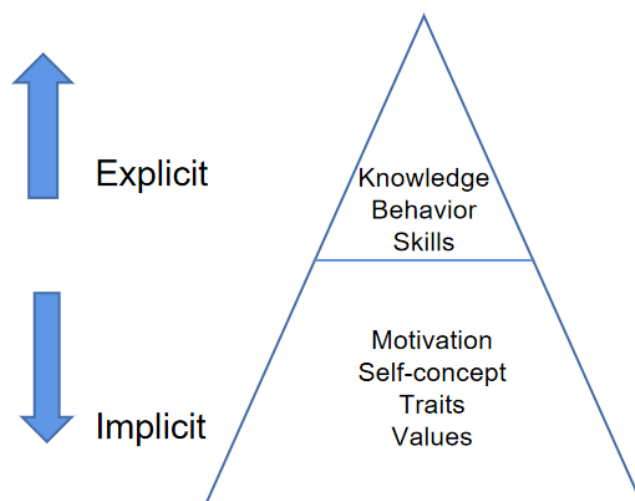


Figure 4 Iceberg Model (Frederick Burk, 1972)

#### 4. Research on the application of competency model

Through searching domestic and foreign literature, the research on the application value of competency model mainly focuses on the following three aspects. In terms of personnel selection. The competency model can measure the internal and external characteristics of individuals more comprehensively, rather than the

traditional assessment method which only focuses on the explicit characteristics of individuals. The use of competency model can help employers better select suitable talents and reduce risks. Especially under the same or similar conditions of candidates, the competency model can test deeper characteristics and help employers select the most suitable employees.

In terms of performance appraisal. Xu Anguo used the competency model to assess the performance of employees. The competency model itself has already distinguished excellent performance from ordinary indicators, and based on it, it can truly reflect the severity of an employee's problems in a certain competency factor according to the level of the competency indicator, so that employees can be trained more targeted. (Xu Anguo, 2013)

In terms of staff training. Tu Yunhai believes that the establishment of teacher competency model is conducive to providing a new standard for teacher assessment and training, and can fully understand the training needs of teachers, so as to improve teacher competency in a targeted way. In addition, the competency model intuitively presents the competency qualities required to complete the work, and the shortcomings of teachers may be found in time through model testing, so as to conduct targeted training and enhance the training effect. (Tu Haiyun, 2010)

### **5. The enhance Double-Qualified teacher competence**

According to the "Modern Vocational Education System Construction Plan" of the Ministry of Education, to improve the training system of dual-qualified teachers, by 2020, full-time and part-time teachers with practical experience should account for 60% of the total number of professional teachers. The total number of Double-Qualified teachers in local applied universities should reach at least this proportion to achieve professional development. Among the universities in Guangxi, Wuzhou University, Qinzhou University, Hechi University, Nanning University, Baise University, Hezhou University, Guangxi University of Foreign Languages,

Yulin Normal College, Guangxi Institute of Finance and Economics, Lijiang University of Guangxi Normal University, Guilin Institute of Aerospace Technology, Bowen University of Management, Guilin University of Technology, Guangxi University for Nationalities College, Guangxi Xianghu University Western University of Science and Technology, Lushan University, Guangxi University of Traditional Chinese Medicine, Sines University of New Drugs. According to the above-mentioned transformation and development work report submitted by local applied universities to the Department of Education of Guangxi Autonomous Region, it is concluded that the total number of Double-Qualified teachers in local applied universities in Guangxi is too small, and the proportion of Double-Qualified teachers in no local applied universities has reached the standard of 60%. The proportion of Double-Qualified teachers is the highest in Nanning University, accounting for 46.07%, but there is still a certain gap from the expected target of 55% in Nanning University. It is still a long way to go to strengthen the team of Double-Qualified teachers in local applied universities. The construction of local application-oriented university teachers should continue to increase the introduction and training of Double-Qualified teachers, and improve the quality of Double-Qualified teachers.

#### **6. A study on the competence of Double-Qualified teachers**

A search on CNKI titled "The competence of Double-Qualified teachers in local application-oriented colleges" found that there is no direct research in China at present, and the relevant literature mainly focuses on the construction of the competency model of Double-Qualified teachers in higher vocational colleges and the improvement of the competence of Double-Qualified teachers. Because of the similarities between vocational colleges and local application-oriented colleges, the research results can be used for reference.

Many domestic scholars have discussed the reasons and countermeasures for the lack of competence of Double-Qualified teachers. Li Hai(2018) believes that

Double-Qualified teachers in vocational colleges mainly have some problems in competence, such as weak core quality, insufficient scientific research ability and poor practical ability. In order to enhance the competence of Double-Qualified teachers in vocational colleges, we can adopt such strategies as the orientation of talent training, strengthening the assessment and broadening the training channels. (Li Hai, 2018)

Zhou Xilin, 2018 believes that there are some problems in the competence of teachers in higher vocational colleges, such as weak professional skills, lack of enterprise experience and unbalanced professional quality. Based on the theory of teacher competency, this paper puts forward some countermeasures, such as raising the recruitment threshold, establishing reasonable assessment mechanism and training mode.

Zhao Yanyun, 2018 thinks that there are some problems such as unreasonable team structure, imperfect training system and inconsistent qualification recognition. The author also puts forward some suggestions on the ways to improve the competence of Double-Qualified teachers from four aspects: selection, training, assessment and motivation.

There is no direct study on the improvement of the competence of Double-Qualified teachers in local applied universities in foreign literature. In a large number of teacher competency studies, there are more studies on the direction of teacher competency performance evaluation, and the theories related to performance evaluation are relatively mature. For example, Danny formed the competency model of college teachers through research, which linked the competency quality of college teachers with job performance and formed a set of reasonable performance assessment tools. (MNDEBELE BSC, 1997) Milanowski linked student achievement with teacher evaluation, linked student achievement with teacher performance, and built a teacher competency model based on the relationship between the two. (DANIELSON C., 1996) The competence results of his research have broadened the

field of vision and thinking for the research of Double-Qualified teachers competence in local applied colleges and universities in China.

The ability factors of Double-Qualified teachers refer to various attributes, skills and knowledge that affect the performance of Double-Qualified teachers in the process of education and teaching. These factors determine how teachers interact with students, how they impart knowledge and skills, and how they assess student progress (Pagmasuren Tsevegjav, et al, 2023). Here are some key teacher competency factors:

**Subject knowledge:** Teachers need to have a deep understanding of the subject they teach in order to ensure the accuracy and completeness of the content (Otu Bernard Diwa, et al, 2023).

**Teaching methods:** Teachers should master a variety of teaching methods and strategies to meet the learning needs of different students (Melishnee Ruthanam, et al, 2022).

**Classroom Management:** Teachers need to effectively manage the classroom to ensure an orderly, positive, and supportive learning environment (Xiaona Zhang, et al, 2022).

**Assessment and feedback:** Teachers should be able to effectively assess student progress and provide timely, specific feedback to facilitate student progress (Senin Khamis, et al, 2019).

**Relationships with students:** Establish and maintain positive relationships with students to support their learning and emotional development. (Lima, W. Northover, K., Hewitt, G., & Newell-McLymont, E.F. 2021)

**Professional Development:** Teachers should continuously seek professional development opportunities to keep their educational knowledge and skills up to date.

Work with parents and community: Work with parents, guardians, and community members to support student learning and development. (Herrenkohl, L. R., Napolitan, K., Herrenkohl, T., Kazemi, E., McAuley, L., & Phelps, D. 2019)

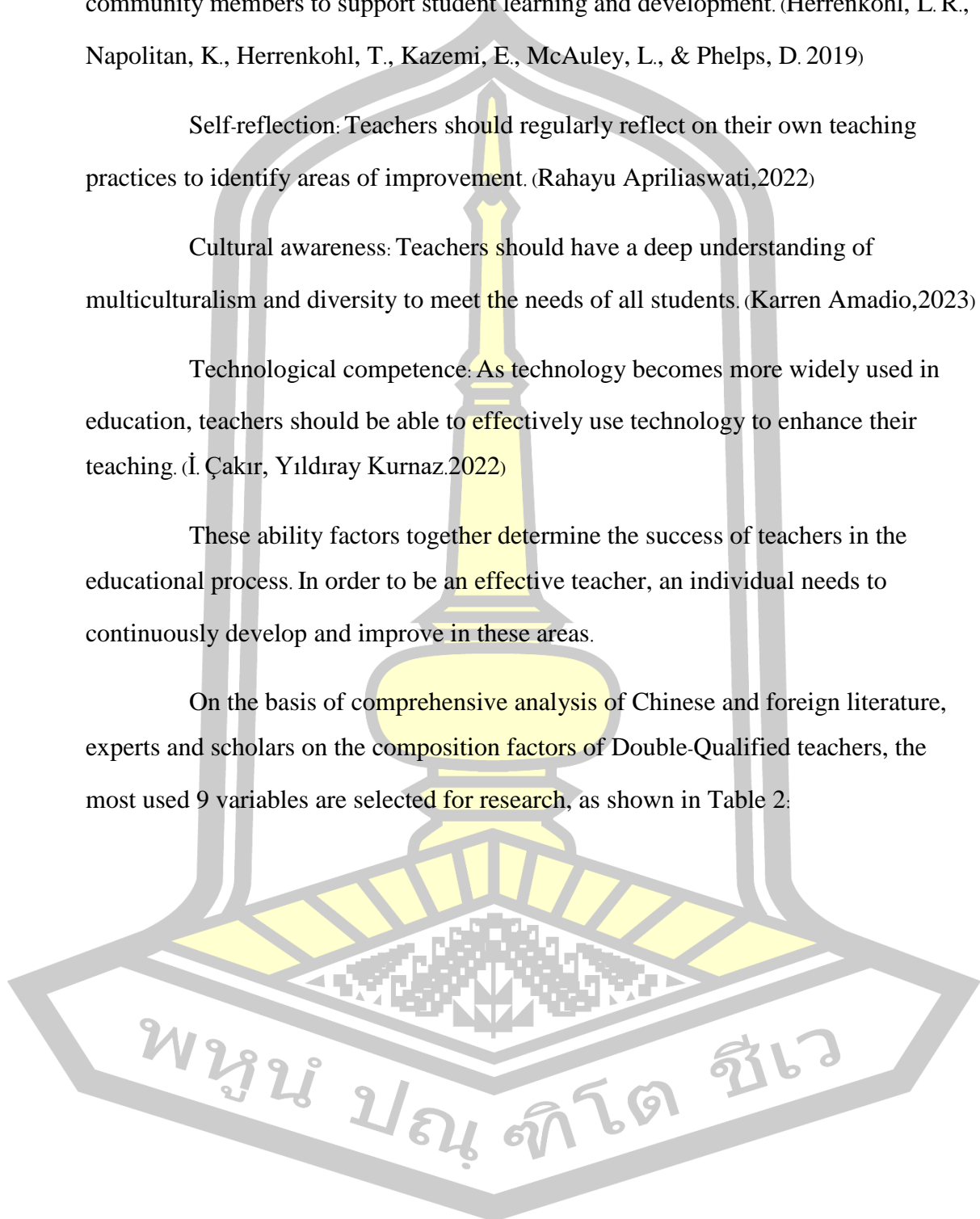
Self-reflection: Teachers should regularly reflect on their own teaching practices to identify areas of improvement. (Rahayu Apriliawati, 2022)

Cultural awareness: Teachers should have a deep understanding of multiculturalism and diversity to meet the needs of all students. (Karren Amadio, 2023)

Technological competence: As technology becomes more widely used in education, teachers should be able to effectively use technology to enhance their teaching. (İ. Çakır, Yıldırım Kurnaz, 2022)

These ability factors together determine the success of teachers in the educational process. In order to be an effective teacher, an individual needs to continuously develop and improve in these areas.

On the basis of comprehensive analysis of Chinese and foreign literature, experts and scholars on the composition factors of Double-Qualified teachers, the most used 9 variables are selected for research, as shown in Table 2:



Variable	Scholar										Score
	Zhao Yanyun (2019)	Li Zheng (2021)	Wang Zhiqiang, Xiong Shunshun (2021)	Li Zhongjing, & Ni Xiaoli (2020)	Liu Jingyue, Li Yajun (2021)	Li Xiaodong (2019)	Wang Guangming, Wei Qian ping (2019)	Feng Xufang, Zhang Guichun (2021)	Jin Lishu (2019)	Wang Qiang, Lv Yang (2022)	
Proper ethics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	9
Practical ability		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		7
Teaching ability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10
Personal characteristics		<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>	4
Creative thinking	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>						3
Scientific research ability		<input type="checkbox"/>					<input type="checkbox"/>			<input type="checkbox"/>	3
Reflection and improvement	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		7
Teacher-student relationship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8
Cooperative ability		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>				4
psychological counseling			<input type="checkbox"/>		<input type="checkbox"/>				<input type="checkbox"/>		3

Table 2 The components of Double-Qualified teacher competence



According to the summary of 5 components, we can sort out the components of Double-Qualified teacher competence as shown in Figure 5:

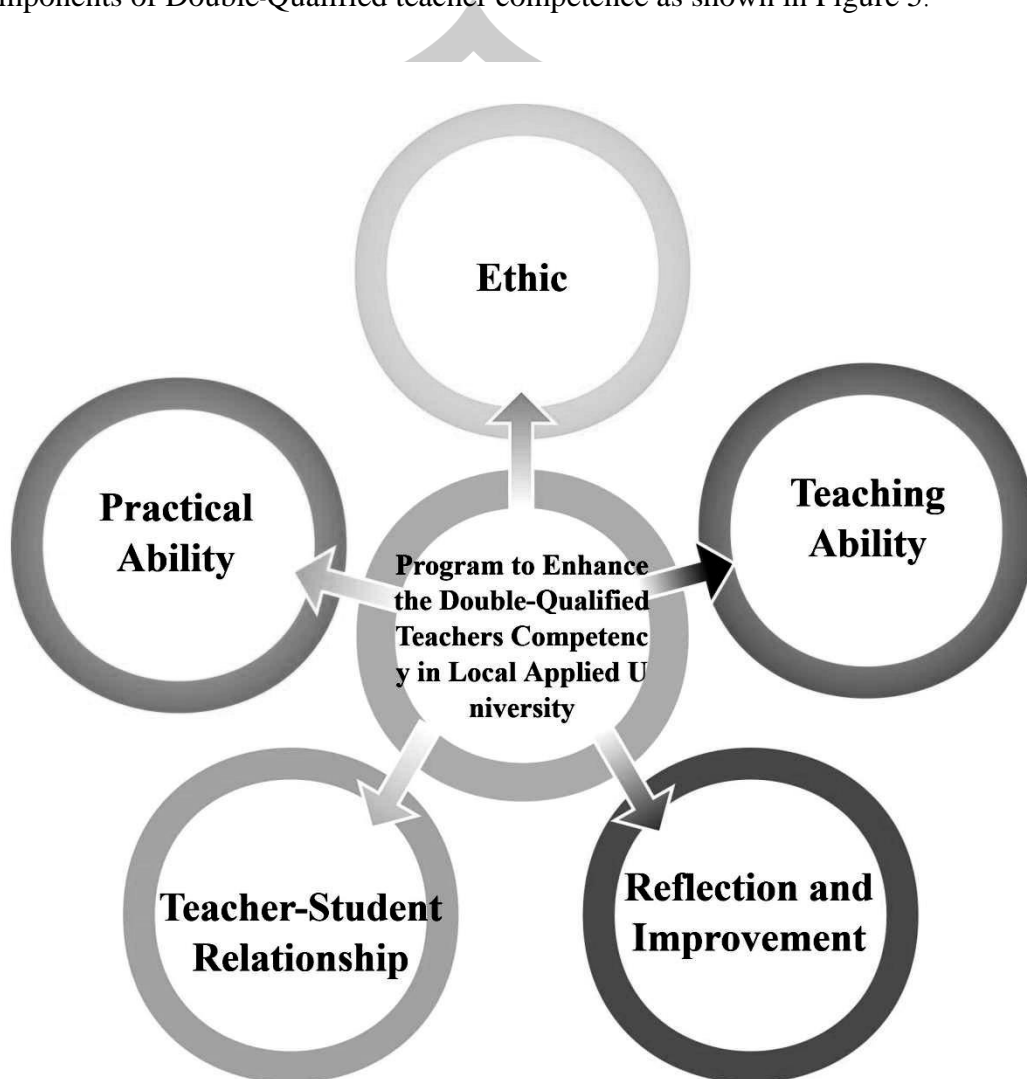


Figure 5 Enhance the components of Double-Qualified teacher competence

Following an in-depth review of the relevant literature on Double-Qualified teacher competence, more than 70% of the authors agree on the five components. The researchers identified the actual components of a Double-Qualified teachers improving competence. These areas include 1) Proper Ethics, 2) Practical ability, 3) Teaching ability, 4) Reflection and improvement, 5) Teacher-student relationship. In addition, the following sections describe the five fields described in the literature and



identify the key components to enhance the competence of Double-Qualified teachers in local applied colleges and universities.

### ***1) Proper Ethics***

Double-Qualified teachers should have a set of ethical principles and moral values to guide students to behave ethically and responsibly.

Wang Iijin, et al, (2016) believe that Integrity and honesty, Abide by the law, good teamwork and exposure to corruption are very important qualities and behaviors. First, Integrity and honesty are one of the most basic qualities of a teacher. Teachers should always be honest, do not lie, do not distort the truth, and set a good moral example by example. At the same time, teachers should also have the quality of integrity, treat students fairly and fairly, do not favor, do not discriminate, and safeguard the legitimate rights and interests of students. Secondly, obeying the law is the basic duty of every citizen. As educators, teachers should abide by laws and regulations and maintain social order. They should understand and abide by the laws and regulations related to education, such as Teachers' Law, Education Law, etc., at the same time, they should also abide by the laws and regulations of the state, and must not have any illegal and criminal behavior. In addition, the ability to work in a team is also one of the necessary qualities for teachers. Education is a collective enterprise that requires close cooperation among teachers to accomplish teaching tasks together. Teachers should have a good sense of teamwork, actively participate in team activities, and support each other and make progress together with other teachers. Finally, the disclosure of corruption is the embodiment of teachers' social responsibility. Teachers should adhere to the bottom line of honesty and self-discipline, not participate in any corruption, but also dare to expose corruption, actively report illegal acts, and safeguard fairness and justice and the healthy development of education.

Kulhanek, A. J, & Bodnar, C. (2017) believe that Teacher's professional quality is a comprehensive concept, which involves many aspects such as teacher's thought, morality and behavior. Experts believe that student-centered, compliance with the law, and supervision and self-supervision are the core elements of teacher professionalism. These elements not only help to improve the professional level of teachers, but also help to train more excellent students and promote the development of education.

Cosmin Cernitoiu, et al, (2022) emphasizes a series of key aspects on the quality requirements of teachers, which has some special features with the general professional quality. Here is a detailed explanation of these requirements:

**Honesty and integrity:** Teachers should always be honest and upright in their dealings with students, parents and colleagues. This helps build relationships of trust and makes students more open to education and guidance. **Compliance with the law:** Teachers are required to strictly comply with the law, including the rules and regulations established by the school as well as national laws and regulations. Legal and compliant behavior not only maintains the normal order of the school, but also protects the rights and interests of students and teachers themselves.

**Good teamwork skills:** Teachers usually work in an educational team, working closely with other teachers, administrators, and parents. The ability to work well in a team can help to tackle challenges together, share teaching experiences, and provide a more comprehensive educational service.

**Supervision and self-supervision:** Education is a field that is constantly evolving and improving, so teachers need to constantly monitor their own teaching methods and effectiveness. At the same time, it is also necessary to participate in the supervision and evaluation of the teaching work of the school to ensure the provision of high quality education.

Career Development and advancement: The field of education is evolving rapidly, and teachers need to constantly update their knowledge and teaching skills. Participation in educational training, continuous learning, and career development opportunities help to improve the quality of teaching and meet the diverse needs of students. These qualities are critical to both the professional success of teachers and the overall development of students. A teacher with these qualities can provide a better educational environment for students and promote their academic and personal growth.

Ivanova, et al, (2021) believe that Honesty and integrity, student-centered, skilled use of multimedia teaching, supervision and self-supervision reflect the responsibility of educators, teaching level and attention to individual differences of students. Through student-centered, innovative teaching methods, and constant supervision and self-monitoring, teachers can provide students with a more stimulating and effective learning experience.

C. Binnie, et al, (2022) believe that respect for the privacy of others is one of the basic principles that teachers must abide by. Teachers should respect students' privacy rights and should not disclose students' personal information, family background and other sensitive information at will. Secondly, obeying the law is the basic duty of every citizen. As educators, teachers should understand and abide by the laws and regulations related to education. Teachers need to clarify their rights and obligations, not to engage in illegal and criminal acts, and actively safeguard the legitimate rights and interests of students. In addition, good teamwork ability is also one of the essential qualities of teachers. Education is a collective enterprise that requires close cooperation among teachers to accomplish teaching tasks together.

Isaksen et al, (2015) believe that integrity and honesty are one of the most basic qualities of a teacher. Teachers should always be honest, do not lie, do not distort the truth, set an example for students to set a good moral example. Teachers

should respect students' privacy rights and should not disclose students' personal information, family background and other sensitive information at will. At the same time, teachers should respect the privacy of their colleagues and not spread others' private information or gossip. With the development of information technology, multimedia teaching has become an important means in the field of education. Teachers should have the ability to use multimedia in teaching. Education is a collective enterprise that requires close cooperation among teachers to accomplish teaching tasks together. Teachers should have a good sense of teamwork, actively participate in team activities, and support each other and make progress together with other teachers.

AI assistant, et al, (2023) believe that good teamwork ability is one of the necessary qualities for teachers. Education is a collective enterprise, which requires teachers to work closely together to accomplish teaching tasks. Teachers should have a good sense of teamwork, actively participate in team activities, and support each other and make progress together with other teachers. Through teamwork, teachers can make better use of their advantages and improve the quality and effect of teaching. Anti-corruption and disclosure are teachers' social responsibilities. As a member of the society, teachers should adhere to the bottom line of honesty and self-discipline and not participate in any corruption. At the same time, teachers should also dare to expose corruption in the field of education, actively report illegal acts, and safeguard fairness and justice and the healthy development of education. Teachers can fulfill this role by participating in anti-corruption initiatives and supervising school management.

In view of ethic, the researchers have integrated the components of ethic through literature and related research, as shown in Table 3:

Component	Wang lijin, et al, 2016	Kulhanek, A. J, & Bodnar, C. 2017	Cosmin Cernitoiu, et al, 2022	I. Ivanova, et al, 2021	C. Binnie, et al, 2022	Isaksen et al, 2015	AI assistant, et al, 2023	Summary
1. Integrity and honesty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		4 <input type="checkbox"/>
2. Student-centered		<input type="checkbox"/>		<input type="checkbox"/>				2
3. Privacy and respect					<input type="checkbox"/>	<input type="checkbox"/>		5 <input type="checkbox"/>
4. Abide by the law	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>			4 <input type="checkbox"/>
5. Able to skillfully use the multimedia teaching				<input type="checkbox"/>		<input type="checkbox"/>		2
6. Good team work ability	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5 <input type="checkbox"/>
7. Supervision and self-supervision		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				3 <input type="checkbox"/>
8. Anti-corruption and expose	<input type="checkbox"/>						<input type="checkbox"/>	2
9. Support for career development			<input type="checkbox"/>					1

Table 3 The Component of Ethic

According to the conclusions of these researchers, Integrity and honesty, Privacy and respect, Abide by the law, good team work ability, Supervision and self-supervision etc. These codes of ethic help ensure that educators are guided by ethical principles in their work.

## ***2) Practical ability***

The Double-Qualified teachers refer to the teacher who has both a certain theoretical teaching ability and a certain professional practice guidance ability. Therefore, practical ability is indeed a necessary characteristic of Double-qualified teachers. Double-Qualified teachers must have certain practical work experience and operational skills, and be able to guide students to practice and solve problems encountered in practical work.

Sabin, et al (2022) believe that for Double-Qualified teachers, in addition to having solid professional theoretical knowledge, they should also master practical skills related to the profession they teach, as well as the corresponding enterprise production process and industry cutting-edge technology. With the development of technology, the tools and equipment used in the field of education are constantly updated. In order to ensure the quality of teaching, teachers should be proficient in the use of various teaching tools and equipment, so that teachers can better use these tools and equipment to teach and improve the teaching effect. As education is a constantly evolving field, teachers need to be adaptable to cope with changes and challenges. Teachers need to pay attention to the management of teaching quality. Through the development of clear teaching quality standards and management systems, to ensure that all aspects of teaching are effectively monitored and managed. Teachers need to pay attention to students' feedback and opinions, and adjust their teaching methods and means in time. Through communication with students, understand the learning situation and needs of students, and constantly improve their own teaching methods and means.

Siew, et al (2015) believe that teachers need to have the ability to quickly analyze and solve problems when facing problems in teaching, practice or management. Teachers need to be proficient in the use of these tools and equipment to ensure the smooth progress of teaching. This includes all kinds of software, hardware equipment, experimental equipment, etc. Teachers need to constantly learn and update

their skills to adapt to new technological developments in the field of education. The work of teachers involves many aspects, including teaching, practical guidance, student management, self-development and so on. Therefore, good time management skills are crucial for teachers. Teachers need to communicate and coordinate with multiple stakeholders such as schools, students, parents, and businesses. Good coordination ability can help teachers better deal with various relationships, solve contradictions and problems, and promote the smooth development of education work. Teachers need to pay attention to students' feedback and opinions, and adjust their teaching methods and means in time.

Rahemi, et al (2017) believe that technical skills, problem-solving ability, practical experience, proficiency in tools and equipment and observation ability are very important qualities in teacher career development. By continuously improving these qualities, teachers can better perform their duties, improve the quality of teaching, and cultivate better students.

McCubbins, O. P. et al (2017) believe that technical skills, problem solving, safety procedures, time management, coordination, and feedback and improvement are essential for teacher career development. These qualities together help teachers better adapt to the changes of educational environment, improve their own teaching level, and provide students with better educational services. Career development in education requires constant learning and adaptation, and these qualities are key elements of a teacher's success in this process.

Khiat, Henry (2022) believe that the ability to solve problems, practical experience, proficiency in tools and equipment, and adaptability are very important abilities for teachers in professional development, and are essential to improve teaching effectiveness and cope with the changing educational environment. The field of education is full of various challenges and issues, including students' learning difficulties, classroom management, etc. Practical experience is a key component of a teacher's professional growth. By accumulating a wealth of practical experience in the



classroom, teachers are able to better understand the needs of students and gradually develop effective teaching methods that adapt to different students and learning environments. Teachers need to be proficient in a variety of teaching tools and equipment, including electronic whiteboards, online learning platforms, etc. The skillful use of these tools is helpful to improve the teaching effect and stimulate students' interest in learning. The field of education often faces changes, including the updating of teaching methods and the adjustment of curriculum standards. Teachers need to be adaptable, able to flexibly adjust their teaching strategies and constantly update their knowledge to meet the needs of students and respond to new educational challenges.

Aoyama, Sho; Imai-Matsumura, Kyoko (2022) believe that multimedia teaching, online learning platform, educational software, etc. These skills can help teachers better adapt to the modern education environment and improve the teaching effect. When facing problems in teaching, practice or management, teachers need to have the ability to quickly analyze and solve problems. The practical experience of teachers is an important part of their professional quality. Through practice, teachers can better understand the theoretical knowledge and apply it in practical teaching. Teachers need to understand and follow various safety procedures to ensure the personal safety of students in practical activities. Teachers need to be observant and attentive to students' performance and needs. By accepting students' feedback, teachers can better understand students' learning styles and needs, so as to adjust teaching strategies to better meet students' needs.

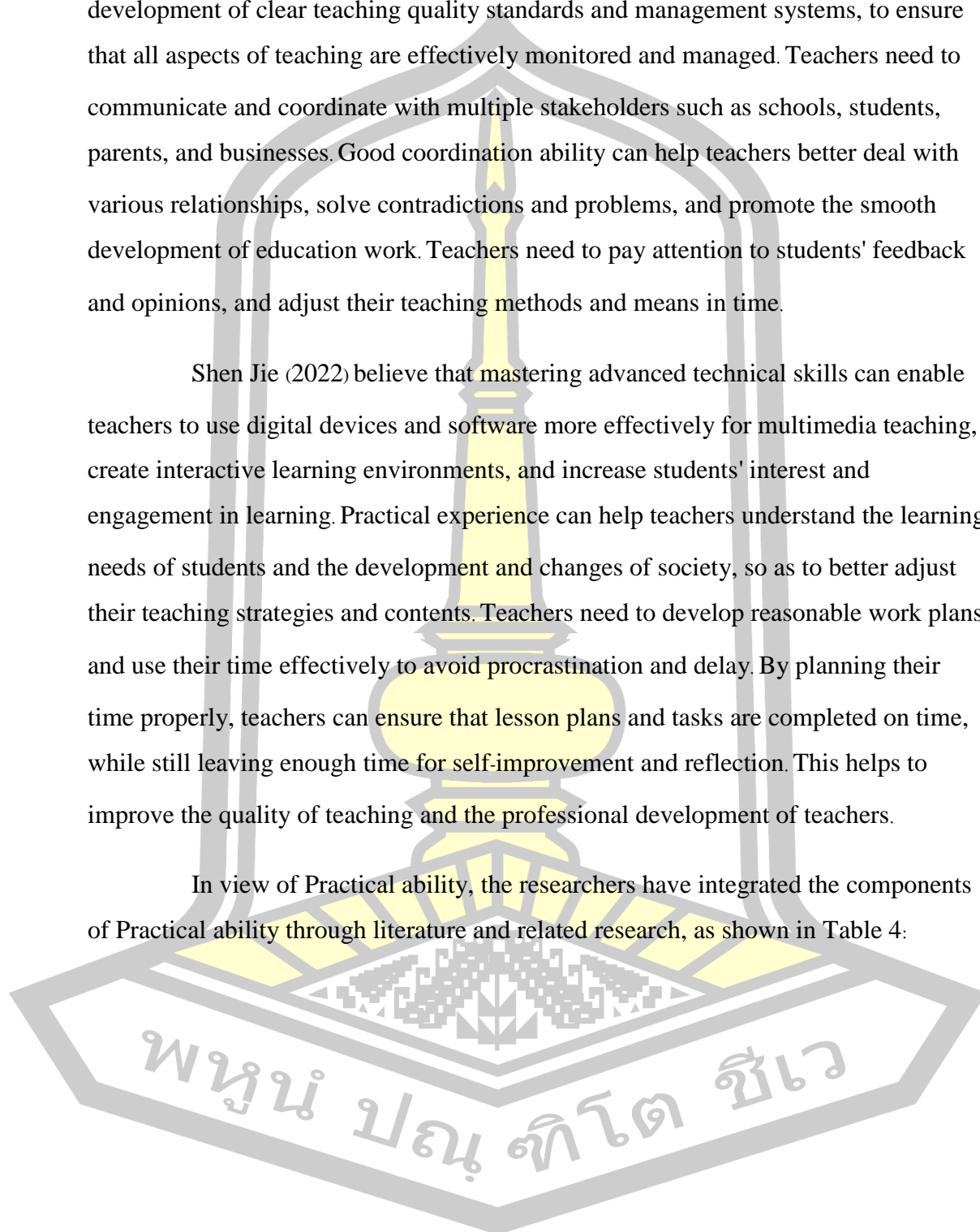
Blackwell, Jennifer (2021) believe that teachers need to have the ability to quickly analyze and solve problems when facing problems in teaching, practice or management. As education is a constantly evolving field, teachers need to be adaptable to cope with changes and challenges. This includes adapting to new educational concepts, teaching methods and technological means, as well as adapting to the learning needs of students and the development and change of society. Teachers



need to pay attention to the management of teaching quality. Through the development of clear teaching quality standards and management systems, to ensure that all aspects of teaching are effectively monitored and managed. Teachers need to communicate and coordinate with multiple stakeholders such as schools, students, parents, and businesses. Good coordination ability can help teachers better deal with various relationships, solve contradictions and problems, and promote the smooth development of education work. Teachers need to pay attention to students' feedback and opinions, and adjust their teaching methods and means in time.

Shen Jie (2022) believe that mastering advanced technical skills can enable teachers to use digital devices and software more effectively for multimedia teaching, create interactive learning environments, and increase students' interest and engagement in learning. Practical experience can help teachers understand the learning needs of students and the development and changes of society, so as to better adjust their teaching strategies and contents. Teachers need to develop reasonable work plans and use their time effectively to avoid procrastination and delay. By planning their time properly, teachers can ensure that lesson plans and tasks are completed on time, while still leaving enough time for self-improvement and reflection. This helps to improve the quality of teaching and the professional development of teachers.

In view of Practical ability, the researchers have integrated the components of Practical ability through literature and related research, as shown in Table 4:



Component	Sabin, et al., 2022	Siew, et al., 2015	Rahemi, et al., 2017	McCubbins, O.P et al; 2017	Khia, Henry, 2022	Aoyama, Sho; Imai-Matsumura, 2022	Blackwell, Jennifer, 2021	Shen, Jie, 2022	Summary
1. Technical Skills	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	5 <input type="checkbox"/>
2. Problem-Solving		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		6 <input type="checkbox"/>
3. Hands-on Experience			<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	4 <input type="checkbox"/>
4. Tool and Equipment Proficiency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>				4 <input type="checkbox"/>
1. Safety Procedures				<input type="checkbox"/>		<input type="checkbox"/>			2
6. Adaptability	<input type="checkbox"/>				<input type="checkbox"/>		<input type="checkbox"/>		3
7. Time Management		<input type="checkbox"/>		<input type="checkbox"/>				<input type="checkbox"/>	3
8. Quality Control	<input type="checkbox"/>						<input type="checkbox"/>		2
9. Collaboration			<input type="checkbox"/>						1
10. Physical Stamina and Coordination		<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>		3
11. Observational Skills			<input type="checkbox"/>			<input type="checkbox"/>			2
12. Feedback and Improvement	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		5 <input type="checkbox"/>

Table 4 The Component of Practical ability

According to the conclusions of these researchers, Technical Skills, Problem-Solving, Hands-on Experience, Tool and Equipment Proficiency, Feedback and Improvement etc. These abilities help to enhance the practical ability of educators in their work.

### ***3) Teaching ability***

Teachers' teaching ability plays an extremely important role in teaching work, which is of great significance for improving teaching quality, promoting students' growth and development, enhancing teachers' professional status and realizing educational goals. Therefore, teachers should constantly pursue the improvement of their teaching ability in order to better perform their duties, improve teaching quality, and promote the growth and development of students and themselves.

Abt Associates (2022) believe that professional knowledge, classroom management, assessment ability and continuous learning are indispensable for teachers in teaching. Teachers must have a solid foundation of subject knowledge and be able to master the content of the subjects taught, including basic concepts, principles, theories, etc. Effective classroom management is one of the keys to successful teaching. Teachers need to have good classroom management ability, be able to formulate clear classroom rules and discipline, maintain classroom order, and create a good learning atmosphere. Teachers need to have the ability to evaluate students' learning outcomes, and be able to formulate reasonable evaluation standards and evaluation methods to evaluate students' learning outcomes objectively and accurately. Education is a constantly evolving field and teachers need to have the ability to continuously learn and constantly update their knowledge and skills to adapt to changes and challenges in the field of education.

Reith-Hall, Emma; Montgomery (2023) believe that teachers also need to understand the development dynamics and cutting-edge knowledge of the subject in order to integrate the latest research results and trends into teaching. Teachers also

need to understand students' learning characteristics and needs in order to better guide students' learning. Teachers need to pay attention to students' feedback and opinions, adjust teaching strategies in time, and establish a good cooperative relationship with parents to jointly promote students' growth and development. Classroom management: Effective classroom management is one of the keys to teaching success. Teachers need to have good classroom management ability, be able to formulate clear classroom rules and discipline, maintain classroom order, and create a good learning atmosphere. At the same time, teachers also need to pay attention to students' needs and feedback, and adjust teaching strategies in a timely manner to ensure that every student gets attention and support. Teachers need to pay attention to the feelings and needs of others and respect the opinions and perspectives of others in order to better coordinate and solve problems. Teachers need to pay attention to the development trend of education and new teaching methods and means, actively participate in professional training and learning activities, and constantly improve their professional quality and practical ability. Teachers need to pay attention to students' learning enthusiasm and participation, and take effective methods and means to stimulate students' learning interest and motivation.

Roseth, Nicholas E; Blackwell, Jennife (2023) believe that teachers need deep subject expertise to understand and master the subject content of the subject they teach. This includes an understanding of the latest research and developments in the discipline to ensure that the most accurate and up-to-date knowledge is delivered to students. In addition to subject expertise, teachers also need to have teaching knowledge in pedagogy, psychology, etc. Teachers need to have good communication skills, be able to articulate ideas and communicate effectively with students, parents and colleagues. Good communication helps to establish a positive learning atmosphere and promotes student participation and understanding. Classroom management is the basis of teaching, including student behavior management, time management, organizational ability and so on. Teachers need to maintain a continuous learning mindset. This includes attending professional training, seminars, reading educational

literature, etc., to keep abreast of new theories and teaching methods. Educational technology is playing an increasingly important role in modern teaching. Teachers need to master and flexibly use educational technology tools to improve the attractiveness, interaction and effect of teaching.

Tzohar-Rozen, Meirav (2021) believe that professional knowledge, teaching knowledge, interpersonal skills, adaptive ability, continuous learning ability and other factors are interrelated, and jointly affect the comprehensive quality of a teacher. A successful teacher not only needs to have a wealth of expertise and teaching skills in their subject area, but also needs to establish good relationships with students and colleagues, have the ability to adapt to change, and maintain continuous learning and progress in the field of education.

Lu Jizeng and Zhang Yuying (2012) believe that teachers should have a deep understanding of the subject they teach. A solid foundation of subject knowledge enables teachers to better explain concepts, guide student discussions and answer student questions. Good communication skills are essential for teachers. Teachers need to be able to explain concepts clearly and logically so that students can understand them. It is also important to listen to students' questions and feedback. Teachers need to manage the classroom effectively to ensure class order and students' learning efficiency. This includes creating and maintaining a positive learning environment, dealing with student behavior issues, and more. Teachers need to be able to assess student progress and performance, including regular tests and homework assessments.

Hattie, J. A. (2009) believe that teachers' professional knowledge is the basis of teaching, which determines whether teachers can accurately and systematically impart knowledge to students. Teaching knowledge involves how to conduct classroom teaching effectively, how to design courses, how to evaluate students' learning effect and so on. Communication skills are very important for teachers, because teachers need to communicate with students, parents, colleagues and other parties. Good communication skills help teachers better understand students, manage

the classroom, and build good relationships with parents. Interpersonal skills, also known as social skills, refer to people's ability to deal with interpersonal relationships, including communication skills, coordination skills, leadership skills, etc.

In view of Teaching ability, the researchers have integrated the components of Teaching ability through literature and related research, as shown in Table 5:

Component	Abt Associates, 2022	Reith-Hall, Emma; Montgomery, 2023	Roseth, Nicholas E; Blackwell, Jennife, 2023	Tzohar-Rozen, Meirav, 2021	Lu Jizeng and Zhang Yuying (2012)	Hattie, J. A. (2009)	Summary
1. Teaching design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6 <input type="checkbox"/>
2. Pedagogical Knowledge		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5 <input type="checkbox"/>
3. Communication Skills		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	4 <input type="checkbox"/>
4. Classroom Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		4 <input type="checkbox"/>
5. Interpersonal Skills		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	3
6. Assessment Skills	<input type="checkbox"/>				<input type="checkbox"/>		3
7. Adaptability		<input type="checkbox"/>		<input type="checkbox"/>			2
8. Continuous Learning	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	4 <input type="checkbox"/>
9. Use of Technology			<input type="checkbox"/>				1
10. Motivational Skills		<input type="checkbox"/>					2

Table 5 The Component of Teaching ability

According to the conclusions of these researchers, Teaching design, Pedagogical Knowledge, Communication Skills, Classroom Management, Continuous Learning etc. These abilities help to enhance the teaching ability of educators in their work.

#### ***4) Reflection and improvement***

The teacher's reflection refers to the teacher's examination and reflection on his own teaching behavior and teaching effect in the teaching process, analyzing the advantages and disadvantages, and seeking ways to improve. Reflection can help teachers deeply understand their own teaching, find the existing problems, so as to make targeted improvements. Teachers' improvement refers to adjusting and perfecting their own teaching behavior and teaching methods on the basis of reflection, so as to improve the teaching effect. Improvement is an important driving force for teachers' professional development and the source of teachers' continuous progress.

Carlsson Hauff, Jeanette (2022) believe that knowing your strengths, weaknesses, values, preferences, emotions and needs. This ability is important for defining personal direction, setting personal goals, and dealing with challenges in your personal and professional life. Identify problems and determine the nature, characteristics, types and causes of problems. This ability helps to make informed decisions, solve problems, and prevent problems from worsening. The ability to judge and evaluate ideas, plans, and programs to determine whether they are feasible, reasonable, and effective. Continuous learning is the process of improving personal and professional competence through continuous learning. In a rapidly changing world, continuous learning becomes especially important because it helps people adapt to new environments, solve new problems, and seize new opportunities. Comprehensive and systematic analysis of complex information, data, situations, etc., resulting in in-depth and accurate understanding and judgment.



Abd Hamid S R, Syed Hassan S (2019) believe that people who are good at learning will constantly seek out new knowledge and extract what is useful to them. When faced with complex situations or difficult choices, teachers need the ability to rationally analyze and make wise decisions. Teachers need the ability to observe and analyze their surroundings to identify problems or opportunities for improvement. This often involves critical thinking and requires deep observation and thought. Teachers need the skills and attitudes they display when interacting with others. Teachers need to know exactly what they want to achieve and develop a practical plan to achieve those goals. Teachers need to have comprehensive analysis ability, able to comprehensively and systematically analyze problems, grasp the nature and internal laws of things, and foresee the development trend of things. This requires a wealth of knowledge and experience, as well as the ability to think deeply.

Roseth, Nicholas E; Blackwell, Jennife (2023) believe that a teacher's self-knowledge, learning and growth, decision-making ability, problem finding, continuous learning and application ability are important factors that constitute a successful teacher. These elements are intertwined to shape a well-rounded educational professional. By constantly improving their self-knowledge, accepting new knowledge, making flexible decisions, identifying problems and taking action, teachers can continue to improve and provide better educational services to their students.

Chen Weiping (2019) believe that self-knowledge is the basis for personal growth and development. It involves knowing your values, interests, strengths, weaknesses, and goals in life. Through self-knowledge, people are able to better understand their own behaviors and decisions, and thus make more informed choices in their personal and professional lives. Through learning, people can acquire new knowledge and skills to enhance their ability and potential. Interpersonal skills include skills in listening, presentation, conflict resolution and teamwork. In personal and professional life, good interpersonal skills are key to building trust, solving problems,



and building consensus. In an educational or training environment, the clarity of teaching objectives is an important factor in ensuring the effectiveness of teaching. The ability to synthesize analysis involves integrating complex information, ideas, or data to reach comprehensive and logical conclusions. In an educational or professional setting, comprehensive analytical skills are important for problem solving, decision making, and innovation. It requires critical thinking, inductive and deductive reasoning, and information processing skills.

Lu Jizeng and Zhang Yuying (2012) believe that teachers should know their own values, beliefs, educational ideas and areas of strength and improvement. Reflect on and become aware of individual educational practices, attitudes and behaviours in order to better adapt to the needs of students. Continuous learning is an integral part of a teacher's career. The field of education is constantly changing, so teachers need to constantly update their knowledge and teaching methods. Good decision-making ability requires teachers to weigh different factors and make appropriate decisions rationally and quickly in order to promote students' learning and development. Teachers need to have keen observation and analytical ability to find the problems in students' learning in time. Teachers need to be able to effectively assess students' academic achievement and personal development. Continuous self-reflection and professional development are very important for the overall improvement of teachers. A teacher who is self-aware, constantly learning and growing, good at decision-making, able to identify problems and evaluate effectively will be more likely to have a positive educational impact.

Luo Ying (2017) believe that teaching is a profession that requires continuous self-knowledge, learning and growth, decision-making, evaluation and continuous learning. Teachers need to constantly learn and improve their teaching skills, including mastering new teaching methods, techniques and tools. Teachers need to make informed decisions in a complex educational environment, including

curriculum design, student assessment, teaching strategies, etc. Decision-making skills require teachers to have the ability to analyze problems, weigh pros and cons, and choose the best solution. Continuous learning also requires teachers to have an open, curious and exploratory mind. At the same time, teachers should also have the ability of comprehensive analysis.

In view of Reflection and improvement, the researchers have integrated the components of Reflection and improvement through literature and related research, as shown in Table 6:

Component	Carlsson Hauff, Jeanette, 2022	Abd Hamid S R , Syed Hassan S	Roseth, Nicholas E; Blackwell, Jennife, 2023	Chen Weiping (2019)	Lu Jizeng and Zhang Yuying (2012)	Luo Ying (2017)	Summary
1. Self-knowledge	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5 <input type="checkbox"/>
2. Learning and growth		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5 <input type="checkbox"/>
3. Decision making		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	4 <input type="checkbox"/>
4. Find the problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		4 <input type="checkbox"/>
5. Interpersonal Skills		<input type="checkbox"/>		<input type="checkbox"/>			2
6. Evaluation ability	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	3
7. Teaching objective		<input type="checkbox"/>		<input type="checkbox"/>			2
8. Continuous Learning	<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>	3
9. Application ability			<input type="checkbox"/>				1

10.Summary analysis	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	4 <input type="checkbox"/>
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Table 6 The Component of Reflection and improvement

According to the conclusions of these researchers, Self-knowledge, Learning and growth, Decision making, Find the problem, Summary analysis etc. These abilities help to enhance the reflection and improvement of educators in their work.

### ***5) Teacher-student relationship***

A good teacher-student relationship is a positive cycle that helps enhance students' overall learning experience and cultivate their overall literacy. This relationship is not only beneficial to students, but also has a positive impact on teachers' teaching effectiveness and satisfaction.

Annable, Jill (2022) believe that students' academic progress and growth include the mastery of knowledge, the improvement of skills, and the formation of academic accomplishment. The ability of teachers to guide students to learn, think and explore, including stimulating students' interest and motivation, helping students to solve problems, and guiding students to learn independently. Teachers manage classroom discipline, teaching process and student behavior to ensure the smooth progress of teaching activities. Teachers manage their own teaching plans, teaching behaviors, emotions and time to improve teaching results and their own professional development. Through inspiration, guidance and interaction, teachers help students to actively think, explore and innovate, and stimulate students' thinking ability and creativity. In order to improve the teaching effect, teachers should pay attention to their own guiding ability, heuristic teaching, strengthen classroom management and self-management, and pay attention to students' academic growth.

Kang, W. (2016) believe that teachers' concern for students' academic growth includes students' academic development. This includes the accumulation of subject

knowledge, the improvement of learning skills and the ability to solve problems. Teachers should give students emotional care and support. In an educational setting, students may face a variety of emotional challenges, and emotional support helps them build emotional health and coping skills. Developing good social skills is essential for building relationships and resolving conflicts. Leadership is the ability of an educator, mentor, or parent to guide a student to develop goals, make plans, and solve problems. Behavioral development involves the growth of students in behavioral aspects, including self-management, responsibility, discipline, and respect for others. Effective evaluation is key to ensuring that students receive helpful feedback and understand their progress. This can include regular assessments, feedback mechanisms, and personalized evaluation methods.

Communication Law and Policy (2016) believe that academic growth mainly involves personal progress in knowledge learning and skill mastery. Through the systematic study of a variety of subjects in school or other educational Settings, cognitive skills are developed to lay a solid foundation for future development. Giving students support and care at the psychological and emotional level helps to develop healthy emotional expression and emotional regulation abilities, and enhances individual psychological resilience. Through effective communication, teamwork, and solving problems in relationships, one can improve one's social skills, which are essential for building good relationships at work and in life. Listening, understanding, providing guidance, giving positive feedback, etc., can increase one's influence and serve as a role model for others. Through in-depth study and practice, becoming an expert in a certain field can establish an individual's authority and win the respect and trust of others.

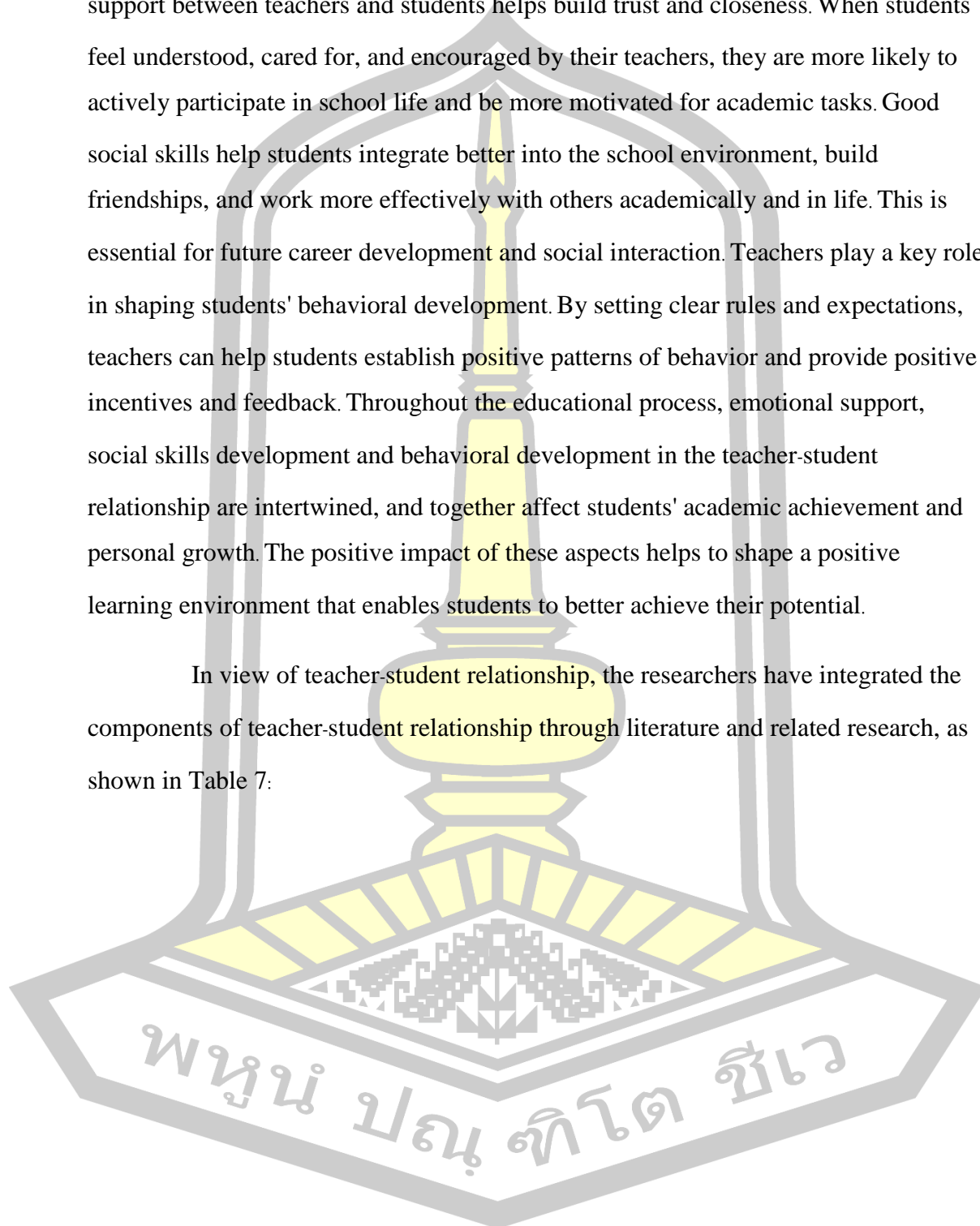
Zeichner, K. M., & Liston, D. (2013) believe that educators understand and meet students' emotional needs in order to promote their emotional health and academic achievement. Emotional support helps to build a positive learning environment, improves students' self-esteem and self-confidence, and helps to better

handle emotional challenges. Behavior development is directly related to the adaptability of students in school and society. Positive behavioral development helps build good social skills and self-management. Effective evaluation helps educators understand students' learning levels, guide instruction, provide timely feedback, and encourage students to actively participate in the learning process. Teaching with a heuristic approach encourages students to build knowledge through independent exploration and discovery. It helps to develop students' critical thinking, problem solving and independent learning skills, and focuses more on student participation and deep understanding than traditional imparted teaching.

Tao, Y., & Ren, C. (2015) believe that the main task of students in school is to study, learn through courses, master knowledge, develop skills, and prepare for future life and work. Teachers need to pay attention to students' learning progress and achievements, and provide the necessary guidance and assistance to ensure that students can successfully complete their studies. Students need to feel cared for and supported by teachers, which helps them build confidence and a positive mindset. Teachers need to pay attention to students' emotional needs, provide emotional support and encouragement, help students overcome difficulties and setbacks, and promote students' mental health development. School is a social place and students need to learn to get along with people and develop good interpersonal relationships. Teachers need to guide students to establish correct social concepts and behaviors, cultivate students' cooperative spirit and communication ability, and help students build healthy social networks. Teachers need to have the ability to guide students to think independently and learn independently. By guiding students to discover, analyze and solve problems, it helps students develop innovative thinking and practical ability, and lays a solid foundation for students' future development. Good classroom management can ensure the smooth progress of teaching and improve the learning effect of students. Teachers need to formulate clear classroom discipline and rules to maintain classroom order, pay attention to students' learning status and feedback, adjust teaching strategies in time, and improve teaching effect.

Arling-Hammond, L, & Jones, K. (2011) believe that positive emotional support between teachers and students helps build trust and closeness. When students feel understood, cared for, and encouraged by their teachers, they are more likely to actively participate in school life and be more motivated for academic tasks. Good social skills help students integrate better into the school environment, build friendships, and work more effectively with others academically and in life. This is essential for future career development and social interaction. Teachers play a key role in shaping students' behavioral development. By setting clear rules and expectations, teachers can help students establish positive patterns of behavior and provide positive incentives and feedback. Throughout the educational process, emotional support, social skills development and behavioral development in the teacher-student relationship are intertwined, and together affect students' academic achievement and personal growth. The positive impact of these aspects helps to shape a positive learning environment that enables students to better achieve their potential.

In view of teacher-student relationship, the researchers have integrated the components of teacher-student relationship through literature and related research, as shown in Table 7:



Component	Annable, Jill, 2022	Kang, W.(2016)	Communication Law and Policy (2016)	Zeichner, K.M., & Liston, D. (2013)	Tao, Y., & Ren, C.(2015)	arling-Hammond, L., & Jones, K.(2011)	Summary
1. Academic Growth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		4 <input type="checkbox"/>
2. Emotional Support		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5 <input type="checkbox"/>
3. Social Skills		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	4 <input type="checkbox"/>
4. Guidance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		4 <input type="checkbox"/>
5. Behavioral development		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	3 <input type="checkbox"/>
6. Classroom management	<input type="checkbox"/>				<input type="checkbox"/>		2
7. Effective evaluation		<input type="checkbox"/>		<input type="checkbox"/>			2
8. Teachers are good at self-management	<input type="checkbox"/>						1
9. Expert authority			<input type="checkbox"/>				1
10. Heuristic teaching	<input type="checkbox"/>			<input type="checkbox"/>			2

Table 7 The Component of Teacher-student relationship

According to the conclusions of these researchers, Academic Growth, Emotional Support, Social Skills, Guidance, Behavioral Development etc. These abilities help to enhance the teacher-student relationship of educators in their work.



## Career Development

Career development is a broad and complex field encompassing the planning, management, and growth of an individual's career. The following is a literature review on career development, covering the main theories, models, research, and practices in this field.

### 1. Theoretical Foundations of Career Development

Career Development Theories:

Holland's Theory of Vocational Personalities and Work Environments:

Holland (1997) proposed a theory that emphasizes the match between individual interests and work environments, which affects job satisfaction and success. Holland's six personality types (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional) and corresponding work environment types provide a theoretical basis for career planning.

Super's Theory of Career Development: Super (1990) introduced the life-span theory of career development, emphasizing that career development is a dynamic process that includes stages such as growth, exploration, establishment, maintenance, and decline. Super argued that career development is closely linked to an individual's self-concept, and career choices reflect this self-concept.

Career Development Models:

Crompton's Career Lifecycle Model: Crompton (1995) proposed the career lifecycle model, dividing career development into four stages: entry, growth, stability, and decline. This model describes the characteristics and challenges of career development at different stages.

Career Development Stages Model: This model analyzes individual career development needs and behavior patterns based on different stages of a career (such as exploration, stability, and late career).

## **2. Practical Applications of Career Development**

Career Planning and Counseling:

Career Counseling Methods: Career counselors use various tools and techniques (such as career interest tests, skills assessments, and career evaluations) to help individuals understand their career interests and skills, and to develop career development plans (Gysbers & Henderson, 2006).

Career Planning Models: For example, Gould's career planning model (Gould, 1998) assists individuals in setting long-term and short-term career goals and developing specific steps and strategies to achieve these goals.

Career Development Interventions:

Career Training and Education: Career development interventions include providing relevant career training and educational opportunities to help individuals acquire the necessary skills and knowledge (Noe, 2010). These interventions aim to enhance career capabilities and adapt to the evolving job market.

Career Development Plans: Companies and organizations often create career development plans to support employees' career growth and advancement (Rothwell & Kazanas, 2004). These plans may include career pathways, promotion opportunities, and mentorship programs.

## **3. Recent Research in Career Development**

Impact of Digital Transformation on Career Development:

**Technological Impact:** With the rapid advancement of technology, digital transformation has had a profound impact on career development, including remote work, virtual teams, and increased demand for digital skills (Friedman & Amoo, 2021).

**Work-Life Balance:** Research indicates that digital transformation has also affected employees' work-life balance, driving a focus on flexible work arrangements and mental health support (Klein & Wright, 2022).

**Diversity and Inclusion in Career Development:**

**Inclusive Practices:** Career development research increasingly focuses on inclusivity, particularly in terms of gender, race, and cultural diversity (Thomas & Ely, 1996). Research explores how to promote career growth for employees from diverse backgrounds through inclusive career development strategies.

**Career Development Gaps:** Studies have also identified gaps in career development opportunities and resource access among different groups, proposing policy recommendations to address these disparities (McCoy & Theeke, 2020).

#### **4. Future Trends in Career Development**

**Personalized Career Development:** Future trends in career development may place greater emphasis on personalization, utilizing big data and artificial intelligence technologies to provide tailored career advice and development paths (Brynjolfsson & McAfee, 2014).

**Lifelong Learning and Adaptability:** In a rapidly changing job market, lifelong learning and adaptability will become key factors in career development (Senge, 1990). Career development will require continuous skill and knowledge updates to meet new career challenges and opportunities.

## Need Assessment

Need assessment, also known as needs assessment, is a systematic process for identifying and evaluating gaps between existent condition, desired condition or wants. This process helps in determining what is required to address those needs effectively. This literature review explores the theoretical foundations, methodologies, applications, and recent developments in the field of need assessment.

### 1. Theoretical Foundations of Need Assessment

#### Conceptual Frameworks:

**Theory of Needs (Maslow, 1943):** Maslow's hierarchy of needs provides a foundational understanding of human needs, ranging from basic physiological needs to higher-order self-actualization needs. This theory underpins many need assessment frameworks by highlighting that addressing basic needs is essential before higher-level needs can be effectively targeted.

**Gap Analysis Theory:** Gap analysis is a strategic tool used to identify the difference between the existent condition and desired condition. This theory provides a framework for need assessment by focusing on identifying gaps and developing strategies to bridge them (Crosby, 1994).

#### Models of Need Assessment:

**The CIPP Model (Context, Input, Process, Product) (Stufflebeam, 1967):** The CIPP model evaluates programs based on context, input, process, and product. It is widely used in educational and organizational settings to assess needs and effectiveness by examining each component of a program.

**The ADDIE Model (Analysis, Design, Development, Implementation, Evaluation):** The ADDIE model, commonly used in instructional design, includes need

assessment as the initial phase. This model ensures that educational and training programs are developed based on a thorough understanding of needs (Molenda, 2003).

## **2. Methodologies for Need Assessment**

### **Qualitative Methods:**

**Interviews and Focus Groups:** Qualitative methods, such as interviews and focus groups, are used to gather in-depth insights into the needs of individuals or groups. These methods help in understanding the context and nuances of needs (Patton, 2002).

**Case Studies:** Case studies provide detailed examinations of specific instances where needs have been assessed and addressed. They offer practical insights and lessons learned from real-world applications (Yin, 2003).

### **Quantitative Methods:**

**Surveys and Questionnaires:** Surveys and questionnaires are widely used for collecting quantitative data on needs. They provide statistical evidence on the prevalence and priority of various needs within a population (Dillman, 2007).

**Data Analysis:** Statistical analysis of data collected through surveys and other quantitative methods helps in identifying trends and patterns in needs. This approach provides objective evidence for decision-making (Field, 2013).

## **3. Applications of Need Assessment**

### **Education:**

**Curriculum Development:** Need assessment is critical in educational settings for curriculum development. It helps in identifying the knowledge and skills gaps among students and designing programs that address these gaps (Guskey, 2000).

**Professional Development:** Need assessment is used to determine the professional development needs of educators and administrators. This ensures that training programs are aligned with the actual needs of the staff (Bennett, 2012).

**Healthcare:**

**Health Services Planning:** In healthcare, need assessment is used to plan and allocate resources effectively. It helps in identifying gaps in health services and designing interventions to improve health outcomes (Morris, 2006).

**Program Evaluation:** Need assessment is integral to evaluating health programs by identifying whether the programs meet the needs of the target population and making necessary adjustments (Weiss, 1998).

**Business and Organizations:**

**Training Needs Analysis:** In business settings, need assessment is used to analyze training needs and ensure that employee development programs are targeted and effective (Goldstein & Ford, 2002).

**Strategic Planning:** Organizations use need assessment to inform strategic planning by identifying organizational gaps and developing strategies to address them (Bryson, 2018).

#### **4. Recent Developments in Need Assessment**

**Technology Integration:**

**Digital Tools and Platforms:** The use of digital tools and platforms for need assessment has increased. Online surveys, data analytics, and virtual focus groups offer new ways to gather and analyze needs (Krosnick & Presser, 2010).

**Big Data and Analytics:** Advances in big data and analytics have enhanced the ability to assess needs on a larger scale. These technologies provide deeper

insights into needs and enable more precise targeting of interventions (Mayer-Schönberger & Cukier, 2013).

#### Participatory Approaches:

**Community-Based Needs Assessment:** There is a growing emphasis on participatory approaches that involve the community in the need assessment process. This approach ensures that the needs identified are reflective of the community's perspectives and priorities (Wallerstein & Duran, 2010).

**Stakeholder Involvement:** Engaging stakeholders throughout the need assessment process helps in ensuring that the needs identified are relevant and that the solutions proposed are feasible and supported by those affected (Bryson, Crosby, & Middleton Stone, 2006).

### **Program**

In the context of contemporary education and technological advancements, the design and implementation of a Program have become essential means of achieving specific objectives. An effective Program not only requires clear objectives and principles but also demands well-structured content design, development processes, and measurement and evaluation mechanisms. Below is an overview of the various components of a Program, including its principles, objectives, content, development process, and measurement and evaluation methods.

#### 1. Principles

The principles guiding the design and implementation of a Program represent the fundamental ideologies and standards that underpin its operation. These principles encompass various aspects, including transparency, sustainability, inclusivity, and efficiency. Transparency ensures that all stakeholders involved in the Program have access to clear and comprehensive information regarding its objectives, processes, and outcomes. By fostering transparency, the Program cultivates trust and



accountability among stakeholders, facilitating effective collaboration and decision-making (Frey, Luechinger, & Stutzer, 2007).

Sustainability is another critical principle, emphasizing the long-term impact and viability of the Program beyond its initial implementation phase. A sustainable Program is one that not only achieves immediate objectives but also maintains its relevance and effectiveness over time, adapting to evolving needs and challenges in its operating environment (World Commission on Environment and Development, 1987).

Inclusivity is essential to ensure that the Program caters to the diverse needs and interests of all its target groups. By embracing inclusivity, the Program strives to overcome barriers to participation and ensure equitable access to opportunities and benefits. This principle promotes diversity, equity, and social justice within the Program's framework, fostering a supportive and inclusive learning environment for all participants (UNESCO, 2017).

Efficiency is a fundamental principle that underscores the optimal utilization of resources, including time, finances, and human capital, to achieve desired outcomes. An efficient Program maximizes the impact of resources while minimizing waste and inefficiencies, thereby enhancing cost-effectiveness and sustainability. By prioritizing efficiency, the Program can allocate resources strategically, prioritize activities, and streamline processes to achieve its goals more effectively (Anand & Rosen, 2008).

These principles collectively serve as guiding pillars for the design, implementation, and evaluation of the Program, ensuring its effectiveness, relevance, and impact on stakeholders and society as a whole.

## 2. Objectives

The objectives of a Program denote the specific outcomes it aims to achieve. These objectives should be Specific, Measurable, Achievable, Relevant, and Time-

bound (SMART), ensuring clarity and effectiveness in guiding the design, implementation, and evaluation processes. Clear and well-defined objectives serve as the foundation for planning and executing Program activities, enabling stakeholders to align their efforts towards common goals and track progress towards desired outcomes (Locke & Latham, 2002).

Specific objectives provide clear direction and focus, outlining precisely what the Program seeks to accomplish. Measurable objectives enable progress to be quantified and evaluated objectively, facilitating the monitoring and assessment of Program effectiveness. Achievable objectives set realistic targets that can be feasibly attained within the Program's resource constraints and timeframe. Relevant objectives ensure alignment with the overarching mission and priorities of the Program, enhancing its significance and impact. Finally, time-bound objectives establish deadlines and milestones, creating a sense of urgency and accountability for achieving results within specified timeframes (Doran, 1981).

By adhering to the SMART criteria, Program objectives become more actionable, accountable, and conducive to success. They provide a clear roadmap for stakeholders to follow, guiding their actions and decisions towards the attainment of desired outcomes. Moreover, SMART objectives serve as benchmarks for evaluating Program performance and effectiveness, enabling stakeholders to assess progress, identify areas for improvement, and make informed decisions about future initiatives (Wang, 2019).

In summary, well-defined objectives play a crucial role in guiding the design, implementation, and evaluation of a Program, ensuring its relevance, effectiveness, and impact on stakeholders and society.

### 3. Content

The content of a Program refers to the specific activities, courses, or interventions included within it. The design of this content should be aligned with the

principles and objectives of the Program, while also considering the needs and backgrounds of the target audience. Effective content design ensures that the goals of the Program are achieved, fostering meaningful learning experiences and outcomes (Lee & Kim, 2021).

The development of Program content begins with a thorough analysis of the Program's principles, objectives, and the characteristics of its target audience. This analysis helps identify the knowledge, skills, and competencies that participants need to acquire or develop through the Program. Based on this analysis, relevant content is selected or developed to address these learning needs and objectives (Reigeluth & Carr-Chellman, 2009).

The content of the Program may include various components such as instructional materials, learning activities, assessments, and resources. These components are designed to engage participants, facilitate learning, and promote the acquisition of knowledge and skills in line with the Program's objectives. Content may be delivered through diverse formats, including lectures, workshops, group discussions, hands-on activities, multimedia resources, and online platforms, catering to different learning preferences and styles (Merrill, 2002).

Additionally, the content should be structured and organized in a logical sequence, ensuring coherence and progression in learning. Clear learning objectives and outcomes should be communicated to participants, providing guidance on what they are expected to achieve through each content module or activity. Furthermore, the content should be reviewed and updated regularly to reflect emerging trends, best practices, and feedback from participants, ensuring its relevance and effectiveness over time (Morrison, Ross, & Kemp, 2013).

In summary, effective content design is essential for the success of a Program, as it lays the foundation for meaningful learning experiences and outcomes for participants.

#### 4. Development Process

The development process of a Program encompasses the entire journey from conceptualization to implementation. This process typically involves several key stages, including needs analysis, goal setting, content design, development of implementation plans, execution, and monitoring and adjustment. Each step of the process should be informed by data and feedback, ensuring the success and effectiveness of the Program (Chen, 2022).

The first stage of the development process is needs analysis, which involves identifying and understanding the specific needs, challenges, and opportunities within the target population or context. This analysis helps to clarify the objectives and scope of the Program, ensuring that it addresses relevant issues and aligns with stakeholders' priorities and expectations (Stufflebeam & Shinkfield, 2007).

Once the needs are identified, the next stage involves setting clear and measurable goals for the Program. These goals should be aligned with the Program's objectives and principles, providing a roadmap for the development and implementation process. Setting SMART goals ensures that they are Specific, Measurable, Achievable, Relevant, and Time-bound, facilitating effective planning and evaluation (Doran, 1981).

Subsequently, the content of the Program is designed based on the identified needs and goals, incorporating relevant instructional strategies, materials, and activities. This stage requires collaboration among educators, subject matter experts, instructional designers, and other stakeholders to ensure that the content is engaging, effective, and aligned with the Program's objectives (Reigeluth & Carr-Chellman, 2009).

Once the content is developed, implementation plans are formulated, outlining the strategies, resources, timelines, and responsibilities for executing the Program. Effective communication and coordination among stakeholders are crucial

during this stage to ensure smooth implementation and minimize disruptions (Fink, 2013).

As the Program is executed, ongoing monitoring and evaluation are essential to assess its progress, identify challenges or areas for improvement, and make necessary adjustments. Data-driven decision-making and continuous feedback loops enable stakeholders to track performance, measure outcomes, and enhance the Program's effectiveness over time (Scriven, 1991).

In summary, the development process of a Program involves a systematic and iterative approach, guided by data and feedback, to ensure its relevance, effectiveness, and impact on stakeholders and society.

## 5. Measurement and Evaluation

Measurement and evaluation are critical components of Program management, helping project managers understand whether the Program has achieved its objectives and how to make improvements. This includes both quantitative and qualitative assessments of the Program's effectiveness, efficiency, and impact. Effective measurement and evaluation require appropriate indicators and tools, as well as proper analysis and interpretation of data (Zhang & Liu, 2023).

Measurement involves the systematic collection and recording of data related to various aspects of the Program, such as participant performance, program activities, and resource utilization. This data serves as the basis for assessing the Program's progress and outcomes. Common measurement techniques include surveys, interviews, observations, and tests, which provide quantitative and qualitative insights into the Program's performance (Creswell & Creswell, 2017).

Evaluation, on the other hand, involves the systematic assessment and interpretation of the collected data to determine the Program's effectiveness, efficiency, and impact. This process aims to answer key questions such as whether the Program's objectives were achieved, whether it delivered value for money, and what

changes or improvements are needed. Evaluation methods may include outcome evaluations, process evaluations, and cost-effectiveness analyses, which provide valuable insights into the Program's strengths, weaknesses, and areas for improvement (Patton, 2008).

Effective measurement and evaluation require careful planning, including the selection of appropriate evaluation methods, the development of evaluation criteria and standards, and the establishment of data collection procedures. It also involves engaging stakeholders in the evaluation process to ensure that their perspectives and priorities are considered. Furthermore, data analysis should be conducted rigorously, using both quantitative and qualitative techniques to derive meaningful insights and conclusions (Trochim & Donnelly, 2008).

Ultimately, the findings from measurement and evaluation activities should inform decision-making and action planning to improve the Program's effectiveness and impact. By continuously monitoring and evaluating the Program's performance, project managers can identify successes, challenges, and opportunities for innovation, ensuring that the Program remains relevant and responsive to the needs of its stakeholders (Patton, 2018).

In summary, measurement and evaluation are essential for assessing the effectiveness and impact of a Program, guiding decision-making, and driving continuous improvement.

### **70:20:10 Model for Teacher Development**

The 70:20:10 theory is a model of learning and development that presents a view of how people learn and progress. The model was developed by Morgan McCall, Michael Lombardo, and Robert Eichinger in the late 1970s for the Center for Creative Leadership. Here is a detailed explanation of the theory:



70% of learning comes from work experience and hands-on learning. This means learning by doing, trying, and facing challenges in real work. This type of learning is the most important and effective because it provides practical application and feedback.

20% of learning comes from interaction and collaboration with others. This includes collaboration, exchange and sharing of experiences with colleagues, leaders and other professionals. By interacting with others, learners can gain different perspectives and experiences and broaden their knowledge and skills.

10% of learning comes from formal learning activities such as training courses, seminars and workshops. This type of learning is the most traditional and is usually provided by professional educators. Formal learning activities provide a systematic transfer of knowledge and skills, but they are a small part of the overall learning. (Sarah K. Lee, Robert J. Miller, 2021)

The 70:20:10 model emphasizes the importance of practical work experience and practice, as well as the contribution of interaction and collaboration with others to learning. It reminds us not just to rely on traditional classroom learning, but to integrate learning into our daily work and to actively communicate and collaborate with others. This integrated approach to learning can contribute more effectively to the development of individuals and organizations.

The 70:20:10 model is not a specific theory of learning, but rather a theoretical framework for learning and development. It emphasizes the diversity and sources of learning and provides a reference guide for proportional distribution.

However, the theoretical basis of the 70:20:10 model can be linked to a number of learning theories and perspectives. Here is some learning theories related to the 70:20:10 model:



1. Social cognitive theory: Social cognitive theory emphasizes the occurrence and promotion of learning in social contexts. According to social cognitive theory, learning is achieved through observation and participation in social interactions. Twenty percent of the learning sources in the 70:20:10 model is linked to social interactive learning in social cognitive theory.

2. Experiential learning theory: Experiential learning theory holds that learning through practice and experience is the most effective way to learn. 70% of the learning sources in the 70:20:10 model is consistent with experiential learning in experiential learning theory.

3. Adult learning Theory: Adult learning theory emphasizes autonomy and practice orientation in adult learning. 70% and 20% of the learning sources in the 70:20:10 model is consistent with problem-centered learning and self-directed learning in adult learning theory.

It is important to note that the 70:20:10 model does not represent a single learning theory, but rather combines different learning theories and perspectives to provide a comprehensive learning framework. The purpose of this model is to remind people to comprehensively consider different learning sources and ways in learning and development, so as to promote effective learning and development.

#### Advantages and Disadvantages of the 70:20:10 Model

##### Advantages of the 70:20:10 Model:

Comprehensive Learning: The 70:20:10 model emphasizes comprehensive learning that encompasses practical experience, interpersonal interaction, and formal learning. This holistic approach can more effectively foster individual development and learning.

**Practical Application:** The 70% experiential learning enables individuals to apply the knowledge and skills they have learned in real-world contexts, leading to a more effective grasp and application of new concepts and methods.

**Flexibility:** This model is flexible and can be customized according to individuals' needs and learning objectives. Different individuals can engage in practice, interaction, and formal learning in varying proportions.

**Adaptability:** The 70:20:10 model is applicable across different fields and industries, extending beyond education and development. It can be applied to leadership, skill training, professional development, and various other contexts.

**Emphasis on Continuous Learning:** The model encourages individuals to engage in continuous learning and growth in their daily work, extending beyond formal training to acquire knowledge.

**Disadvantages of the 70:20:10 Model:**

**Proportion Factors:** Despite offering a guiding principle, the 70:20:10 model lacks strict scientific evidence to support the specific 70:20:10 ratio distribution. Moreover, the appropriate proportions may vary across different learning contexts.

**Importance of Formal Learning:** In certain fields and roles, theoretical knowledge and foundational concepts within formal learning (the 10% component) can be crucial. This is especially true in areas requiring specific domain expertise.

**Not Universally Applicable:** For some individuals, an excessive emphasis on experiential and interpersonal learning might not be as effective; they might benefit more from acquiring knowledge through formal learning.

**Assessment Challenges:** Compared to formal learning, assessing experiential and interpersonal learning can be more complex. Quantifying what kind of experience

individuals gain from practical situations or what they learn from interactions with others might be difficult.

**Overlooking Individual Differences:** The model might overlook the differences between individuals; some people might perform better under specific learning methods.

In conclusion, while the 70:20:10 model provides a useful framework for comprehensive learning, its application should be adjusted based on specific circumstances to ensure optimal learning outcomes.

### **The context of Local applied university**

Local applied universities are an important category of Chinese universities. Individuality and specialization are the inevitable strategic options for the survival and development of local application-oriented universities. Nowadays, the characteristic development of Chinese universities is usually limited to solving the problem of individual behavior assimilation, which is not only contrary to the original meaning of the characteristic, but also difficult to reflect the multiple interpretations of modern universities. The characteristic development of local application-oriented universities includes national characteristics, university characteristics, class characteristics and school-based characteristics, each of which has its rich and specific connotation. The key to the transformation of the characteristic development of local applied universities from concept to practice is to clarify the main structure and relationship of the characteristic development of local applied universities, and to clarify the practical strategies of local governments, schools and society in promoting the characteristic development (Zhou youshi, Jiang yihua,2021).

Chinese academic circles began to pay deep attention to the development of university characteristics in the early 21st century. Up to now, although there has been a lot of accumulation, some studies have touched on many process elements of the development of university characteristics, and paid attention to the possible

differences in the formation paths of different types of university characteristics, there are still two obvious problems. First, the existent condition discussion on the path of characteristic formation in domestic academic circles takes research universities, local universities, applied universities and industrial universities as the research objects, rather than local applied universities as the center, which inevitably brings about the limitations and appropriateness of relevant judgments. Second, the process of the formation of characteristics is the process of the role of all people, the realization of things and the development of people under the role of people. Paying attention to all people and attaching importance to people's behavior change and restraint is undoubtedly the key to the formation of characteristics. However, when we look at the existing results, we tend to pay more attention to the internal relations of the school than to the external relations of the school, and pay more attention to the realization of things than to the change of people, which inevitably leads to the infinite expansion of the boundaries of school behavior and low efficiency. The above judgment and cognition constitute the premise and foundation of our research on local applied universities (Zhong binglin, Wang xinfeng, 2016).

Local applied universities are closely connected with the development of local economy and society, and are the engines and accelerators to boost local economy. Zhang Nan (2016) mentioned that local applied universities can be traced back to the university branch schools established in Beijing, Tianjin, Shanghai and other places after the "Cultural Revolution". The university branch schools in the Beijing area take the working mechanism of integrating government, industry and learning into education as their characteristics to train talents urgently needed by Beijing's economy and society, and provide a good reference for the connotation construction of local applied universities in China. The analysis shows that the existent condition research on connotation construction of local application-oriented universities is extensive. Qian Hong (2010), Zhang Jie (2010), Liu Yinfang (2012) and other scholars have done research on connotation construction of local application-oriented universities, and the research on connotation construction is related to the

achievements made by local application-oriented universities in terms of educational positioning, talent training and social service. It is the most important part of the construction of local application-oriented universities. Liu Xuezhong (2017) focuses on the problems existing in collaborative education in local applied universities and how to achieve a breakthrough in collaborative education system. Cheng Hongbo (2017) believes that the integration of science and education should be strengthened to further improve the training model for application-oriented innovative talents. The author believes that innovating the training mode of talents and cultivating application-oriented innovative talents, whether it is strengthening the integration of science and education, strengthening the integration of industry and education, promoting collaborative education, are the necessary meaning of the construction of local application-oriented universities, and also the important content of the research of local application-oriented universities, and the connotation construction is an important part of the research of local application-oriented universities. However, it should be clearly recognized that talent training is the end point of the construction of local applied universities, and the construction of double qualified teachers is related to the quality of talent training of local applied universities, and it is the content that cannot be ignored in the research of local applied universities.

Baise University is an applied university in Baise City, Guangxi Province, China. It was established in 2006 as a regular undergraduate institution approved by the Chinese Ministry of Education, originating from the Guangxi Provincial Tianshi Normal School founded in 1938. The university's transformation and development have gone through four stages: exploration, initial establishment, deepening, and formation over more than a decade, refining its educational positioning as a high-level applied university with the "Baise spirit" and talent cultivation positioning as high-level applied talents with the "Baise spirit". Baise University has significantly promoted the development of the regional economy, society, and education, making tremendous contributions to the economic development, social progress, and national defense consolidation in the border ethnic areas. Covering an area of 1833.22 acres,

Baise University has two campuses: Chengbi Campus and Donghe Campus, with a total building area of 472,700 square meters. The university has 15 colleges, offering 57 undergraduate majors, 4 second bachelor's degree programs, and 22 associate degree (vocational) programs, covering 10 major disciplines including economics, law, education, literature, history, science, engineering, agriculture, management, and art. Existent condition, the university has more than 20,000 students and 1,611 faculty members, including 1,046 full-time teachers, 233 with doctoral degrees, 301 with senior titles, 4 doctoral supervisors, 44 master's supervisors, and 526 Double-Qualified teachers. (The official website of Baise University,2023).

The basic information of Baise University is as Table 8-9:

College	Administrative personnel	General teacher	Double-Qualified teacher	Total
1.Faculty of teacher education	18	42	52	94
2.Faculty of Music and Dance	20	28	28	56
3.Faculty of business and industry	21	48	34	82
4.Faculty of Mathematics and Statistics	16	28	36	64
5.Physical education institute	17	26	40	66
6.Faculty of Ideology and Politics	17	36	28	64
7.Faculty of Information	20	34	38	72
8.Faculty of Tourism	15	36	38	74
9.Institute of Chemical Engineering	19	34	34	68

10.Faculty of Materials	23	34	28	62
11.Faculty of Civil Engineering	20	35	39	74
12.Faculty of Foreign Languages	16	44	32	76
13.Faculty of Literature and Communication	21	42	40	82
14.Faculty of management	19	27	33	60
15.Agricultural college	20	26	26	52
Total	282	520	526	1046

Table 8 Distribution of Faculty and Staff at Baise University

College	Student Enrollment					
	1-1000	1001-1500	1501-2000	2001-2500	2501-3000	More than 3000
1.Faculty of teacher education						<input type="checkbox"/>
2.Faculty of Music and Dance	<input type="checkbox"/>					
3.Faculty of business and industry				<input type="checkbox"/>		
4.Faculty of Mathematics and Statistics			<input type="checkbox"/>			
5.Physical education institute		<input type="checkbox"/>				
6.Faculty of Ideology and Politics	<input type="checkbox"/>					



7.Faculty of Information				<input type="checkbox"/>		
8.Faculty of Tourism			<input type="checkbox"/>			
9.Institute of Chemical Engineering				<input type="checkbox"/>		
10.Faculty of Materials	<input type="checkbox"/>					
11.Faculty of Civil Engineering		<input type="checkbox"/>				
12.Faculty of Foreign Languages					<input type="checkbox"/>	
13.Faculty of Literature and Communication				<input type="checkbox"/>		
14.Faculty of management					<input type="checkbox"/>	
15.Agricultural college		<input type="checkbox"/>				

Table 9 Distribution of student population at Baise University

### Related Researches

Jane Smith (2019) The improvement of teachers' ability is an indispensable part of the education system. Through continuous professional development and training, teachers are able to better meet the diverse needs of students and improve the quality of teaching, thus promoting the all-round development of students. Improving teacher competence is the key to ensuring student success in learning. The professional level of teachers directly affects the quality of education and students' achievements.

David Chen (2019) In the digital age, upgrading teachers' technical competence is crucial. Teachers should actively adopt educational technology tools to teach courses in innovative ways that stimulate students' interest in learning and improve their skill levels. Comprehensive training and professional development as well as the support and co-operation of the Government and various sectors of the community are needed to enhance teachers' abilities in order to achieve long-term results.

Sarah Johnson (2020) To improve teachers' ability, we need to pay attention to the innovation and practice of teaching methods. Teachers should flexibly use various teaching strategies to meet the learning needs of different students and stimulate their learning potential. The improvement of teachers' ability is an inevitable requirement to cope with the ever-changing educational challenges. Only with updated knowledge and skills can students be taught and guided effectively.

Michael Lee (2021) The improvement of teachers' ability requires the establishment of an effective evaluation and feedback mechanism. Through regular assessment of teaching practice and student learning outcomes, teachers can timely adjust teaching methods and improve teaching results, thus promoting student learning and development. The improvement of teachers' ability is one of the core contents of education reform, and it is necessary to continuously improve the training mechanism and evaluation system to achieve the improvement of education quality and the realization of education objectives.

Emily Wang (2021) The promotion of teacher competence includes not only technology and teaching methods, but also emotional and interpersonal relationships. Teachers should establish a good relationship between teachers and students, care about the needs of students, and give them emotional support, so as to promote their learning and growth. Improving teachers' ability is an important measure to promote

educational equity. By improving the level of teachers, the needs of different students can be better met and the inequality of educational resources can be reduced.

Liu Meng (2015) believes that the concept of "double-skilled" teachers "reveals the differences between vocational schools and ordinary schools in running schools, and vocational school teachers are clearly different from ordinary school teachers in terms of functions. According to the existing research, the double teacher comes from the requirement of the development of vocational education in China, and the research on double teacher mainly focuses on vocational education.

Li Kaiqin (2015) took Sichuan Electric Power Vocational and Technical College as an example, and believed that the training of Double-Qualified teachers should be carried out in the following practices: enterprise expert leadership, enterprise backbone "hung up", enterprise talents part-time, professional teachers "sent down", internal trainer "certification", full-time teacher promotion, vocational education expert guidance. The author holds that the research on the connotation of double-teacher is the basis for the professional development of double-teacher to go deeper and higher level.

Hu Haian (2017) believes that there are three representative viewpoints to grasp the connotation of dual-teacher teachers. The first is administrative standards, which are mainly reflected in the requirements of production service experience, professional title requirements, research and application of application-oriented projects, etc. The basic performance of the research on double teacher in vocational education is to elaborate the connotation of double teacher and the training of double teacher. The second is academic standards, which are mainly reflected in the requirements of academic qualifications and professional titles, and the third is scholar standards. The main manifestations are "one complete", "two teachers", "three abilities" and "four certificates".

Li Mengqing (2017) believes that it is necessary to establish a set of dual teacher certification standards that combine the national level with professional characteristics. Through analysis, it is found that the research on the connotation and training of Double-Qualified teachers mainly focuses on the above content, but the research on the standard of teacher qualification is not much. The author believes that the certification standards for Double-Qualified teachers can facilitate the training of Double-Qualified teachers, optimize the team of Double-Qualified teachers, and improve the professional development level of Double-Qualified teachers, but at present, the certification standards for Double-Qualified teachers are not clear at the national level, nor do they have specific requirements combined with professional characteristics.

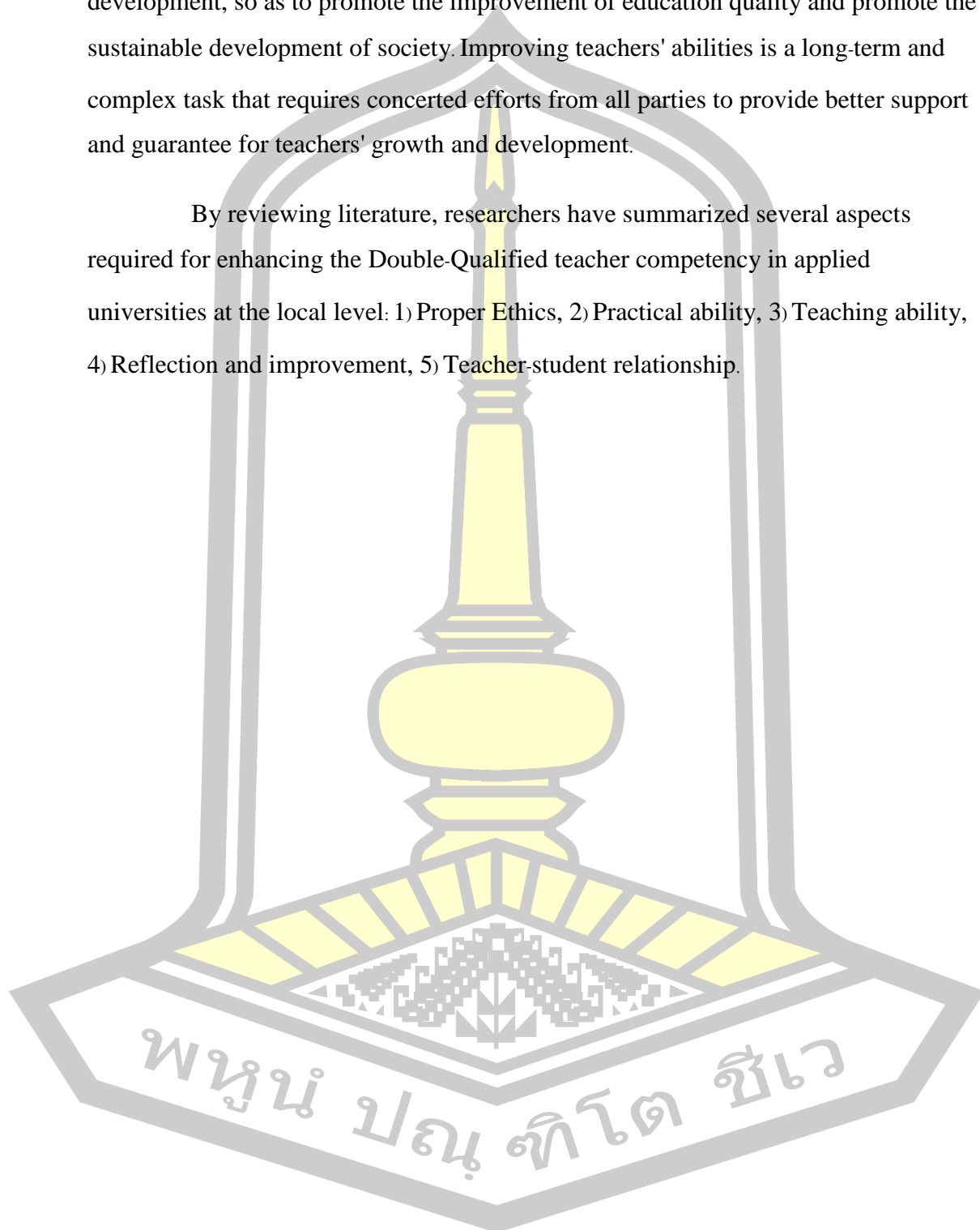
Wang Laisheng (2017) believes that in order to form the greatest common divisor, more practice is needed to study the connotation of Double-Qualified teachers. In addition, research on the dilemma of dual-teacher mainly stays in the insufficient number and unreasonable structure of dual-teacher. The research on Double-Qualified teachers in local application-oriented universities shows the important role of Double-Qualified teachers in application-oriented undergraduate education, and CAI Xuefeng (2018) has made a relevant discussion.

Xiang Zhiwei (2021) The improvement of teachers' ability requires the establishment of a good learning and development environment. Schools and educational institutions should provide a variety of professional development opportunities and resources to motivate teachers to continuously learn and grow and improve their teaching. The improvement of teachers' ability helps to create a good learning environment, stimulate students' learning interest and motivation, and promote the continuous progress of the entire education system.

Wang Hua (2022) The improvement of teachers' ability needs the support and guidance of the government and the education department. They should formulate

relevant policies and measures to strengthen investment in teacher training and development, so as to promote the improvement of education quality and promote the sustainable development of society. Improving teachers' abilities is a long-term and complex task that requires concerted efforts from all parties to provide better support and guarantee for teachers' growth and development.

By reviewing literature, researchers have summarized several aspects required for enhancing the Double-Qualified teacher competency in applied universities at the local level: 1) Proper Ethics, 2) Practical ability, 3) Teaching ability, 4) Reflection and improvement, 5) Teacher-student relationship.



### CHAPTER III

### RESEARCH METHODOLOGY

This chapter summarizes the research design and procedure of Double-Qualified teacher competence in local applied universities, which is divided into three phases. Each phase describes in detail the steps of the program and the expected results, as shown in the figure.

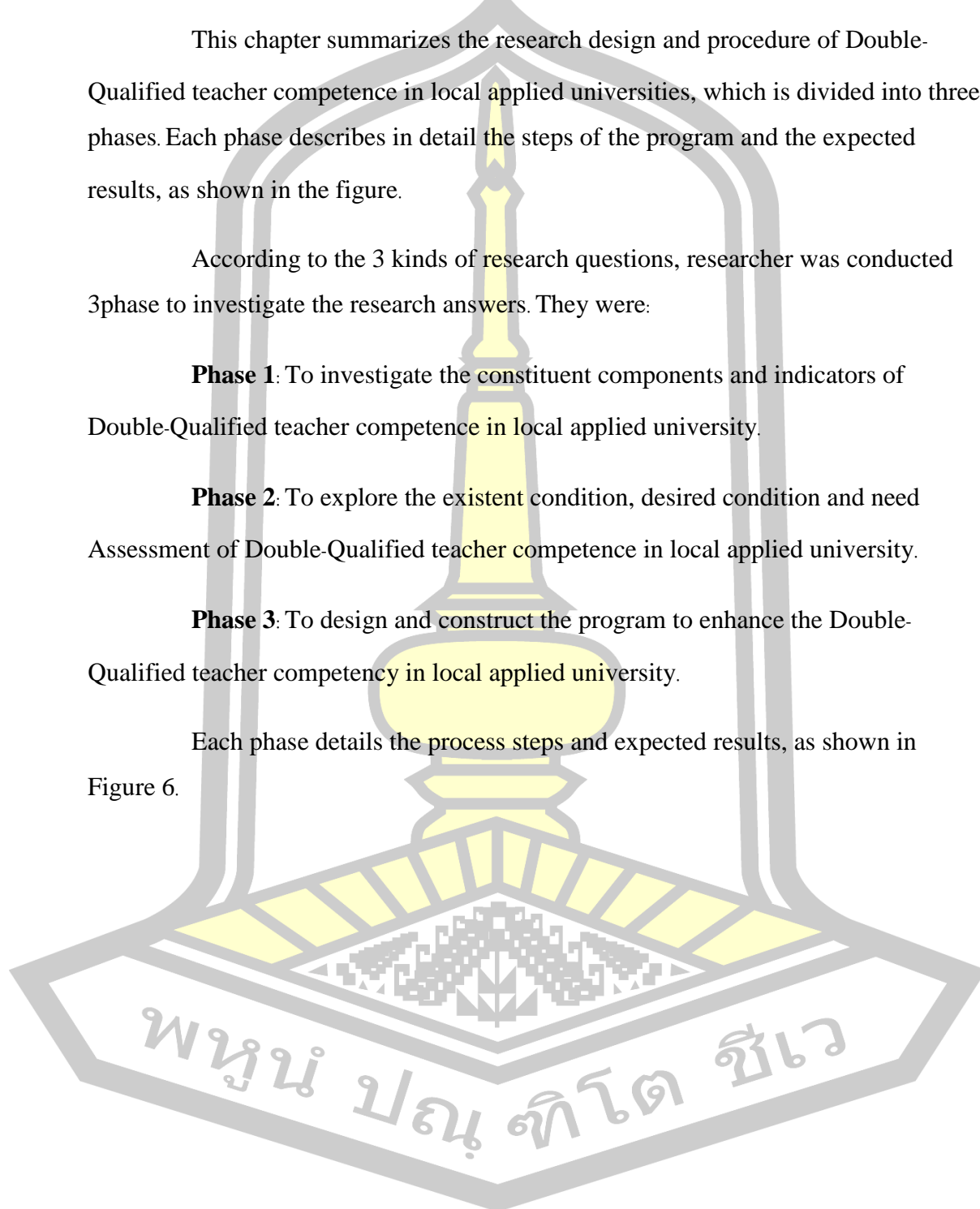
According to the 3 kinds of research questions, researcher was conducted 3phase to investigate the research answers. They were:

**Phase 1:** To investigate the constituent components and indicators of Double-Qualified teacher competence in local applied university.

**Phase 2:** To explore the existent condition, desired condition and need Assessment of Double-Qualified teacher competence in local applied university.

**Phase 3:** To design and construct the program to enhance the Double-Qualified teacher competency in local applied university.

Each phase details the process steps and expected results, as shown in Figure 6.



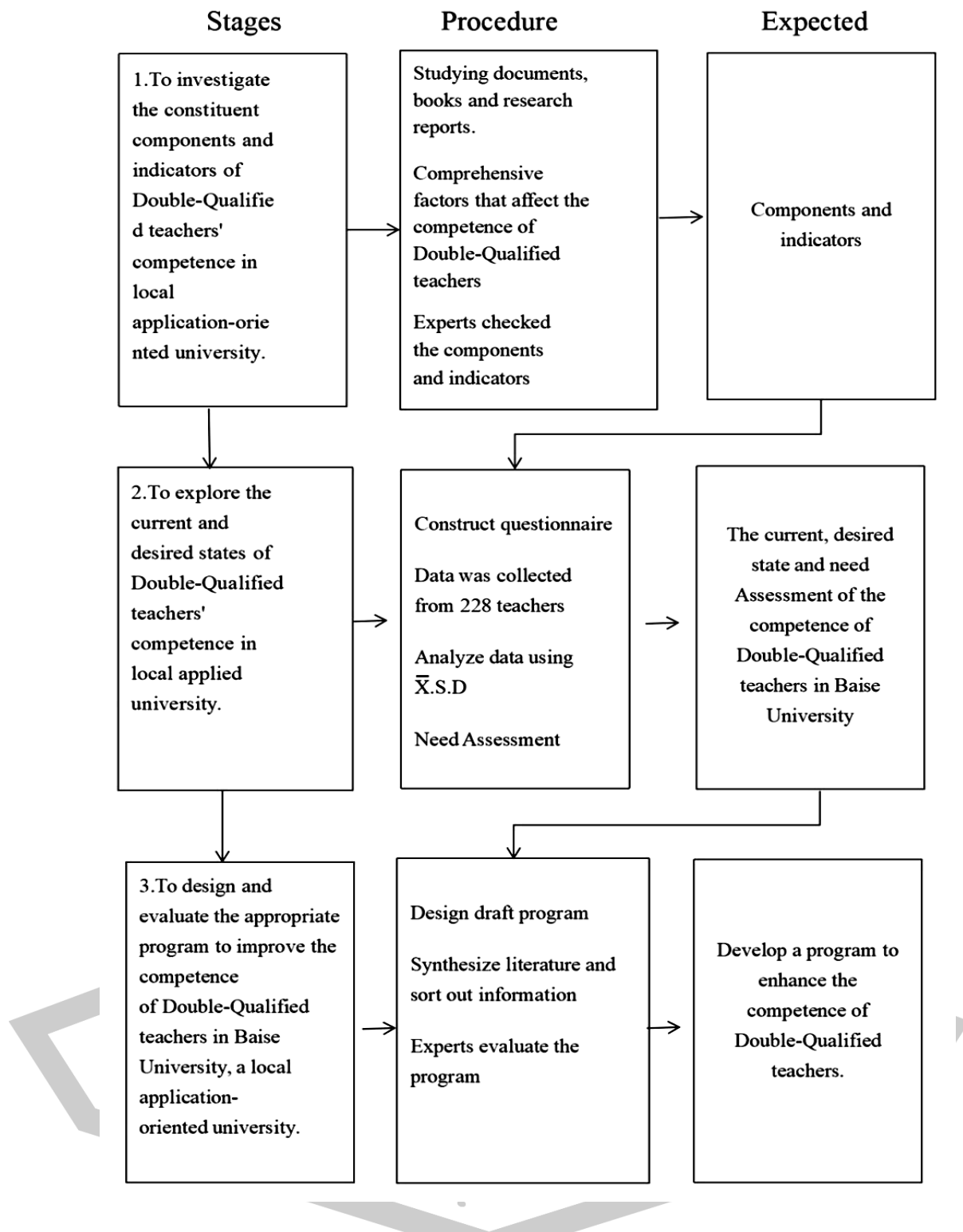


Figure 6 Flow Chart of Research Process



The details of each phase are as follows:

**Phase 1:** Investigate the constituent components and indicators of Double-Qualified teacher competence in local applied university.

The researcher studies documents, summarizes, analyzes and synthesizes components and indicators Measured using qualitative data analysis techniques to obtain the components and indicators of the studied variables. The research methods are as follows:

**Stage 1** Study of the components and indicators of the studied variables

1. Data sources

Include books, textbooks, documents and research related to the studied variables that can be retrieved from libraries, the Internet, online databases.

2. Research instrument

Documents (record cards) or using Microsoft Word.

3. Data collection

The researcher searched for information from various sources and selected them. Categorize the content according to the variables studied, systematically store data.

4. Data Manipulation and Analysis

4.1 The researcher proceeds as follows. validate Completeness of the data according to the variables studied.

4.2 Data analysis of the documents, the researcher summarizes, analyzes and synthesizes using content analysis techniques and uses the analytical data to classify items into data analysis tables.

**Stage 2** Assessment of the suitability of components and indicators by qualified (Focus Group) groups of informants, including 5 experts.

### **1. Experts**

The researcher has selected Specific (Purposive Sampling) of 5 people who have all the qualifications according to the expert criteria as follows:

- 1) Expert in educational research is a teacher in a higher education institution teachers or educational personnel with a doctoral degree in the field of research or educational measurement and evaluation
- 2) Specialist in education administration and development who is a teacher in higher education institution with a doctoral degree in education administration
- 3) Educational Administration Specialist Be an Education Administrator Educational institution administrator with a doctoral degree in educational administration Special.

Experts in examining this research Instrument include:

- 1) Assoc. Prof. Dr. Pacharawit Chansirisira, Department of Educational Administration, Faculty of Education, Mahasarakham University
- 2) Assoc. Prof. Dr. Suwat Julsuwan, Department of Educational Administration, Faculty of Education, Mahasarakham University
- 3) Prof. Dr. Liu Fang, Vice President, Guangxi Baise University, China
- 4) Prof. Dr. Cao Alin, Director of Teaching Management, Baise University, Guangxi, China
- 5) Asst. Prof. Dr. Wang Fang, Director, Faculty Development Center, Guangxi Baise University, China

## 2. Research Instrument

### 2.1 Characteristics of Research Instrument

This was an assessment form, divided into 2 parts:

**Part 1** General information of the assesses consisting of 1) Name-Surname. Respondents were given 2 administrative positions, 3) Academic positions, 4) Highest educational background/branch/faculty/university/country, and 5) Work place.

### **Part 2** Suitability assessment form of the program

Using the 5-level rating scale (Likert Scale). Score values are set to 5 levels as follows.

Level 5 means very suitability, Very high level.

Level 4 means suitability, high level.

Level 3 means suitability, medium level.

Level 2 means not very suitability, low level.

Level 1 means not suitability, very low level.

## 3. Data Collection

3.1 The researcher requested official documents to collect data from the Faculty of Education, Mahasarakham University

3.2 Contact and coordinate with experts to schedule a date and time for data collection and collect data

#### 4. Data Manipulation and Analysis

Data organization, the researcher carried out the verification. Completeness of the assessment form, coded, scored, and recorded in the computer.

Evaluating the suitability of teachers' teaching competency in journalism education management. Use statistics to analyze data, including mean and standard deviation, using Compare the average with the Midpoint criteria (Srisa-at, B. 2010) as follows:

4.51 - 5.00 means it is very suitability, highest level

3.51 - 4.50 means it is suitability, high level

2.51 - 3.50 mean it is suitability, medium level

1.51 - 2.50 means it is suitability, low level

1.00 - 1.50 means it is not suitability, lowest level

#### 5. Data Manipulation and Analysis

Basic statistics include: Average (Mean), Standard Deviation (S.D).

**Phase 2:** Explore the existent condition, desired condition and need

Assessment of Double-Qualified teacher competence in local applied university.

##### 1. Procedure

In this phase, the researcher constructed draft of survey questionnaire based on the components and indicators that found out from phase 1.

The evaluation form includes questionnaires content was sent and verified by 5 experts to check the validity of questionnaire. Experts evaluated about the

suitability of questionnaire which are important evidence before using to survey. Then it was analyzed in order to have real questionnaire.

## 2. Population and Sample

In order to obtain the sample for this study, the researcher used random sampling technique to extract the study sample. The population was 526, and the Yamane formula (1973) was used to obtain the sample.

Formula

$$n = \frac{N}{1 + Ne^2}$$

The meanings are

n = sample size

N = research population size

e = confidence level (95%)

Then the result of sample size is shown in the table 10.

Baise University		Total	Sample size	Sample Method
Double-Qualified teacher				
School leader		26	12	Radom Sampling
Professor		53	25	
Associate professor		127	65	
Assistant professor		320	126	Taro Yamane
Total		526	228	

Table 10 Population and Sample

The researchers selected the Double-Qualified teachers of Baise university. Among them, there are 26 School leaders, 53 professors, 127 Associate professors and 320 Assistant professors. The university has a total of 526 dual-teacher teachers, and according to the Yamane Taro formula, the number of participants is 228.

### 3. Research Instrument

#### 3.1 Instrument characteristics

In order to understand the existent condition and expectation of Double-Qualified teachers in Baise university, a questionnaire was designed.

**Part 1 (Checklist):** The analysis of respondents' demographic was analyzed by descriptive statistics including frequency (f), percentage (%) including Gender, Age, qualification and experience.

**Part 2 (Questionnaire):** The close-ended questionnaires was used to measure the existence state and desire state of Double-Qualified teacher competency in local applied university. The descriptive statistic and a 5 - point rating scales questionnaires was used to rate the level of teachers' teaching competency in journalism education management with the following of 5 - point rating scales from 5 = Very high, 4 = high, 3 = fair, 2 = poor, 1 = very poor. Mean and Standard Deviation (S.D) was employed to analyze the level of the existent condition, desired condition of Double-Qualified teacher competency in local applied university.

To interpret mean score on which the respondents ticked about the existent condition and desired condition of local applied university Double-Qualified teachers, the researcher interpreted based on the mean score which was proposed by Sri-Saad (2010). Mean Score were interpreted as follows:

4.51 - 5.00 refers to the level of the existent condition and desired condition of Double-Qualified teacher competency in Local Applied University is very high.

3.51 - 4.50 refers to the level of the existent condition and desired condition of Double-Qualified teacher competency in Local Applied University is high.

2.51 - 3.50 refers to the level of the existent condition and desired condition of Double-Qualified teacher competency in Local Applied University is medium.

1.51 - 2.50 refers to the level of the existent condition and desired condition of Double-Qualified teacher competency in Local Applied University is low.

1.00 - 1.50 refers to the level of the existent condition and desired condition of Double-Qualified teacher competency in Local Applied University is very low.

### 3.2 Creating and finding quality Research Instrument

1) Bring the created questionnaire to the thesis advisor to check and make an offer.

2) The researcher takes the revised questionnaire according to the thesis advisor's recommendation and presents it to the experts. To check the validity of the content (Content Validity) and to find the Index of Congruence (IOC) by considering the text with value. The accuracy of the content validity of questionnaires were valid if the values of IOC criteria that greater than or equal 0.8. Then, the questionnaire was revised based on the experts' suggestions and recommendations, and was returned to the adviser to adjust it before trying it out. The IOC was considered as follows:

+1 The question is consistent with the definition of specific terms.

0 Questions Not sure if they correspond to the definition of specific terms.

-1 The question does not correspond to the definition of specific terms.

Ultimately, researcher acquired the questionnaire within two weeks and result of the level of agreement is +1 for questionnaire, so that the researcher used draft questionnaire fully as real questionnaire.



Experts in reviewing research and development tools give their opinion on consistency of the questions using the IOC (Index of Congruence) technique that the researcher has selected Specific (Purposive Sampling) of 5 people who have all the qualifications according to the expert criteria as follows:

1. Expert in educational research is a teacher in a higher education institution teachers or educational personnel with a doctoral degree in the field of research or educational measurement and evaluation

2. Specialist in education administration and development who is a teacher in higher education institution with a doctoral degree in education administration

3. Educational Administration Specialist Be an Education Administrator Educational institution administrator with a doctoral degree in educational administration Special. Experts in examining this research Instrument include:

1) Prof. Dr. Liu Fang, Vice President, Guangxi Baise University, China

2) Prof. Dr. Jiang Hongxing, Vice President, Hezhou University, Guangxi, China

3) Prof. Dr. Zhou Dingbo, Vice President, Science and technology Normal University, Guangxi, China

4) Prof. Dr. Cao Alin, Director of Teaching Management, Baise University, Guangxi, China

5) Asst. Prof. Dr. Wang Fang, Director, Faculty Development Center, Baise University, Guangxi, China

The researcher used a questionnaire on existent condition and desired condition. Let experts consider and give opinions on the consistency of the questions using the IOC (Index of Congruence) technique and select questions with a consistency index greater than or equal to 0.8.

1) The researcher took the questionnaire and tested it out (Try-Out) to find the discrimination and reliability value.

2) The discrimination used to find item classification power by finding the simple correlation coefficient between item scores and total scores (Item-Total Correlation) from Pearson's simple correlation coefficient. 0.20 or more by looking at the correlation of item scores and total scores (Item Total Correlation) The researcher took the questions that had discrimination values to find the confidence values for the entire version using the Cronbach's Alpha Coefficient method, criteria of 0.70 and above.

3) Print the complete questionnaire. Then used to collect data from the sample group.

#### **4. Data collection**

1) Memo to the Faculty of Education Mahasarakham University Issue a letter asking for cooperation in answering the questionnaire asking for the assistance of collecting data from the specified sample group.

2) The researcher submitted the letter to the Baise Education Office, Baise State to get permission for doing research in Baise, Guangxi. After getting permission letter, the researcher distributed the questionnaire to the participating schools. Finally, the researcher collected questionnaires within four weeks. The researcher is a Double-Qualified teacher, the researcher distributed questionnaire for 228 people. Then it took back 100% from the sample.

#### **5. Data Manipulation and Analysis**

##### **5.1 Data Manipulation and analysis**

1) For data analysis, descriptive statistic which included Mean and standard Deviation (S.D) was used to analyze the data from the survey on questions.

2) As the measurement scales, the following Five-point Likert scales were used for the existent condition of Double-Qualified teacher competency in Baise University.

3) Take a completed questionnaire for grades.

4) Analyze necessary needs by priority Need of Index.

To interpret mean score on which the respondents ticked about the existent condition and desired condition of Double-Qualified teachers in Baise University, the researcher interpreted based on the mean score which was proposed by Srisa-ard, B. (2010). Mean Score were interpreted as follows:

4.51 - 5.00 refers to the level of the existent condition and desired condition of Double-Qualified teacher competency in Local Applied University is very high.

3.51 - 4.50 refers to the level of the existent condition and desired condition of Double-Qualified teacher competency in Local Applied University is high.

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1.51 - 2.50 refers to the level of the existent condition and desired condition of Double-Qualified teacher competency in Local Applied University is low.

1.00 - 1.50 refers to the level of the existent condition and desired condition of Double-Qualified teacher competency in Local Applied University is very low.

## 5.2 Statistics for data analysis

In this research the researchers used statistics to analyze data by computer. By using a statistical package, selecting and analyzing data that is consistent with the aims and using statistics as follows.

1. Average (Mean)
2. Standard Deviation
3. Priority Needs Index = PNI

The needs for teacher competency development in student assessment will be analyzed by modifying Priority Needs Index (PNI modified) (Wongwanich, 2005). PNI modified was calculated by the following formula:

$$\text{PNI modified} = \frac{(I - D)}{D}$$

Where

I: Importance or desired performance

D: Degree of success or existent condition performance

The modified PNI analysis could reflect the Double-Qualified teachers' competency in Baise University to be developed. A high index represents high need, which is supposed to be more developed rather than a lower index. The Double-Qualified teachers' competency elements showing a high value of modified PNI would result in the higher priority of that Double-Qualified teachers' competency to be further developed. The modified PNI value was normally in the range of 0.00 - 1.00 to facilitate an interpretation. The Double-Qualified teachers' competency that had modified PNI value above 0.30 or higher was considered critical (Wongwanich, 2005) and will be required to be improved urgently. In case of the modified PNI values lower than 0.30, the extent of the efforts to improve themselves becomes less.

**Phase 3:** Design the appropriate program to enhance the competence of Double-Qualified teachers in Baise University, a local application-oriented university.

The researcher conducted the study by using qualitative research with the following research methods.

**Step 1** The study method such as a best practice school or an in-depth interview, where the researcher proceeds with the following steps:

### **1. Expert**

The researcher has selected Specific (Purposive Sampling) of 5 people who have all the qualifications according to the expert criteria as follows:

- 1) Expert in educational research is a teacher in a higher education institution teachers or educational personnel with a doctoral degree in the field of research or educational measurement and evaluation
- 2) Specialist in education administration and development who is a teacher in higher education institution with a doctoral degree in education administration
- 3) Educational Administration Specialist Be an education administrator educational institution administrator with a doctoral degree in educational administration Special.

Experts in examining this research Instrument include:

- 1) Prof. Dr. Liu Fang, Vice President, Baise University, Guangxi, China
- 2) Prof. Dr. Jiang Hongxing, Vice President, Hezhou University, Guangxi, China
- 3) Prof. Dr. Zhou Dingbo, Vice President, Science and technology Normal University, Guangxi, China

4) Asst. Prof. Dr. Wen Fengping, Dean of the College, Civil Engineering and Architecture, Baise University, Guangxi, China

5) Asst. Prof. Dr. Yang Wengui, Dean of the College, Faculty of teacher education, Baise University, Guangxi, China

## **2. Research instrument**

### **2.1 Constructed research instrument**

The instrument used for data collection was an interview (structured) has the following components:

Part 1 General information

Part 2 Opinions on the issues

### **2.2 Find out quality of research instrument**

The researcher has proceeded to create and find the quality of the tools as follows.

- 1) Study the concepts, theories, and related research.
- 2) Create an interview questionnaire.
- 3) Take the interview form to the advisor to check the correctness of the interview form, and idioms, and make improvements as recommended.
- 4) Take the interview form to experts to assess the consistency between the objective questions.
- 5) Improve the interview form according to the advice of experts. to be published in the complete edition

### 3. Data Collection

The researcher collects data. Experts conduct an interview. The details are as follows.

3.1 Prepare a letter asking for cooperation from the Faculty of Education to experts.

3.2 Submit a letter requesting a cooperation thesis outline and a structured interview form to the experts to ask for assistance in giving an interview.

3.3 Coordinate with experts to request an interview date and time.

3.4 Interview on the appointed date and time.

### 4. Data Manipulation and Analysis

4.1 Collect interview data. Organize information group content.

4.2 Data were analyzed by qualitative data analysis techniques. Content Analysis.

**Step 2** Formulate a program to enhance the competencies of Dual-Qualified teachers in local applied universities.

The researcher explains the method of creating enhance the ability of Dual-Qualified teachers in local applied universities by studying principles, concepts, theories, and studying necessary needs. Study good practices and create program to enhance the competencies of Dual-Qualified teachers.

**Step 3** Assessment Results of the Program to Enhance the Competence of Dual-Qualified teachers in Local Applied Universities.



### 1. Expert.

The researcher has selected Specific of 5 people who have all the qualifications according to the expert criteria as follows:

- 1) Expert in educational research is a teacher in a higher education institution teachers or educational personnel with a doctoral degree in the field of research or educational measurement and evaluation
- 2) Specialist in education administration and development who is a teacher in higher education institution with a doctoral degree in education administration
- 3) Educational Administration Specialist Be an education administrator educational institution administrator with a doctoral degree in educational administration Special. Experts in examining this research Instrument include: Experts in assessing the suitability, accuracy and feasibility of the program as follows:

- 1) Prof. Dr. Liu Fang, Vice President, Guangxi Baise University, China
- 2) Prof. Dr. Cao Alin, Director of Teaching Management, Baise University, Guangxi, China
- 3) Asst. Prof. Dr. Wang Fang, Director, Faculty Development Center, Baise University, Guangxi, China
- 4) Asst. Prof. Dr. Wen Fengping, Dean of the College, Civil Engineering and Architecture, Baise University, Guangxi, China
- 5) Asst. Prof. Dr. Yang Wengui, Dean of the College, Faculty of teacher education, Baise University, Guangxi, China

### 2. Research instrument

#### 2.1 Constructed research instrument

The researcher developed it by studying documents. Relevant research of program components Then determine the key points to be assessed from the information obtained from the study. then used to create questions to cover the issue.

## 2.2 Find out quality of research instrument

### 2.2.1 Study the details of the components of the program

2.2.2 Determine the key points to be assessed from the data obtained from the study. used to write questions to cover all issues

### 2.2.3 Advisor the correctness of the idioms

### 2.2.4 Experts Verify Content Validity of Question Clarity

## 3. Data Collection

The researcher coordinated with experts to evaluation the to suitability and feasibility of the program.

## 4. Data Manipulation and Analysis

After the construction of the research instruments, to check the components of program. The descriptive statistic and a five - point rating scales questionnaires was used to rate the level of the program with the following of five - point rating scales from 5 = very high, 4 = high, 3 = medium, 2 = low, 1 = very low. Mean and Standard Deviation (S.D) was employed to analyze the level of components of program. The rating is:

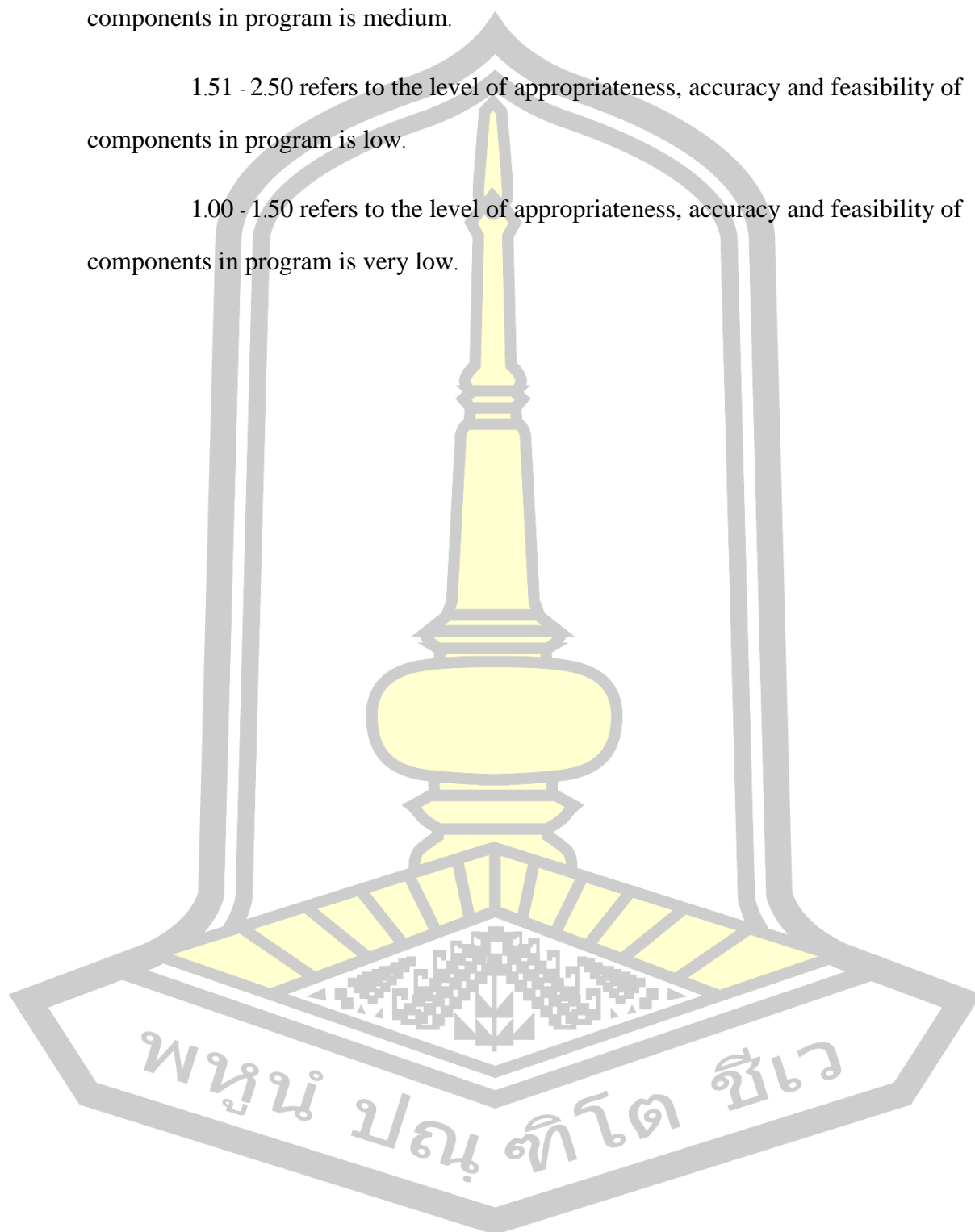
4.51 - 5.00 refers to the level of appropriateness, accuracy and feasibility of components in program is very high.

3.51 - 4.50 refers to the level of appropriateness, accuracy and feasibility of components in program is high.

2.51 - 3.50 refers to the level of appropriateness, accuracy and feasibility of components in program is medium.

1.51 - 2.50 refers to the level of appropriateness, accuracy and feasibility of components in program is low.

1.00 - 1.50 refers to the level of appropriateness, accuracy and feasibility of components in program is very low.



## CHAPTER IV

### RESULTS OF DATA ANALYSIS

The result of Double-Qualified teachers in local applied universities, to develop a program, according to the gained data is from experts and survey questionnaire, the researcher explains the procedures of data analysis as following.:

1. The symbol for data analysis representative
2. Phases of data analysis
3. Results of data analysis

#### **The symbol for data analysis representative**

To comprehend the interpretation of data analysis results, researchers have defined the symbols used in the data analysis results as follows:

$\bar{X}$	:	Mean
S.D	:	Standard Deviation
N	:	Population
I	:	Importance or Desired State
D	:	Degree of success or Existence State
$PNI_{modified}$	:	Priority Need Index modified

#### **Phases of data analysis**

Data analysis is divided into three stages:

Phase 1: To investigate the constituent components and indicators of Double-Qualified teacher competence in local applied university.

Phase 2: To explore the existent condition, desired condition and need Assessment of Double-Qualified teacher competence in local applied university.

Phase 3: To design and evaluate the appropriate program to improve the competence of Double-Qualified teachers in Baise University, a local applied university.

### Result of data analysis

**Phase 1:** Result of analyzing of components and indicators of Double-Qualified teacher competence in local application-oriented university.

This phase was conducted through checking components and indicators by five experts. The researcher sent evaluation form to the five experts and then it was returned back from experts during 2 weeks. The research results show that the competencies of Double-Qualified teachers include the following components: 1) Proper ethics, 2) Practical ability, 3) Teaching ability, 4) Reflection and improvement, 5) Teacher-student relationship.

Table 11 Mean and standard deviation of the components of Double-Qualified teachers' competencies.

Items	Components of Double-Qualified teachers	$\bar{X}$	S.D	Level of Suitability
1.	Proper ethics	4.60	0.49	Very High
2.	Practical ability	4.80	0.45	Very High
3.	Teaching ability	4.80	0.48	Very High
4.	Reflection and improvement	4.60	0.46	Very High
5.	Teacher-student relationship	4.80	0.45	Very High
Total		4.77	0.19	Very High

According to table 11 showed that all components of Double-Qualified teacher competence in Baise University are suitability.

**Phase 2:** To explore the existent condition, desired condition and need Assessment of Double-Qualified teacher competence in local applied university.

### 1. The result of respondent's demographic

At this stage, a questionnaire was sent to the respondent, and the questionnaire was returned to the respondent within 4 weeks. A total of 228 questionnaires were collected, and the final results were shown in Table 12.

Table 12 The Frequency and Percentage of Respondent's Demographic

Status of Survey Respondents	n=228	
	Frequency	Percentage
1.Respondents		
1) School leader	12	5.26
2) Professor	25	10.97
3) Associate professor	65	28.51
4) Assistant professor	126	55.26
2.Gender		
1) Female	91	39.91
2) Male	137	60.09
3.Age Group		
1) Under 25 years old	5	2.19
2) 25 - 35 years old	28	12.28
3) 36 - 45 years old	64	28.07
4) 46 - 55 years old	71	31.14
5) Over 55 years old	60	26.32
4.Working Experiences		

1) Under 5 years old	13	5.70
2) 5 - 10 years old	53	23.25
3) 11 - 15 years old	74	32.46
4) Over 15 years old	88	38.60
<b>5. Qualification</b>		
1) Bachelor's Degree	19	8.33
2) Master's Degree	146	64.04
3) Doctor's Degree	63	27.63

According to Table 12, it is found that 55.26% of the respondents to the questionnaire are assistant professors and 28.51% are associate professors. Most of them were male, accounting for 60.09%. The age group is mainly between 46 and 55 years old, accounting for 31.14%. Most respondents have more than 15 years of work experience, accounting for 38.6 percent. Most of the respondents had a master's degree, accounting for 64.04%.

## 2. The result of the existent condition and desired condition of Double-Qualified teachers

Table 13 The results of Existent condition, Desired condition and PNI of Double-Qualified teachers

Component and Indicator	Existent condition (n=228)			Desired condition (n=228)			PNI	Rank
	$\bar{X}$	S.D.	Level of ability	$\bar{X}$	S.D.	Level of ability		
1. Proper ethics	2.69	0.64	Medium	4.85	0.26	Very High	0.80	1
2. Practical ability	2.78	0.70	Medium	4.88	0.34	Very High	0.76	2



3.Teaching ability	2.95	0.61	Medium	4.87	0.35	Very High	0.65	5
4.Reflection and improvement	2.88	0.65	Medium	4.81	0.38	Very High	0.67	4
5.Teacher-student relationship	2.81	0.64	Medium	4.86	0.35	Very High	0.73	3
Total	2.82	0.65	Medium	4.85	0.34	Very High	0.72	/

Table 13 shows the mean and standard deviation of the status quo and expected state of Double-Qualified teachers' ability. The overall status quo of Double-Qualified teachers' ability was in the middle level ( $\bar{x}=2.82$ ). The existent condition scores high on: 1) Teaching ability ( $\bar{x}=2.95$ ), 2) Reflection and improvement ( $\bar{x}=2.88$ ), 3) Teacher-student relationship ( $\bar{x}=2.81$ ), and low on Proper ethics ( $\bar{x}=2.69$ ). The overall desired state of Double-Qualified teachers' ability was at a very high level ( $\bar{x}=4.85$ ). In the desired, the highest scores were: 1) Practical ability ( $\bar{x}=4.88$ ), 2) Teaching ability ( $\bar{x}=4.87$ ), 3) Teacher-student relationship ( $\bar{x}=4.86$ ), and the lowest scores were: Reflection and improvement ( $\bar{x}=4.81$ ). The results of the researchers' analysis of the existent condition average and desired average of Double-Qualified teachers to determine the Improvement Need Index (PNI). The results show that the demands for Double-Qualified teachers ability were as follows: 1) Proper ethics (PNI=0.80), 2) Practical ability (PNI=0.76), 3) Teacher-student relationship (PNI=0.73), 4) Reflection and improvement (PNI=0.67), 5) Teaching ability (PNI=0.65).

Table 14 The results of Existent condition, Desired condition and PNI of Proper ethics

Proper ethics	Existent condition (n=228)			Desired condition (n=228)			PNI	Rank
	$\bar{X}$	S.D.	Level of ability	$\bar{X}$	S.D.	Level of ability		
1.Teachers need to have the qualities of integrity and honesty	2.63	0.62	Medium	4.87	0.21	Very High	0.85	1
2.Teachers should respect others' privacy	2.71	0.59	Medium	4.80	0.32	Very High	0.77	4
3.In any circumstance, it is necessary to abide by the law	2.66	0.63	Medium	4.85	0.17	Very High	0.82	3
4.Teachers should have good teamwork skills	2.83	0.71	Medium	4.89	0.27	Very High	0.73	5
5.Teachers should learn self-monitoring and also supervise others	2.64	0.65	Medium	4.83	0.33	Very High	0.83	3
Total	2.69	0.64	Medium	4.85	0.26	Very High	0.80	/

Table 14 shows the mean and standard deviation of the status quo and expected state of Proper ethics. The overall status quo of Proper ethics was in the

middle level ( $\bar{x}=2.69$ ). The existent condition scores high on: 1) Teachers should have good teamwork skills ( $\bar{x}=2.83$ ), 2) Teachers should respect others' privacy ( $\bar{x}=2.71$ ), 3) In any circumstance, it is necessary to abide by the law ( $\bar{x}=2.66$ ), and low on Teachers need to have the qualities of integrity and honesty ( $\bar{x}=2.63$ ). The overall desired of Ethic was at a very high level ( $\bar{x}=4.85$ ). In the desire state, the highest scores were: 1) Teachers should have good teamwork skills ( $\bar{x}=4.89$ ), 2) Teachers need to have the qualities of integrity and honesty ( $\bar{x}=4.87$ ), 3) In any circumstance, it was necessary to abide by the law ( $\bar{x}=4.85$ ), and the lowest scores were: Teachers should respect others' privacy ( $\bar{x}=4.80$ ). The results of the researchers' analysis of the existent condition average and desired average of Proper ethics to determine the Improvement Need Index (PNI). The results show that the demands for Proper ethics were as follows: 1) Teachers need to have the qualities of integrity and honesty (PNI=0.85), 2) Teachers should learn self-monitoring and also supervise others (PNI=0.83), 3) In any circumstance, it was necessary to abide by the law (PNI=0.82), 4) Teachers should respect others' privacy (PNI=0.77), 5) Teachers should have good teamwork skills (PNI=0.73).

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Table 15 The results of Existent condition, Desired condition and PNI of Practical ability

Practical ability	Existent condition (n=228)			Desired condition (n=228)			PNI	Rank
	$\bar{X}$	S.D.	Level of ability	$\bar{X}$	S.D.	Level of ability		
1.Teachers should have more professional technical skills	2.73	0.72	Medium	4.84	0.34	Very High	0.77	2
2.Teachers should have problem-solving abilities	2.84	0.64	Medium	4.91	0.42	Very High	0.73	4
3.Teachers should have knowledge or skills acquired through practical experience	2.79	0.65	Medium	4.86	0.35	Very High	0.74	3
4.Teachers should be proficient in using tools and equipment	2.63	0.71	Medium	4.94	0.26	Very High	0.88	1
5.Continuously improve through teaching feedback	2.91	0.76	Medium	4.83	0.34	Very High	0.66	5
Total	2.78	0.70	Medium	4.88	0.34	Very High	0.76	/

Table 15 shows the mean and standard deviation of the status quo and expected state of Practical ability. The overall status quo of Practical ability was in the middle level ( $\bar{x}=2.78$ ). The existent condition scores high on: 1) Continuously improve through teaching feedback ( $\bar{x}=2.91$ ), 2) Teachers should have problem-solving abilities ( $\bar{x}=2.84$ ), 3) Teachers should have knowledge or skills acquired through practical experience ( $\bar{x}=2.79$ ), and low on Teachers should have more professional technical skills ( $\bar{x}=2.73$ ). The overall desired of Practical ability was at a very high level ( $\bar{x}=4.88$ ). In the desire state, the highest scores were: 1) Teachers should be proficient in using tools and equipment ( $\bar{x}=4.94$ ), 2) Teachers should have problem-solving abilities ( $\bar{x}=4.91$ ), 3) Teachers should have knowledge or skills acquired through practical experience ( $\bar{x}=4.86$ ), and the lowest scores were: Continuously improve through teaching feedback ( $\bar{x}=4.83$ ). The results of the researchers' analysis of the existent condition average and desired average of Practical ability to determine the Improvement Need Index (PNI). The results show that the demands for Practical ability were as follows: 1) Teachers should be proficient in using tools and equipment (PNI=0.88), 2) Teachers should have more professional technical skills (PNI=0.77), 3) Teachers should have knowledge or skills acquired through practical experience (PNI=0.74), 4) Teachers should have problem-solving abilities (PNI=0.73), 5) Continuously improve through teaching feedback (PNI=0.66).

Table 16 The results of Existent condition, Desired condition and PNI of Teaching ability

Teaching ability	Existent condition (n=228)			Desired condition (n=228)			PNI	Rank
	$\bar{X}$	S.D.	Level of ability	$\bar{X}$	S.D.	Level of ability		
1.Systematic, organized, and targeted design of teaching activities	3.32	0.54	Medium	4.87	0.21	Very High	0.47	5
2.Have a rich reserve of teaching knowledge	2.73	0.67	Medium	4.91	0.32	Very High	0.80	2
3.Having good abilities and skills in communication and interaction	2.65	0.58	Medium	4.85	0.53	Very High	0.83	1
4.Teachers should create a positive learning environment and maintain good classroom discipline	2.76	0.63	Medium	4.78	0.36	Very High	0.73	3
5.Continuously learn and improve one's own	3.31	0.65	Medium	4.93	0.33	Very High	0.49	4

knowledge and skills								
Total	2.95	0.61	Medium	4.87	0.35	Very High	0.66	/

Table 16 shows the mean and standard deviation of the existent condition, desired condition of Teaching ability. The overall existent condition of Teaching ability was in the middle level ( $\bar{x}=2.95$ ). The existent condition scores high on: 1) Systematic, organized, and targeted design of teaching activities ( $\bar{x}=3.32$ ), 2) Continuously learn and improve one's own knowledge and skills ( $\bar{x}=3.31$ ), 3) Teachers should create a positive learning environment and maintain good classroom discipline ( $\bar{x}=2.76$ ), and low on Having good abilities and skills in communication and interaction ( $\bar{x}=2.65$ ). The overall desired of Teaching ability was at a very high level ( $\bar{x}=4.87$ ). In the desired, the highest scores were: 1) Continuously learn and improve one's own knowledge and skills ( $\bar{x}=4.93$ ), 2) Have a rich reserve of teaching knowledge ( $\bar{x}=4.91$ ), 3) Systematic, organized, and targeted design of teaching activities ( $\bar{x}=4.87$ ), and the lowest scores were: Teachers should create a positive learning environment and maintain good classroom discipline ( $\bar{x}=4.78$ ). The results of the researchers' analysis of the existent condition average and desired average of Teaching ability to determine the Improvement Need Index (PNI). The results show that the demands for Teaching ability were as follows: 1) Having good abilities and skills in communication and interaction (PNI=0.83), 2) Have a rich reserve of teaching knowledge (PNI=0.80), 3) Teachers should create a positive learning environment and



maintain good classroom discipline (PNI=0.73), 4) Continuously learn and improve one's own knowledge and skills (PNI=0.49), 5) Systematic, organized, and targeted design of teaching activities (PNI=0.47).

Table 17 The results of Existent condition, Desired condition and PNI of Reflection and improvement

Reflection and improvement	Existent condition (n=228)			Desired condition (n=228)			PNI	Rank
	$\bar{X}$	S.D.	Level of ability	$\bar{X}$	S.D.	Level of ability		
1.Teachers should have a clear understanding of themselves	3.15	0.63	Medium	4.89	0.41	Very High	0.55	5
2.To continuously learn and consistently monitor one's own growth	2.68	0.65	Medium	4.72	0.34	Very High	0.76	1
3.Have good judgment and decision-making abilities	2.79	0.63	Medium	4.87	0.38	Very High	0.74	3
4.Identify the problem through investigation, analysis, etc	3.03	0.71	Medium	4.70	0.43	Very High	0.56	4

5.Capable of analyzing problems comprehensively from multiple perspectives	2.76	0.65	Medium	4.85	0.33	Very High	0.75	2
Total	2.88	0.65	Medium	4.81	0.38	Very High	0.67	/

Table 17 shows the mean and standard deviation of the status quo and existent condition of Reflection and improvement. The overall existent condition of Reflection and improvement was in the middle level ( $\bar{x}=2.88$ ). The existent condition scores high on: 1) Capable of analyzing problems comprehensively from multiple perspectives ( $\bar{x}=3.15$ ), 2) Identify the problem through investigation, analysis, etc ( $\bar{x}=3.03$ ), 3) Have good judgment and decision-making abilities ( $\bar{x}=2.79$ ), and low on to continuously learn and consistently monitor one's own growth ( $\bar{x}=2.68$ ). The overall desired of Reflection and improvement was at a very high level ( $\bar{x}=4.81$ ). In the desired, the highest scores were: 1) Teachers should have a clear understanding of themselves ( $\bar{x}=4.89$ ), 2) Have good judgment and decision-making abilities ( $\bar{x}=4.87$ ), 3) Capable of analyzing problems comprehensively from multiple perspectives ( $\bar{x}=4.85$ ), and the lowest scores were: Identify the problem through investigation, analysis, etc ( $\bar{x}=4.70$ ). The results of the researchers' analysis of the existent condition average and desired average of Reflection and improvement to determine the Improvement Need Index (PNI). The results show that the demands for Reflection and improvement were as follows: 1) To continuously learn and consistently monitor one's own growth

(PNI=0.76), 2) Capable of analyzing problems comprehensively from multiple perspectives (PNI=0.75), 3) Have good judgment and decision-making abilities (PNI=0.74), 4) Identify the problem through investigation, analysis, etc (PNI=0.56), 5) Teachers should have a clear understanding of themselves (PNI=0.55).

Table 18 The results of Existent condition, Desired condition and PNI of Teacher-student relationship

Teacher-student relationship	Existent condition (n=228)			Desired condition (n=228)			PNI	Rank
	$\bar{X}$	S.D.	Level of ability	$\bar{X}$	S.D.	Level of ability		
1. Being able to care about students' academic progress and development	2.63	0.67	Medium	4.81	0.21	Very High	0.83	2
2. Having the ability to make students with mental health or emotional issues feel calmer and less worried	2.71	0.58	Medium	4.79	0.32	Very High	0.77	4
3. Having the personal skills necessary for	3.32	0.59	Medium	4.85	0.32	Very High	0.46	5

successful social communication and interaction								
4. Provide students with correct guidance in academic, emotional, and other aspects	2.73	0.71	Medium	4.91	0.53	Very High	0.80	3
5. Concerned about students' behavioral development	2.65	0.65	Medium	4.93	0.36	Very High	0.86	1
Total	2.81	0.64	Medium	4.86	0.35	Very High	0.74	/

Table 18 shows the mean and standard deviation of the existent condition and desired condition of Teacher-student relationship. The overall existent condition of Teacher-student relationship was in the middle level ( $\bar{x}=2.81$ ). The existent condition scores high on: 1) Having the personal skills necessary for successful social communication and interaction ( $\bar{x}=3.32$ ), 2) Provide students with correct guidance in academic, emotional, and other aspects ( $\bar{x}=2.73$ ), 3) Having the ability to make students with mental health or emotional issues feel calmer and less worried ( $\bar{x}=2.71$ ), and low on Being able to care about students' academic progress and development ( $\bar{x}=2.63$ ). The overall desired of Teacher-student relationship was at a very high level ( $\bar{x}=4.86$ ). In the desired, the highest scores were : 1) Concerned about students' behavioral development ( $\bar{x}=4.93$ ), 2) Provide students with correct guidance in academic, emotional, and other aspects ( $\bar{x}=4.91$ ), 3) Having the personal skills

necessary for successful social communication and interaction ( $\bar{x}=4.85$ ), and the lowest scores were: Having the ability to make students with mental health or emotional issues feel calmer and less worried ( $\bar{x}=4.79$ ). The results of the researchers' analysis of the existent condition average and desired average of Teacher-student relationship to determine the Improvement Need Index (PNI). The results show that the demands for Teacher-student relationship were as follows: 1) Concerned about students' behavioral development (PNI=0.86), 2) Being able to care about students' academic progress and development (PNI=0.83), 3) Provide students with correct guidance in academic, emotional, and other aspects (PNI=0.80), 4) Having the ability to make students with mental health or emotional issues feel calmer and less worried (PNI=0.77), 5) Having the personal skills necessary for successful social communication and interaction (PNI=0.46).

This regards, researcher concerned as well through result data that shown obviously that between existence and desire state are there significant gap. It can be said that it is required to conduct program that support and enhance Double-Qualified teacher competency in local applied university.

**Phase 3:** To design and evaluate the appropriate program to improve the competence of Double-Qualified teachers in Baise University, a local application-oriented university.

**Stage 1:** The research results and the best practice schools of dual teacher competence in local applied universities.

From the research results, this study has identified key issues and basic needs around the importance ranking and existent condition of the modified Demand index (PNI modified) and the expected conditions of Double-Qualified teachers in local applied universities, ranking 1-5 from the components. These findings will be used to construct an interview-based framework for developing a program to enhance the capacity of Double-Qualified teachers in local applied universities. The development of the program will be based on interviews with 5 university administrators who exemplify best practices in their respective roles.

The results of the analysis of interview data conducted by the researchers were summarized for the development of a program to enhance the competence of Double-Qualified teachers in local applied universities.

The existent condition analysis involves conducting content analysis on interview information obtained from interviewees (i.e., school administrators and relevant department heads) from 3 universities: Baise University, Hezhou University, and Chongzuo University. The researcher has selected Specific of 5 people who have all the qualifications according to the expert criteria as follows:

- 1) Expert in educational research is a teacher in a higher education institution teachers or educational personnel with a doctoral degree in the field of research or educational measurement and evaluation
- 2) Specialist in education administration and development who is a teacher in higher education institution with a doctoral degree in education administration
- 3) Educational Administration Specialist Be an Education Administrator Educational institution administrator with a doctoral degree in educational administration Special. Experts in examining this research Instrument include:

- 1) Prof. Dr. Liu Fang, Vice President, Baise University, Guangxi, China

2) Prof. Dr. Jiang Hongxing, Vice President, Hezhou University, Guangxi, China

3) Prof. Dr. Zhou Dingbo, Vice President, Science and technology Normal University, Guangxi, China

4) Asst. Prof. Dr. Wen Fengping, Dean of the College, Civil Engineering and Architecture, Baise University, Guangxi, China

5) Asst. Prof. Dr. Yang Wengui, Dean of the College, Faculty of teacher education, Baise University, Guangxi, China

Through interviews with the president of 3 universities and the leaders of relevant departments, this study gathered information regarding the management of Double-Qualified teachers in local applied universities. Utilizing a structured interview format, the researchers synthesized guidelines for managing Double-Qualified teachers in local applied universities based on interviews conducted at the Teacher Development Centre.

### **1. Proper ethics**

The researchers interviewed school principals and leaders of relevant departments and summarized the Double-Qualified teachers in terms of Proper ethics as follows:

Expert 1:

"...In Double-Qualified teacher education, integrity and honesty are of paramount importance. Educators should lead students by example, establishing trust through genuine behavior and open communication. Integrity is the cornerstone for fostering student growth and cultivating a strong character and that team collaboration is one of the core competencies for Double-Qualified teacher educators. Through effective cooperation, we can create an environment of mutual growth, providing



more comprehensive support for students. In a team, each member should leverage their strengths, working together towards the school's mission..."

(Expert 1, 10 January 2024: Interview)

Expert 2:

"...Protecting the privacy of students and colleagues is our responsibility. In the digital age, particular attention needs to be given to information security and privacy protection. Respecting the privacy of others is crucial for building strong relationships and fostering an academic community. I also believe that supervision and self-supervision serve as a bridge for the professional development of dual-teacher educators. Through mutual supervision, we can learn from the experiences of others, and through self-supervision, we can continuously refine our teaching methods to ensure students receive a better education..."

(Expert 2, 10 January, 2024: Interview)

Expert 3:

"...Adhering to the law is the responsibility of every education professional. In Double-Qualified teacher education, we must ensure that our teaching activities are legal and compliant to uphold the school's reputation and protect the rights of students. Only under the guidance of regulations can we provide a safe and healthy learning environment for students. Furthermore, I believe that integrity and honesty are prerequisites for compliance with the law. We need to demonstrate our integrity through genuine behavior and open communication to establish trust among students and colleagues. It is only with a foundation of integrity that we can ensure adherence to the law..."

(Expert 3, 10 January, 2024: Interview)

Expert 4:

"...Team collaboration is crucial in Double-Qualified teacher education. Within the team, each member should understand their roles and responsibilities, collaborating closely to achieve common goals. Through effective teamwork, we can provide students with more comprehensive and coordinated support. Additionally, I believe that supervision and self-supervision serve as driving forces for continuous development. Through supervision, we can identify and address issues, and through self-supervision, we can continually enhance our own capabilities. This is particularly vital for dual-teacher educators, as we need to constantly adapt and improve to meet the evolving needs of our students..."

(Expert 4, 12 January, 2024: Interview)

Expert 5:

"...In the digital age, privacy and respect become especially crucial. We need to approach personal information of students and colleagues with utmost diligence, ensuring its security. Respecting the privacy of others forms the foundation for building healthy teacher-student relationships and is key to creating a positive learning environment. Additionally, I believe that abiding by the law is our responsibility and a commitment to our students. We must ensure that our teaching activities comply with regulations to uphold the school's reputation and safeguard the rights of students. Only on the foundation of legality can we establish a lawful and just learning community..."

(Expert 5, 12 January, 2024: Interview)

According to the interview with the dual teacher management staff of Baise University, the following development guidelines are obtained: 1) Teachers need to have the qualities of integrity and honesty, 2) Teachers should respect others' privacy 3) In any circumstance, it is necessary to abide by the law, 4) Teachers should have good teamwork skills, 5) Teachers should learn self-monitoring and also supervise

others. These guidelines are designed to promote effective strategies that can improve the ethics of Double-Qualified teachers.

## 2. Practical ability

The researchers interviewed school principals and leaders of relevant departments and summarized the Double-Qualified teachers in terms of practical ability as follows:

Expert 1:

"...In Double-Qualified teacher education, technical skills are of utmost importance. Educators should possess the ability to operate and integrate educational technology effectively for the efficient delivery of knowledge. This not only involves mastering basic teaching software but also adapting to the ever-evolving technological tools to enhance the students' learning experience. Additionally, problem-solving is considered an indispensable skill for educators. Double-Qualified teacher educators need to swiftly and accurately address various challenges in students' learning, while seeking innovative approaches to resolve issues in teaching. This necessitates educators to cultivate flexible and adaptive problems-solving skills through practical experiences..."

(Expert 1, 10 January, 2024: Interview)

Expert 2:

"...Having hands-on experience is crucial for shaping the practical abilities of Double-Qualified teacher educators. Through direct participation in teaching activities, educators can better understand student needs, grasp effective teaching methods, and face various situations with greater confidence. Additionally, proficiency in the use of teaching tools and equipment is an integral aspect of practical ability. Double-Qualified teacher educators need to be familiar with and adept at flexibly employing

various educational technologies and teaching tools, ensuring a smoother and more efficient teaching process..."

(Expert 2, 10 January, 2024: Interview)

Expert 3:

"...Continuously gathering and applying feedback is an indispensable practical skill for Double-Qualified teacher educators. By meticulously analyzing feedback from students and colleagues, educators can promptly adjust teaching strategies and enhance their teaching effectiveness. This necessitates a continuous self-reflective and improvement mindset. Additionally, I believe that technical skills encompass not only tool usage but also the ability to adapt to new technologies. Double-Qualified teacher educators need to maintain an updated technological perspective to stay abreast of technological advancements and seamlessly integrate cutting-edge technologies into their teaching..."

(Expert 3, 10 January, 2024: Interview)

Expert 4:

"...Solving problems is at the core of practical abilities. Double-Qualified teacher educators need to cultivate the ability to analyze problems and find optimal solutions, particularly in the digital age where facing various teaching challenges becomes even more crucial. Additionally, I believe that hands-on experience extends beyond teaching and includes participation in educational projects and collaboration with peers. Through these experiences, Double-Qualified teacher educators can gain a more comprehensive understanding of students and the teaching environment, enabling them to better apply theoretical knowledge into practice..."

(Expert 4, 12 January, 2024: Interview)

Expert 5:

"...The proficient use of tools and equipment forms the foundation of practical abilities for Double-Qualified teacher educators. Educators need to continually learn and adapt to new teaching tools, ensuring that they can fully leverage the potential of these tools to enhance teaching effectiveness. Additionally, I believe that feedback mechanisms are crucial for the improvement of practical abilities. Double-Qualified teacher educators need to actively seek and accept feedback from students, colleagues, and self-reflection, in order to continuously refine their teaching methods and outcomes. This is an ongoing process of growth and adaptation..."

(Expert 5, 12 January, 2024: Interview)

According to the interview with the dual teacher management staff of Baise University, the following development guidelines are obtained: 1) Teachers should have more professional technical skills, 2) Teachers should have problem-solving abilities, 3) Teachers should have knowledge or skills acquired through practical experience, 4) Teachers should be proficient in using tools and equipment, 5) Continuously improve through teaching feedback. These guidelines are designed to promote effective strategies that can improve the practical ability of Double-Qualified teachers.

### **3. Teaching ability**

The researchers interviewed school principals and leaders of relevant departments and summarized the Double-Qualified teachers in terms of teaching ability as follows:

Expert 1:

"...In Double-Qualified teacher education, teaching design is the key to successful teaching. Teachers should carefully plan instructional activities to ensure they can inspire student interest and promote deep learning. An engaging and challenging instructional design contributes to fostering students' autonomy in learning. Additionally, I believe that pedagogical knowledge is the cornerstone for Double-Qualified teacher educators. Profound pedagogical knowledge enables educators to better understand students' learning needs and have the ability to design teaching methods that align with the characteristics of the subject and the students' proficiency levels..."

(Expert 1, 10 January, 2024: Interview)

Expert 2:

"...Effective communication skills are crucial for building positive teacher-student relationships. In the Double-Qualified teacher instructional environment, teachers need to excel in communicating with both students and collaborating teachers to foster the establishment of a conducive learning atmosphere. This includes clearly articulating teaching objectives and promptly addressing student inquiries. Additionally, I believe that classroom management is key to ensuring teaching order and student engagement. Double-Qualified teacher educators should formulate effective strategies for classroom management, ensuring a well-organized teaching process and enabling students to concentrate on their learning..."

(Expert 2, 10 January, 2024: Interview)

Expert 3:

"...The continuous evolution in the field of education demands that teachers keep abreast of new knowledge and teaching methodologies. Double-Qualified teacher educators need to consistently update their knowledge base to adapt to the ever-changing needs of students and the educational environment. Continuous learning is

also a crucial pathway for enhancing teaching capabilities. Additionally, I believe that carefully designing instructional activities can stimulate students' interest in learning, encouraging them to actively participate. In Double-Qualified teacher education, teachers should focus on designing instructional content that sparks curiosity and creativity in students, thereby enhancing teaching effectiveness..."

(Expert 3, 10 January, 2024: Interview)

Expert 4:

"...Profound educational knowledge is the key to ensuring effective teaching. Double-Qualified teacher educators need to be familiar with the latest educational theories and practices to better guide students' learning. The application of theoretical knowledge must be coupled with practical teaching experience to provide teaching with both depth and breadth. Additionally, I believe that in the Double-Qualified teacher instructional environment, clear and effective communication forms the foundation for successful teaching. Teachers should be adept at communicating effectively with collaborating teachers from different backgrounds and disciplinary fields to ensure consistency in teaching objectives and the comprehensive development of students...."

(Expert 4, 12 January, 2024: Interview)

Expert 5:

"...Classroom management directly impacts students' learning experiences. In dual-teacher education, teachers need to formulate flexible yet effective management strategies to meet the needs of different subjects and student groups. An organized classroom environment contributes to increased student engagement and improved learning outcomes. Additionally, I believe that continuous learning is an indispensable quality for Double-Qualified teacher educators. By continually acquiring new teaching



methods and skills, educators can better adapt to changes in the education field, providing students with richer and more innovative learning experiences..."

(Expert 5, 12 January, 2024: Interview)

According to the interview with the dual teacher management staff of Baise University, the following development guidelines are obtained: 1) Systematic, organized, and targeted design of teaching activities, 2) Have a rich reserve of teaching knowledge, 3) Having good abilities and skills in communication and interaction, 4) Teachers should create a positive learning environment and maintain good classroom discipline, 5) Continuously learn and improve one's own knowledge and skills. These guidelines are designed to promote effective strategies that can improve the teaching ability of Double-Qualified teachers.

#### **4. Reflection and improvement**

The researchers interviewed school principals and leaders of relevant departments and summarized the Double-Qualified teachers in terms of reflection and improvement as follows:

Expert 1:

"...In Double-Qualified teacher education, establishing a strong sense of self-awareness is indispensable. Teachers need to delve into their teaching styles, strengths, and weaknesses to effectively guide students. Through continuous self-reflection, teachers can better understand their values and goals, thereby enhancing their teaching effectiveness. Additionally, I believe that continuous learning and growth are responsibilities for Double-Qualified teacher educators. By engaging with new teaching philosophies and methods, teachers can broaden their perspectives and

better adapt to students' needs. Learning and growth constitute a cyclical process that enables educators to elevate their teaching standards amid ongoing development..."

(Expert 1, 10 January, 2024: Interview)

Expert 2:

"...Double-Qualified teacher educators need to possess strong decision-making skills. When facing various teaching challenges, teachers must be able to make prompt and wise decisions to ensure students' learning remains unaffected. The decision-making process should be based on profound educational knowledge and effective problem analysis. Additionally, I believe that finding problems is the first step in reflection and improvement. Teachers need to actively identify potential issues in the classroom, whether related to teaching methods or student comprehension. By promptly identifying problems, teachers can make targeted improvements..."

(Expert 2, 10 January, 2024: Interview)

Expert 3:

"...Learning and growth are constants in the career of Double-Qualified teacher educators. In a rapidly changing educational environment, teachers need to continually update their knowledge and skills. Through continuous learning, teachers can better adapt to students' needs and provide more innovative teaching experiences. Additionally, I believe that decision-making is an inevitable part of the teaching process. Double-Qualified teacher educators must make wise decisions quickly to ensure the coherence and effectiveness of teaching. This requires teachers to cultivate sensitivity to issues and the ability to make rapid judgments in their daily practices..."

(Expert 3, 10 January, 2024: Interview)

Expert 4:

"...Summary analysis is a crucial component of reflection. In Double-Qualified teacher education, teachers should engage in regular summary analysis, reviewing past teaching experiences. Through systematically collecting and analyzing data, teachers can gain a better understanding of students' responses and learning outcomes, enabling targeted improvements. Simultaneously, establishing profound self-awareness is paramount for enhancing teaching effectiveness. Understanding one's educational beliefs and values, along with how they influence teaching decisions, can empower teachers to navigate various situations with greater confidence..."

(Expert 4, 12 January, 2024: Interview)

Expert 5:

"...In teaching, timely issue identification is crucial for enhancing teaching effectiveness. Double-Qualified teacher educators need to maintain sensitivity to classroom dynamics, proactively identify potential issues, and take swift measures to address them. By identifying issues, teachers can better guide students and improve the overall learning experience. Simultaneously, regular summary analysis is an indispensable task for Double-Qualified teacher educators. By reviewing past teaching activities, teachers can identify successful practices and areas for improvement, contributing to ongoing professional development..."

(Expert 5, 12 January, 2024: Interview)

According to the interview with the dual teacher management staff of Baise University, the following development guidelines are obtained: 1) Teachers should have a clear understanding of themselves, 2) To continuously learn and consistently monitor one's own growth, 3) Have good judgment and decision-making abilities, 4) Identify the problem through investigation, analysis, etc, 5) Capable of analyzing

problems comprehensively from multiple perspectives. These guidelines are designed to promote effective strategies that can improve the reflection and improvement of Double-Qualified teachers.

### **5. Teacher-student relationship**

The researchers interviewed school principals and leaders of relevant departments and summarized the Double-Qualified teachers in terms of teacher-student relationship as follows:

Expert 1:

"...In the Double-Qualified teacher model, academic growth is of paramount importance. Not only do they need to possess professional knowledge, but they should also be adept at inspiring students' academic interests. Through collaboration with subject-matter experts, they can offer a more in-depth understanding of academic subjects, fostering greater progress in students' academic pursuits. Simultaneously, emotional support is considered the cornerstone of the teacher-student relationship. Double-Qualified teacher educators must not only focus on students' academic performance but also attend to their emotional needs. By partnering with emotional counseling experts, they can better comprehend students' emotional states, provide personalized support, and create a learning environment that is more nurturing and inspiring..."

(Expert 1, 10 January, 2024: Interview)

Expert 2:

"...Social skills are crucial for students in their future careers. The role of Double-Qualified teacher educators extends beyond imparting knowledge; it includes cultivating students' social skills. Collaborating with social skills experts can provide students with a broader range of social experiences, helping them integrate more

effectively into society. The mentorship system is paramount for students' development. Double-Qualified teacher educators serve not only as subject mentors but also collaborate with academic guidance experts, offering more comprehensive guidance. This aids students in better planning their academic and career paths, ensuring a more directed developmental trajectory..."

(Expert 2, 10 January, 2024: Interview)

Expert 3:

"...Shaping student behavior requires a comprehensive approach. Through collaboration with behavioral psychology experts, Double-Qualified teacher educators can better understand the underlying reasons for students' behavior and employ appropriate methods to guide and cultivate positive behavioral habits. Subject-matter experts play a crucial role in the Double-Qualified teacher model. They delve into subject knowledge and, through close collaboration with education management experts, are better equipped to impart specialized knowledge to students, thereby enhancing academic proficiency..."

(Expert 3, 10 January, 2024: Interview)

Expert 4:

"...Emotional support is not solely the responsibility of psychological experts; subject-matter experts should also be attentive to students' emotional needs. By integrating emotional elements into subject content, subject-matter experts can create a warmer academic environment and inspire students' interest in the subject. Subject-matter experts can emphasize collaboration and discussion in the classroom, fostering students' social skills. By highlighting teamwork and communication in subject learning, subject-matter experts can provide students with more social opportunities, promoting the development of social skills..."

(Expert 4, 12 January, 2024: Interview)

Expert 5:

"...As Double-Qualified teacher educators, they should have a profound understanding of the direction of subject development. Collaborating with academic guidance experts enables them to provide students with better guidance on subject development and future career directions, helping students plan their academic careers more clearly. Double-Qualified teacher educators should possess the ability to guide students in solving subject-related challenges and, at the same time, influence students' behavioral development. By encouraging active participation in subject activities, they can encourage students to develop positive academic behavior patterns..."

(Expert 5, 12 January, 2024: Interview)

According to the interview with the dual teacher management staff of Baise University, the following development guidelines are obtained: 1) Being able to care about students' academic progress and development, 2) Having the ability to make students with mental health or emotional issues feel calmer and less worried, 3) Having the personal skills necessary for successful social communication and interaction, 4) Provide students with correct guidance in academic, emotional, and other aspects, 5) Concerned about students' behavioral development. These guidelines are designed to promote effective strategies that can improve the teacher-student relationship of Double-Qualified teachers.

Through interviews with school principals and heads of relevant departments, the researchers conducted a comprehensive survey on the competence factors of Double-Qualified teachers. The aim is to develop guidelines for the development of a program to enhance the capacity of Double-Qualified teachers in local applied universities. Table 19-23 lists the test results.

Table 19 Analysis results of improving ethic of Double-Qualified teachers in local applied universities

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
Indicator 1: Integrity and honesty	Indicator 1: Integrity and honesty	1.Self-directed learning	1.Self-directed learning	<b>Step 1: Prepare the preparations before the development</b>  Step 1 Prepare the preparation before development  1.Explain the understanding of improving the ethics of dual-teacher in the management of dual-teacher in local applied universities (2 credit hours)  2. Learning and Development Activities
1.Be honest and reliable	1.Be honest and reliable	2.Training	2.Training	
2.Treat students with courtesy	2.Treat students with courtesy	3.Learning from case studies	3.Learning from case studies	
3.Don't cheat others	3.Don't cheat others	4.Brainstorming	4.Brainstorming	
Indicator 2: Privacy and respect	Indicator 2: Privacy and respect	5.Learning from practical work experience	5.Learning from practical work experience	
1.Keep a secret	1.Keep a secret	6.Teaching tasks	6.Teaching tasks	
2.Don't spread rumors about others	2.Don't spread rumors about others			



Table 19 (continued)

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
3.Don't broadcast other people's business online	3.Don't broadcast other people's business online			Kit (Kit Activities)(18 hours)
Indicator 3: Abide by the law	Indicator 3: Abide by the law			Step 2: 2.1 Training
1.Not against the law	1.Not against the law			1. Lecturers' speech (60 minutes)
2.Teach students to obey the law	2.Teach students to obey the law			2. Group work activities
3.Set an example for the students	3.Set an example for the students			/Brainstorm (30 minutes)
Indicator 4: Good team work ability	Indicator 4: Good team work ability			3. Conduct worksheet activities (20 minutes)

1.Respect partners	1.Respect partners		4. Team presentation (10 minutes)
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Table 19 (continued)

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
2.Ability to communicate with partners	2.Ability to communicate with partners			2.2 Learn from practical work (42 hours)
3.Good cooperation spirit	3.Good cooperation spirit			2.3 Group work activities (12 hours)
Indicator 5: Supervision and self-supervision	Indicator 5: Supervision and self-supervision			Step 3: Track post-developmental
1.Be able to supervise oneself	1.Be able to supervise oneself			
2.Able to supervise others	2.Able to supervise others			

3.Focus on student development	3.Focus on student development			
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From the analysis results of Table 19, regarding the development of Double-Qualified teachers' ability in local applied universities, the following points can be found in terms of ethics: 1) Teachers need to have the qualities of integrity and honesty, 2) Teachers should respect others' privacy, 3) In any circumstance, it is necessary to abide by the law, 4) Teachers should have good teamwork skills, 5) Teachers should learn self-monitoring and also supervise others. Based on these findings, the ethic of Double-Qualified teachers should include the following aspects: 1) Self-directed learning, 2) Training, 3) Learning from case studies, 4) Brainstorming, 5) Learning from practical work experience, 6) Teaching tasks.

Table 20 Analysis results of improving Practical ability of Double-Qualified teachers in local applied universities

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
Indicator 1: Technical Skills	Indicator 1: Technical Skills	1.Self-directed learning	1.Self-directed learning	<b>Step 1. Prepare the preparations before the development</b>

1.He has made some achievements in the field of research	1.He has made some achievements in the field of research	2.Training	2.Training	Step 1 Prepare the preparation before development
2.Have practical ability	2.Have practical ability	3.Learning from case studies	3.Learning from case studies	1.Explain the understanding of
3.Keep up with the latest information	3.Keep up with the latest information	4.Brainstorming	4.Brainstorming	improving the ethics of dual-teacher
Indicator 2: Problem-Solving	Indicator 2: Problem-Solving	5.Learning from practical work experience	5.Learning from practical work experience	in the management of dual-teacher in local applied

Table 20 (continued)

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
Indicator 4: Tool and Equipment Proficiency	Indicator 4: Tool and Equipment Proficiency			3. Conduct worksheet activities (20 minutes)
1.Proficiency in multimedia	1.Proficiency in multimedia			4. Team presentation

2.Look up information on the Internet	2.Look up information on the Internet		2.2 Learn from practical work (42 hours)
3.Use advanced teaching tools	3.Use advanced teaching tools		2.3 Group work activities (12 hours)
Indicator 5: Feedback and Improvement	Indicator 5: Feedback and Improvement		Step 3: Track post-developmental
1.Reflection in teaching engineering	1.Reflection in teaching engineering		
2.Reflect on the process of practice	2.Reflect on the process of practice		
3.Carry out improvement activities	3.Carry out improvement activities		

From the analysis results of Table 20, regarding the development of Double-Qualified teachers' ability in local applied universities, the following points can be found in terms of Practical ability: 1) Teachers should have more professional technical skills, 2) Teachers should have problem-solving abilities, 3) Teachers should have knowledge or skills acquired through practical experience, 4) Teachers should be proficient in using tools and equipment, 5) Continuously improve through teaching feedback. Based on these findings, the Practical ability of Double-Qualified teachers should include the following aspects: 1) Self-directed learning, 2) Training, 3) Learning

from case studies, 4) Brainstorming, 5) Learning from practical work experience, 6) Teaching tasks.

Table 21 Analysis results of improving Teaching ability of Double-Qualified teachers in local applied universities

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
Indicator 1: Teaching design	Indicator 1: Teaching design	1.Self-directed learning	1.Self-directed learning	<b>Step 1: Prepare the preparations before the development</b>
1.Teaching purpose	1.Teaching purpose	2.Training	2.Training	Step 1 Prepare the preparation before development
2.Teaching method	2.Teaching method	3.Learning from case studies	3.Learning from case studies	1.Explain the understanding of improving the
3.Teaching mode	3.Teaching mode	4.Brainstormin g	4.Brainstormin g	ethics of dual- teacher

Table 21 (continued)

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	

Indicator 2: Pedagogical Knowledge	Indicator 2: Pedagogical Knowledge	5.Learning from practical work experience	5.Learning from practical work experience	in the management of dual-teacher in local applied universities (2 credit hours)
1.Knowledge reserve	1.Knowledge reserve	6.Teaching tasks	6.Teaching tasks	2. Learning and Development Activities Kit (18 hours)
2.Teaching method	2.Teaching method			
3.Extracurricular knowledge learning	3.Extracurricular knowledge learning			
Indicator 3: Communication Skills	Indicator 3: Communication Skills			Step 2: 2.1 Training 1. Lecturers' speech (60 minutes)
1.comprehend	1.comprehend			2. Group work activities /Brainstorm (30 minutes)
2.Smooth communication	2.Smooth communication			
3.Pay attention to emotions	3.Pay attention to emotions			
Indicator 4: Classroom Management	Indicator 4: Classroom Management			3. Conduct worksheet activities



Table 21 (continued)

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
1.Classroom order	1.Classroom order			4. Team presentation (10 minutes)
2.Lecture rhythm	2.Lecture rhythm			2.2 Learn from practical work (42 hours)
3.Student participation enthusiasm	3.Student participation enthusiasm			2.3 Group work activities (12 hours)
Indicator 5: Continuous Learning	Indicator 5: Continuous Learning			Step 3: Track post- developmental
1.Learn something new	1.Learn something new			
2.Learn new teaching methods	2.Learn new teaching methods			
3.Learn new teaching tools	3.Learn new teaching tools			

From the analysis results of Table 21, regarding the development of Double-Qualified teachers' ability in local applied universities, the following points can be found in terms of Teaching ability: 1) Systematic, organized, and targeted design of teaching activities, 2) Have a rich reserve of teaching knowledge, 3) Having good abilities and skills in communication and interaction, 4) Teachers should create a positive learning environment and maintain good classroom discipline, 5) Continuously learn and improve one's own knowledge and skills. Based on these findings, the Teaching ability of Double-Qualified teachers should include the following aspects: 1) Self-directed learning, 2) Training, 3) Learning from case studies, 4) Brainstorming, 5) Learning from practical work experience, 6) Teaching tasks.

Table 22 Analysis results of improving Reflection and improvement of Double-Qualified teachers in local applied universities

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
Indicator 1: Self-knowledge	Indicator 1: Self-knowledge	1. Self-directed learning	1. Self-directed learning	<b>Step 1: Prepare the preparations before the development</b>
1. Know your character	1. Know your character	2. Training	2. Training	Step 1 Prepare the preparation before development
2. Know your knowledge accumulation	2. Know your knowledge accumulation	3. Learning from case studies	3. Learning from case studies	1. Explain the understanding of improving
3. Know your strengths and weaknesses	3. Know your strengths and weaknesses	4. Brainstorming	4. Brainstorming	the ethics of dual-teacher

Table 22 (continued)

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
Indicator 2: Learning and growth  1.Pay attention to students' physical and mental health  2.Focus on students' academic development  3.Progress with students	Indicator 2: Learning and growth  1.Pay attention to students' physical and mental health  2.Focus on students' academic development  3.Progress with students	5.Learning from practical work experience  6.Teaching tasks	5.Learning from practical work experience  6.Teaching tasks	in the management of dual-teacher in local applied universities (2 credit hours)  2. Learning and Development Activities  Kit (18 hours)
Indicator 3: Decision making  1.Design teaching scheme  2.Make decisions about what is right	Indicator 3: Decision making  1.Design teaching scheme  2.Make decisions about what is right			Step 2: 2.1 Training  1. Lecturers' speech (60 minutes)  2. Group work activities/ Brainstorm

Table 22 (continued)

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
3.Able to lead a team	3.Able to lead a team			(30 minutes) 3. Conduct
Indicator 4: Find the problem	Indicator 4: Find the problem			worksheet activities (20 minutes)
1.Find teaching problems	1.Find teaching problems			4. Team presentation (10 minutes)
2.Find missing parts of knowledge	2.Find missing parts of knowledge			2.2 Learn from practical work (42 hours)
3.Identify students' learning problems	3.Identify students' learning problems			2.3 Group work activities (12 hours)
Indicator 5: Summary analysis	Indicator 5: Summary analysis			Step 3: Track post-developmental
1.Make plans according to the	1.Make plans according to the			

actual situation of students	actual situation of students			
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Table 22 (continued)

Existent condition  Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
2.Have  comprehensive analysis ability	2.Have  comprehensive analysis ability			
3.Combine  theory wicth practice	3.Combine  theory with practice			

From the analysis results of Table 22, regarding the development of Double-Qualified teachers' ability in local applied universities, the following points can be found in terms of Reflection and improvement: 1) Teachers should have a clear understanding of themselves, 2) To continuously learn and consistently monitor one's own growth, 3) Have good judgment and decision-making abilities, 4) Identify the problem through investigation, analysis, etc, 5) Capable of analyzing problems comprehensively from multiple perspectives. Based on these findings, the Reflection and improvement of Double-Qualified teachers should include the following aspects: 1) Self-directed learning, 2) Training, 3) Learning from case studies, 4) Brainstorming, 5) Learning from practical work experience, 6) Teaching tasks.

Table 23 Analysis results of improving Teacher-student relationship of Double-Qualified teachers in local applied universities

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
Indicator 1: Academic Growth	Indicator 1: Academic Growth	1.Self-directed learning	1.Self-directed learning	<b>Step 1: Prepare the preparations before the development</b>
1.The improvement of students' knowledge	1.The improvement of students' knowledge	2.Training	2.Training	Step 1 Prepare the preparation before development
2.The improvement of students' skills	2.The improvement of students' skills	3.Learning from case studies	3.Learning from case studies	1.Explain the understanding of
3.The improvement of students' thinking ability	3.The improvement of students' thinking ability	4.Brainstorming	4.Brainstorming	improving the ethics of dual-teacher
Indicator 2: Emotional Support	Indicator 2: Emotional Support	5.Learning from practical work experience	5.Learning from practical work experience	in the management of dual-teacher in local applied
1.Pay attention to students' mental health	1.Pay attention to students' mental health	6.Teaching tasks	6.Teaching tasks	universities (2 credit hours)

Table 23 (continued)

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
2.Learn to listen	2.Learn to listen			2. Learning and Development Activities Kit (Kit Activities)(18 hours) Step 2: 2.1 Train ing 1. Lecturers' speech (60 minutes) 2. Group work activities / Brainstorm (30 minutes) 3. Conduct worksheet activities (20 minutes) 4. Team presentation (10 minutes)
3.Communicate with students often	3.Communicate with students often			
Indicator 3: Social Skills	Indicator 3: Social Skills			
1.Able to communicate clearly	1.Able to communicate clearly			
2.Interaction	2.Interaction			
3.Expressive ability	3.Expressive ability			
Indicator 4: Guidance	Indicator 4: Guidance			
1.Guide students to learn	1.Guide students to learn			



2. Guide students to think	2. Guide students to think		2.2 Learn from practical work (42 hours)
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Table 23 (continued)

Existent condition Desired condition	Research Result (Best Practice)	Develop Method		Draft Program
		Existent condition Desired condition	(Best Practice)	
3. Guide students to practice	3. Guide students to practice			2.3 Group work activities (12 hours)
Indicator 5: Behavioral Development  1. Focus on student learning methods  2. Understand students' study habits  3. Understand student behavior	Indicator 5: Behavioral Development  1. Focus on student learning methods  2. Understand students' study habits  3. Understand student behavior			Step 3: Track post-developmental

From the analysis results of Table 23, regarding the development of Double-Qualified teachers' ability in local applied universities, the following points can be found in terms of Teacher-student relationship: 1) Being able to care about students'

academic progress and development, 2) Having the ability to make students with mental health or emotional issues feel calmer and less worried, 3) Having the personal skills necessary for successful social communication and interaction, 4) Provide students with correct guidance in academic, emotional, and other aspects, 5) Concerned about students' behavioral development. Based on these findings, the Teacher-student relationship of Double-Qualified teachers should include the following aspects: 1) Self-directed learning, 2) Training, 3) Learning from case studies, 4) Brainstorming, 5) Learning from practical work experience, 6) Teaching tasks.

In conclusion, the results of interviews with school administrators show that the methods to improve the ability of Double-Qualified teachers in local applied universities include : 1) Self-directed learning, 2) Training, 3) Learning from case studies, 4) Brainstorming, 5) Learning from practical work experience, 6) Teaching tasks.

5 experts verified the applicability of the Double-Qualified teachers' ability enhancement method, using the evaluation table of Double-Qualified teachers' ability enhancement method compiled in this study. The data analysis results are shown in Table 24.

Table 24 Results of analyzing, validating, and confirming the appropriateness of methods to enhance the competence of Double-Qualified teachers in local applied universities

The program to enhancing the proficiency of dual teachers in regional applied universities.	Suitability		
	$\bar{X}$	S.D.	Level of ability
Step 1: Preparation before development			
1. Self-directed learning	4.73	0.35	Very High

### Step 2: Intensive Program Development Process

1. Training	4.69	0.32	Very High
2. Learning from Real Work Practices	4.85	0.41	Very High
3. Group Discussion	4.67	0.39	Very High

### Step 3: Monitoring and Reflecting on Development Results

1. Reflecting on Development Results	4.86	0.45	Very High
Total	4.76	0.38	Very High

From Table 24, the experts' examination and confirmation of the applicability of the methods to improve the ability of Dual-Qualified teachers in local applied universities shows that all the methods have the highest applicability. The experts provided additional advice, suggesting that each method should have complementary activities such as self-study, brainstorming, coaching, mentoring, and group discussions.

**Stage 2** Formulate a program to enhance the competencies of Dual-Qualified teachers in local applied universities.

The researchers used the results of the Phase 2 Priority Demand Index analysis as data for drafting a plan to improve the capacity of Dual-Qualified teachers in local applied universities. The research finds that the priority demands for improving the competence of Dual-Qualified teacher are as follows:

1. Proper ethics (PNI=0.80). It comprises 5 indicators, including the Integrity and honesty, Supervision and self-supervision, Abide by the law, Privacy and respect, and good team work ability.

2. Practical ability (PNI=0.76). It comprises 5 indicators, including the Tool and Equipment Proficiency, Technical Skills, Hands-on Experience, Problem-Solving, and Supervision and self-supervision.

3. Teacher-student relationship (PNI=0.73). It comprises 5 indicators, including the Communication Skills, Pedagogical Knowledge, Classroom Management, Continuous Learning, and Teaching design.

4. Reflection and improvement (PNI=0.67). It comprises 5 indicators, including the Learning and growth, Summary analysis, Decision making, Find the problem, and Self-knowledge.

5. Teaching ability (PNI=0.65). It comprises 5 indicators, including the Behavioral Development, Academic Growth, Guidance, Emotional Support, and Social Skills.

From the research results, this study identifies key issues and basic needs around the importance ranking of the modified Needs Index (PNI modified), the existent condition situation, and the expected conditions of Dual-Qualified teachers in local applied universities. These issues are ranked 1-5 from the components. These findings will be used to construct an interview-based framework for developing a project aimed at enhancing the abilities of Dual-Qualified teachers in local applied universities. The development of this project will be based on interviews with 5 university administrators who exemplify best practices in their respective roles.

The existent condition analysis involves conducting content analysis on interview information obtained from interviewees. The researcher has selected Specific of 5 people who have all the qualifications according to the expert criteria as follows:

1) Expert in educational research is a teacher in a higher education institution teachers or educational personnel with a doctoral degree in the field of research or educational measurement and evaluation

2) Specialist in education administration and development who is a teacher in higher education institution with a doctoral degree in education administration

3) Educational Administration Specialist Be an Education Administrator Educational institution administrator with a doctoral degree in educational administration Special. Experts in examining this research Instrument include: Experts in assessing the suitability, accuracy and feasibility of the program as follows:

1) Prof. Dr. Liu Fang, Vice President, Guangxi Baise University, China

2) Prof. Dr. Cao Alin, Director of Teaching Management, Baise University, Guangxi, China

3) Asst. Prof. Dr. Wang Fang, Director, Faculty Development Center, Baise University, Guangxi, China

4) Asst. Prof. Dr. Wen Fengping, Dean of the College, Civil Engineering and Architecture, Baise University, Guangxi, China

5) Asst. Prof. Dr. Yang Wengui, Dean of the College, Faculty of teacher education, Baise University, Guangxi, China

The results of the data analysis from the interviews conducted by the researchers are summarized to be used in developing a program to enhance the abilities of Dual-Qualified teachers in local applied universities.

### **1. The components of the program**

Through the study of various documents and literature, researchers analyzed the components of a plan to enhance the abilities of Dual-Qualified teachers in local

applied universities. The plan consists of five parts, as follows: 1) Principles, 2) Objectives, 3) Content, 4) Development Process, 5) Evaluation. The opinions of the 5 university administrators regarding these components were unanimous, and are summarized as follows:

"...The program to cultivate the abilities of Dual-Qualified teachers should have clear components. If the development plan is explicit, it will serve as a guide for administrators to steer in the right direction. The researched components are considered clear and comprehensive..."

(Expert 1, 20 January, 2024: Interview)

"...The principle in development is something that emphasizes the importance of development. The development objective is crucial, and the development process should be appropriate and diverse. After development, it is essential to have a proper evaluation..."

(Expert 2, 20 January, 2024: Interview)

"...Agree with the program components that include principles, objectives, content, development process, and evaluation. This ensures completeness in all aspects..."

(Expert 3, 20 January, 2024: Interview)

"...The program, objectives, content, development process, and evaluation of this plan are very comprehensive. I believe this program can bring about improvement..."

(Expert 4, 21 January, 2024: Interview)

"...This is a well-defined plan with reasonable content design. I agree with the project's design and support its development..."

(Expert 5, 21 January, 2024: Interview)

## **2. Principle to enhance competency of Dual-Qualified teachers**

Based on discussions with 5 university administrators regarding key issues in enhancing the capabilities of Dual-Qualified teacher instructors, the administrators agreed to adopt the 70:20:10 learning model to enhance the abilities of local applied university dual-teacher instructors. The following excerpt illustrates this point:

"...Learning from direct experience holds the utmost importance because merely receiving lectures or training alone may provide knowledge but does not necessarily translate into its application or practice..."

(Expert 1, 20 January, 2024: Interview)

"...The curriculum used to develop the competence of dual-qualified teachers should emphasize practical training and practical experience, including different backgrounds and guidance and practical application of guidance..."

(Expert 2, 20 January, 2024: Interview)

"...The advantages of the 70:20:10 theory lie in its emphasis on practical experience, interaction, and personalized learning, which can more effectively promote the development of individuals and organizations..."

(Expert 3, 20 January, 2024: Interview)

"...Applying the 70:20:10 theory can help teachers better understand the learning process, emphasizing practical experience, interaction, and personalized learning, thereby enabling them to pay more attention to students' actual experiences and needs..."

(Expert 4, 21 January, 2024: Interview)



"...Adopting this theory also helps teachers to flexibly employ various teaching methods and resources during the teaching process, better meeting students' learning needs, thereby providing more comprehensive and effective support for education..."

(Expert 5, 21 January, 2024: Interview)

### **3. Methods to enhance competency of Dual-Qualified teachers**

Education administrators and researchers discussed methods to enhance the capabilities of Dual-Qualified teacher instructors, and the consensus was to utilize various approaches to improve the abilities of Dual-Qualified teacher instructors. The methods identified are : 1) Self-directed learning, 2) Training, 3) Learning from case studies, 4) Brainstorming, 5) Learning from practical work experience, 6) Teaching tasks.

"...The development methods should be clearly defined and appropriate for the content to be developed..."

(Expert 1, 20 January, 2024: Interview)

"...The importance of having prior knowledge comes first in development. Therefore, in any developmental aspect, training should always include prior knowledge. Some educational administrators may have extensive knowledge but may not be able to apply it effectively. Therefore, it should be present in real-world practice scenarios, tasks should be assigned to be performed, and there should be case studies on operational procedures. Knowledge resides within individuals, but experience is what allows it to be applied effectively..."

(Expert 2, 20 January, 2024: Interview)

"...The learning of educational administrators, in some cases, may not be found in textbooks; it must come from real-world experiences that we observe firsthand. What matters is a good model and having experienced individuals to teach and guide, ensuring that this knowledge is carried forward continuously..."

(Expert 3, 20 January, 2024: Interview)

"...Effective training programs should be tailored to meet the specific needs of the individuals or groups involved. Training enhances confidence, competence, and overall performance, leading to better outcomes for all stakeholders..."

(Expert 4, 21 January, 2024: Interview)

"...By engaging in internships, apprenticeships, or hands-on projects, teachers gain valuable insights into the real-world application of their academic knowledge. Practical work experience allows teachers to develop technical skills, professional networks..."

(Expert 5, 21 January, 2024: Interview)

#### **4. Duration to enhance competency of Dual-Qualified teachers**

According to the discussion among education administrators and researchers regarding the time required to enhance the capabilities of Dual-Qualified teacher instructors at local applied universities, there was a consensus that it would take approximately 90 hours.

"...Developing educational administrators, to yield tangible results, should ideally be followed by a round of improvement cycles. However, given the general workload burden on educational administrators, programs lasting 15 or 30 days are deemed appropriate..."

(Expert 1, 20 January, 2024: Interview)

"...All 5 components of enhancing Dual-Qualified teacher instructors capabilities are equally important, as indicated by the analysis of priority needs index results, which serve as the data for drafting a plan to enhance the capabilities of dual-teacher instructors at local applied universities..."

(Expert 2, 20 January, 2024: Interview)

"...Based on the content of the training, each module is equally important. To achieve a significant improvement, I believe the entire enhancement program should require 3 to 4 weeks of time..."

(Expert 3, 20 January, 2024: Interview)

"...Having analyzed the training content thoroughly, I agree that each module holds significant importance. To ensure that participants absorb the material adequately and can apply it effectively, I recommend a duration of at least 3 weeks for the training program. This timeframe allows sufficient time for in-depth exploration of each topic, meaningful discussions, and practical exercises, ultimately leading to a more comprehensive understanding and better retention of knowledge..."

(Expert 4, 21 January, 2024: Interview)

"...I concur with the assessment that all modules within the training are crucial for achieving the desired outcomes. Considering the depth of the content and the need for participants to internalize and apply the learning, I advocate for a duration of 4 weeks for the training program. This extended time frame allows for a more thorough exploration of each module, facilitates ample time for hands-on activities and group interactions, and ensures that participants have the opportunity to fully grasp and integrate the concepts presented..."

(Expert 5, 21 January, 2024: Interview)

## 5. Measurement and Evaluation

Based on interviews with educational administrators, the respondents unanimously agree that multiple tools should be used for measurement and evaluation. Prior to development, assessments should examine the existent condition level of dual-teacher instructor capabilities, and during development, they should identify issues and obstacles. After development, the level of Dual-Qualified teacher instructor capabilities should be reassessed.

"...Measurement and evaluation of the project are essential as they provide insights into whether the project can enhance the capabilities of Dual-Qualified teacher instructors. It is important to measure Dual-Qualified teacher instructor capabilities both before and after development to compare the results..."

(Expert 1, 20 January, 2024: Interview)

"...During development, activities and assigned tasks should be measured and evaluated to assess the training and development outcomes, enabling adjustments for future activities. Furthermore, providing feedback to participants about their development progress is crucial for them to understand their growth areas during the development process..."

(Expert 2, 20 January, 2024: Interview)

"...Evaluating the effectiveness of the project is crucial as it helps us understand the actual impact of the training and provides guidance for future improvements. Evaluation not only quantifies learning outcomes but also identifies potential areas for improvement, thereby further optimizing the training program..."

(Expert 3, 20 January, 2024: Interview)

"...Evaluating the effectiveness of the project is one of the key steps to ensuring the success of the training program. We can employ various methods to

assess the improvement of students' knowledge and skills. Additionally, we should regularly communicate with students, gather their feedback and suggestions, in order to promptly adjust the training program to meet the actual needs and expectations of the students..."

(Expert 4, 21 January, 2024: Interview)

"...Agreeing to evaluate the effectiveness of the project. Through evaluation, we can identify the strengths and weaknesses of the training program and take timely measures to improve it. I recommend using multiple evaluation methods, such as combining qualitative and quantitative analysis, to comprehensively understand the project's effectiveness..."

(Expert 5, 21 January, 2024: Interview)

From the discussions conducted, the researchers were able to summarize key findings to design a program aimed at enhancing the capabilities of Dual-Qualified teacher instructors in local applied universities. This was based on interviews with educational administrators, as shown in Tables 25 and 26.

Table 25 Guidelines for the development of supplementary programs to promote the capacity of Dual-Qualified teachers in local applied universities

	Content	Principle	Method	Duration
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Educational administrator 1	Module 1 Proper ethics	70:20:10 Learning Model	1) Training 2) Learning from case studies 3) Brainstorming 4) Learning from practical work experience	20
	Module 2 Practical ability	70:20:10 Learning Model	1) Self-directed learning 2) Training 3) Learning from case studies 4) Brainstorming 5) Learning from practical work experience 6) Teaching tasks	20
	Module 3 Teaching ability	70:20:10 Learning Model	1) Self-directed learning 2) Training 3) Brainstorming 4) Learning from practical work experience 5) Teaching tasks	20

Table 25 (continued)

	Content	Principle	Method	Duration
Educational administrator 1	Module 4 Reflection and improvement	70:20:10 Learning Model	1) Self-directed learning 2) Learning from case studies 3) Brainstorming 4) Learning from practical work experience	15
	Module 5 Teacher-student relationship	70:20:10 Learning Model	1) Brainstorming 2) Learning from case studies 3) Teaching tasks 4) Self-directed learning 5) Learning from practical work experience 6) Training	15
Educational administrator 2	Module 1 Proper ethics	70:20:10 Learning Model	1) Self-directed learning 2) Training 3) Teaching tasks 4) Brainstorming 5) Learning from case studies	20

Table 25 (continued)



	Content	Principle	Method	Duration
Educational administrator 2	Module 2 Practical ability	70:20:10 Learning Model	1) Learning from practical work experience 2) Training 3) Learning from case studies 4) Brainstorming 5) Self-directed learning 6) Teaching tasks	20
	Module 3 Teaching ability	70:20:10 Learning Model	1) Training 2) Learning from case studies 3) Learning from practical work experience 4) Teaching tasks	15
	Module 4 Reflection and improvement	70:20:10 Learning Model	1) Self-directed learning 2) Training 3) Learning from case studies 4) Brainstorming 5) Learning from practical work experience 6) Teaching tasks	15

Table 25 (continued)

	Content	Principle	Method	Duration
Educational administrator 2	Module 5 Teacher-student relationship	70:20:10 Learning Model	1) Brainstorming 2) Training 3) Learning from case studies 4) Self-directed learning 5) Learning from practical work experience	20
Educational administrator 3	Module 1 Proper ethics	70:20:10 Learning Model	1) Self-directed learning 2) Training 3) Learning from case studies 4) Brainstorming 5) Learning from practical work experience 6) Teaching tasks	20
	Module 2 Practical ability	70:20:10 Learning Model	1) Learning from case studies 2) Brainstorming 3) Learning from practical work experience 4) Teaching tasks	15

Table 25 (continued)

	Content	Principle	Method	Duration
Educational administrator 3	Module 3 Teaching ability	70:20:10 Learning Model	1) Brainstorming 2) Learning from practical work experience 3) Teaching tasks 4) Self-directed learning 5) Training 6) Learning from case studies	20
	Module 4 Reflection and improvement	70:20:10 Learning Model	1) Self-directed learning 2) Training 3) Brainstorming 4) Teaching tasks	15
	Module 5 Teacher-student relationship	70:20:10 Learning Model	1) Self-directed learning 2) Training 3) Learning from case studies 4) Brainstorming 5) Teaching tasks	20

Table 25 (continued)

	Content	Principle	Method	Duration
Educational administrator 4	Module 1 Proper ethics	70:20:10 Learning Model	1) Self-directed learning 2) Learning from practical work experience 3) Teaching tasks 4) Learning from case studies 5) Brainstorming	20
	Module 2 Practical ability	70:20:10 Learning Model	1) Brainstorming 2) Learning from practical 3) Self-directed learning 4) Training 5) Learning from case studies work experience 6) Teaching tasks	20
	Module 3 Teaching ability	70:20:10 Learning Model	1) Training 2) Learning from case studies 3) Brainstorming 4) Learning from practical work experience 5) Teaching tasks	20

Table 25 (continued)

	Content	Principle	Method	Duration
Educational administrator 4	Module 4 Reflection and improvement	70:20:10 Learning Model	1) Learning from practical work experience 2) Teaching tasks 3) Training 4) Learning from case studies 5) Brainstorming	15
	Module 5 Teacher-student relationship	70:20:10 Learning Model	1) Self-directed learning 2) Training 3) Learning from case studies 4) Brainstorming 5) Learning from practical work experience 6) Teaching tasks	15
Educational administrator 5	Module 1 Proper ethics	70:20:10 Learning Model	1) Self-directed learning 2) Learning from practical work experience 3) Teaching tasks 4) Learning from case studies 5) Brainstorming	20

Table 25 (continued)

	Content	Principle	Method	Duration
Educational administrator 5	Module 2 Practical ability	70:20:10 Learning Model	1) Learning from practical work experience 2) Teaching tasks 3) Self-directed learning 4) Brainstorming 5) Training	20
	Module 3 Teaching ability	70:20:10 Learning Model	1) Brainstorming 2) Self-directed learning 3) Training 4) Learning from case studies 5) Learning from practical work experience 6) Teaching tasks	15
	Module 4 Reflection and improvement	70:20:10 Learning Model	1) Learning from practical work experience 2) Teaching tasks 3) Learning from case studies 4) Brainstorming	15

Table 25 (continued)

	Content	Principle	Method	Duration
Educational administrator 5	Module 5 Teacher-student relationship	70:20:10 Learning Model	1) Learning from case studies 2) Brainstorming 3) Self-directed learning 4) Teaching tasks 5) Training 6) Learning from practical work experience	20

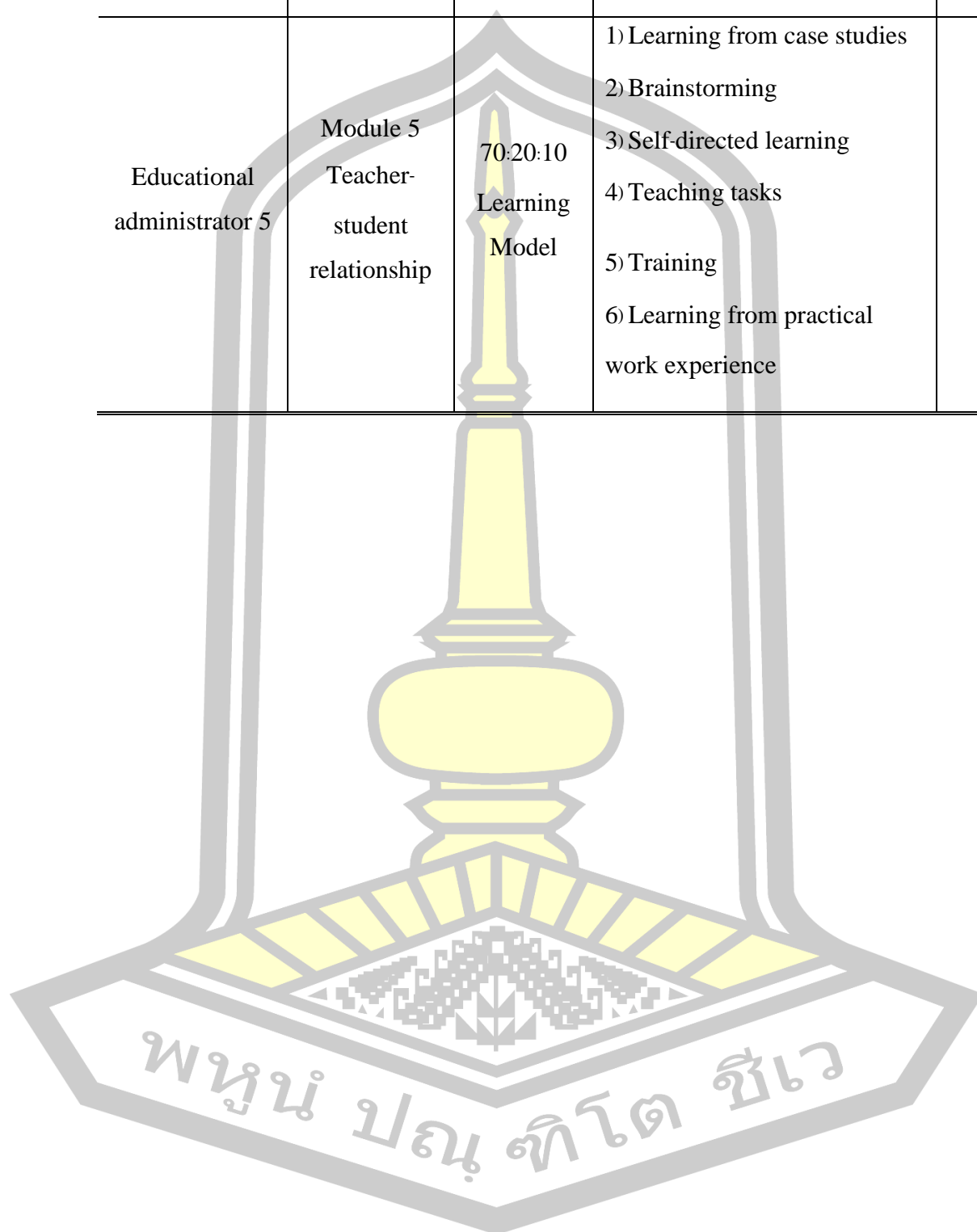


Table 26 Summarizes the key findings in the design of the supplemental program by educational administrators to enhance the capabilities of Dual-Qualified teachers in local applied universities



Issue of discussion	Summary of key findings from the discussion
1.Components of the program	1) Principles 2) Objectives 3) Content 4) Development Process 5) Measurement and Evaluation
2.Development format	70:20:10 learning model — 70% Learn by Experience — 20% Learn by Others — 10% Learn by Courses
3.Development method	1) Self-directed learning 2) Training 3) Learning from case studies 4) Brainstorming 5) Learning from practical work experience 6) Teaching tasks
4.Duration	90 hours
5.Measurement and Evaluation	— Assess the development of Dual-Qualified teachers' abilities using the capacity development assessment tool before, during, and after the development stages. — Before the commencement of the Dual-Qualified teacher capacity development program, use satisfaction assessment tools to evaluate the satisfaction level of the development plan.

### **Stage 3: Assessment Results of the Program to Enhance the Competence of Dual-Qualified teachers in Local Applied Universities.**

#### **Part 1: Introduction to the Program for Enhancing the Capacity of Dual-Qualified teachers at Local Applied Universities.**

##### **1. Principles**

Dual-Qualified teachers play a crucial role in the national education development. They possess not only teaching skills but also in-depth knowledge and rich experience in their professional fields. By collaborating with students and other educators, Dual-Qualified teachers can provide more personalized and diverse learning experiences, fostering the comprehensive development of students. They can also serve as leaders in educational reform and innovation, promoting the improvement of educational quality and the continuous development of the education system. Therefore, cultivating and supporting Dual-Qualified teachers is of great significance to the development of the national education industry. This not only enhances the quality of education by providing richer teaching resources and innovative teaching methods to promote the comprehensive development of students, but also drives educational reform and the continuous improvement and development of the education system. Moreover, high-quality Dual-Qualified teacher teams can enhance the competitiveness of schools, attracting more outstanding students and parents to choose the school, thereby enhancing the reputation and status of the school. Most importantly, in the face of future social changes and challenges, improving the ability of Dual-Qualified teachers can make the education system more flexible and adaptable, cultivating more competitive and adaptable future talents. Therefore, enhancing the ability of Dual-Qualified teachers is not only about the professional development of individual teachers but also about the development of the entire education system and the progress of future society..

## 2. Objectives

2.1 Enhance understanding of the principles of developing the capabilities of Dual-Qualified teachers in local applied universities.

2.2 Under the supervision of relevant educational administrators, cultivate the capabilities of Dual-Qualified teachers in local applied universities. This includes 5 areas: 1) Proper ethics, 2) Practical ability, 3) Teaching ability, 4) Reflection and improvement, 5) Teacher-student relationship.

2.3 To ensure that the Dual-Qualified teachers receiving training improve their abilities and can apply the knowledge and experience gained in school work, thus producing a positive impact on the enhancement of educational quality.

## 3. Content

To enhance the capabilities of Dual-Qualified teachers in local applied universities, the program comprises 5 modules, each outlining specific content domains.

### Topic 1: Proper Ethics: Module 1

The content of this module focuses on enhancing teachers' ethical standards to achieve the goals or mission of the school. It includes qualities such as integrity, honesty, respect for others' privacy, adherence to laws, strong teamwork skills, and the ability to self-monitor and supervise others. This is achieved through Self-directed learning, Training, learning from case studies, Brainstorming, Learning from practical work experience, and Teaching tasks.

### Topic 2: Practical Ability: Module 2

The content of this module focuses on enhancing teachers' practical ability. It includes improving teachers' professional technical skills, enhancing teachers' problem-solving abilities, acquiring knowledge or skills through practical

experience, proficiently using tools and equipment, and continuously improving through teaching feedback. This is achieved through self-directed learning, training, learning from case studies, brainstorming, learning from practical work experience, and teaching tasks.

### Topic 3: Teaching Ability: Module 3

The focus of this module is to enhance teachers' pedagogical skills, encompassing the design of effective teaching activities, a comprehensive reservoir of instructional knowledge, proficient communication and interaction abilities, adept classroom management techniques, as well as continuous learning and professional development. These objectives are accomplished through self-directed learning, training programs, analysis of case studies, collaborative brainstorming sessions, experiential learning from real-world scenarios and practical teaching assignments.

### Topic 4: Reflection and Improvement: Module 4

The primary objective of this module is to augment educators' capacity for introspection and advancement. It encompasses the cultivation of self-awareness, perpetuated learning, vigilant self-assessment of personal development, adeptness in discernment and decision-making, identification of issues through systematic inquiry and analysis, and the ability to conduct thorough problem analysis from various angles. These objectives are realized through avenues such as self-directed learning, structured training sessions, deriving insights from case studies, collaborative brainstorming sessions, experiential learning from practical contexts, and pedagogical responsibilities.

### Topic 5: Teacher-student Relationship: Module 5

The emphasis of this module lies in enhancing the Teacher-student relationship. It entails the ability to foster students' academic progress and development, provide a sense of calmness and reassurance to students facing psychological or emotional challenges, possess the interpersonal skills necessary for

successful social communication and interaction, offer appropriate guidance and care to students in academic, emotional, and behavioral aspects. These objectives are achieved through avenues such as self-directed learning, structured training sessions, deriving insights from case studies, collaborative brainstorming sessions, experiential learning from practical contexts, and pedagogical responsibilities.

#### **4. Development Process**

##### **4.1 Development Principles**

From studying and analyzing academic literature and documents, the concept of learning has been formulated according to the 70:20:10 model. This concept was introduced by Lawson (2008), and further elaborated upon by Phurivat Wannichawasin (2016), Sutham Thammathatsana (2019). It comprises three essential components of learning:

##### **1) 70% Learn by Experience**

It pertains to a mode of learning derived from direct experiential engagement within authentic workplace settings or practical fieldwork. This avenue empowers educational administrators with the capacity to expeditiously acquire insightful understandings. The adept acquisition of knowledge from such experiences subsequently culminates in efficacious learning, as administrators internalize these experiences into their cognitive repertoire and behavioral repertoire, effectively serving as a conduit between practical application and theoretical frameworks. This methodological approach fosters the cultivation of novel experiential realms or proficiencies, thereby augmenting the efficacy of educational administrators' professional responsibilities. The tools employed for personnel development underpinned by this learning paradigm transcend conventional classroom-based instructional modalities.

##### **2) 20% Learn by Others**

This represents a learning modality known as "Learn by Others," wherein individuals acquire knowledge and skills not exclusively through direct supervision or authority but rather from their peers within or across organizational units. This collaborative learning approach may unfold in informal or structured environments, fostering dialogues, consultations, and the exchange of information. Such interactions hinge upon robust interpersonal relationships, necessitating active engagement, coordinated discussions, and the sharing of perspectives at opportune junctures among multiple parties. The developmental tools deployed within this framework transcend conventional classroom-based training methodologies.

### 3) 10% Learn by Courses

It represents a blended learning approach that integrates traditional classroom instruction with non-classroom methods, incorporating diverse learning modalities including e-learning platforms and various instructional materials. This method entails accessing pre-designed programs or courses, which are deemed essential and indispensable for professional development. It stands as a significant developmental format, facilitating learners' active involvement in experiential learning and ensuring the genuine assimilation and application of acquired knowledge.

### 4.2 Methods/Development Activities

The methods to enhancing the ability of Double-Qualified teachers are as follows:

4.2.1 70% Learning from Experience utilizing a duration of 63 hours, employing the following development methods:

Self-directed learning, utilizing a duration of 19 hours.

1) Learning Teacher Ethical Standards (Module 1)

2) Simulate scenarios for practice and practice (Module 2)

3) Read education books and literature (Module 3)

4) Keep a teaching log (Module 4)

5) Learn communication skills (Module 5)

Learning from practical work experience, utilizing a duration of 24 hours.

1) Set the right professional example (Module 1)

2) Participate in practical projects (Module 2)

3) Seminars, workshops and other professional development activities (Module 3)

4) Evaluate teaching effect (Module 4)

5) Participate in student activities (Module 5)

Teaching tasks, utilizing a duration of 20 hours.

1) Learn from great teachers (Module 1)

2) Classroom observation activities of fellow teachers (Module 2 and Module 3)

3) Seeking feedback on teaching (Module 4)

4) Exchange activities between teachers and students (Module 5)

4.2.2 20% Learning by Others utilizing a duration of 18 hours, employing the following development methods:

Learning from case studies, utilizing a duration of 10 hours.



1) Technical skills exchange activities (Module 2)

2) Instructional design improvement activities (Module 3)

3) Excellent experience exchange activities (Module 4)

Brainstorming, utilizing a duration of 8 hours.

1) Innovation workshop (Module 1)

2) Team building activity (Module 5)

4.2.3 10% Learning by Courses utilizing a duration of 9 hours, employing the following development methods:

Training, utilizing a duration of 9 hours.

1) Teacher ethics training activities (Module 1)

2) Teachers' practical ability training activities (Module 2)

3) Teaching skills training activities for teachers (Module 3)

4) Teachers' reflective ability enhancement activities  
(Module 4)

5) How to be a good friend of students Training activities  
(Module 5)

## **5. Measurement and Evaluation**

### **5.1 Pre-development evaluation**

Analyzing the constituent elements of Double-Qualified teacher competence via a comprehensive literature review and conducting an evaluation of the existing dual-teacher competence prior to further development.



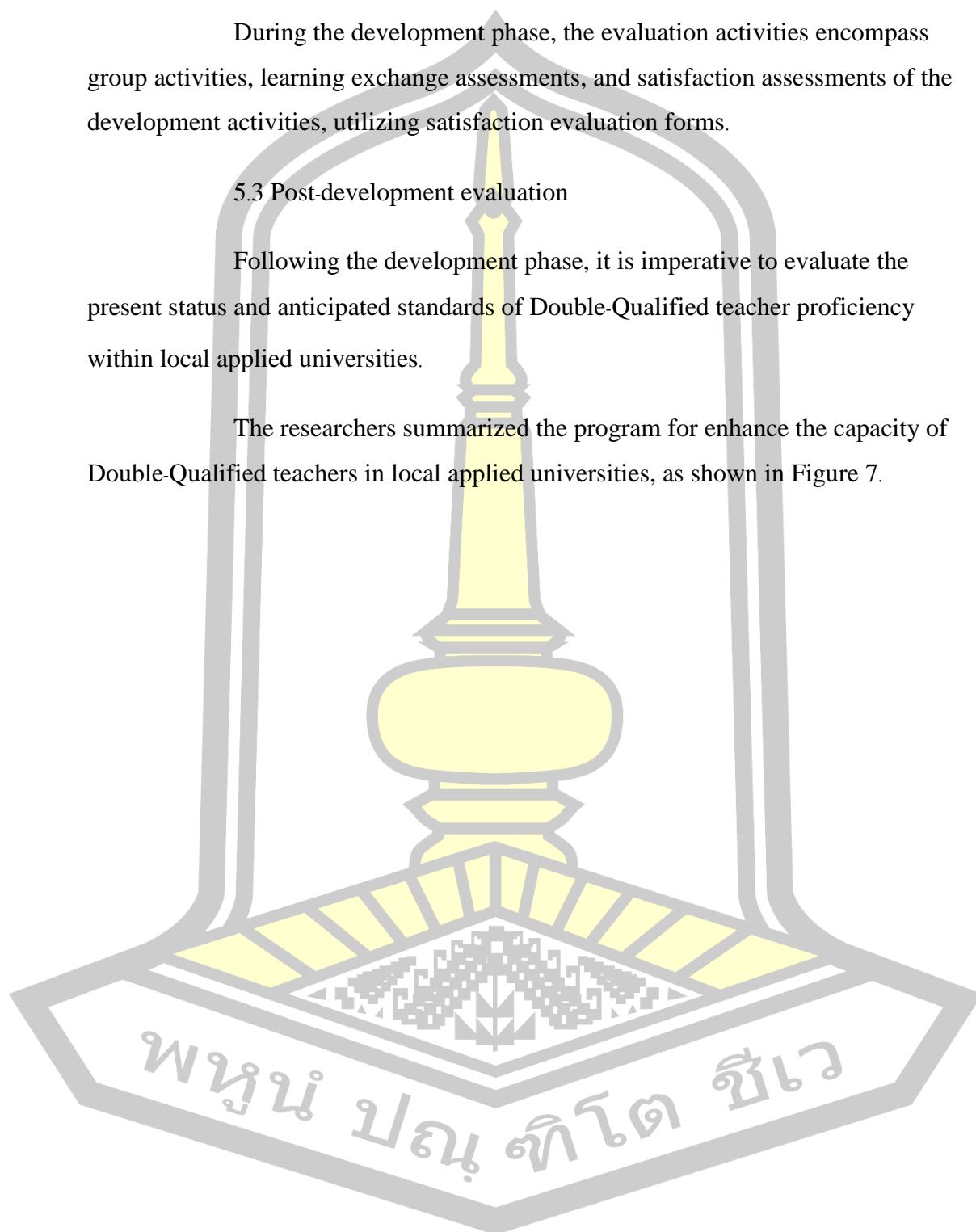
## 5.2 Evaluation during development

During the development phase, the evaluation activities encompass group activities, learning exchange assessments, and satisfaction assessments of the development activities, utilizing satisfaction evaluation forms.

## 5.3 Post-development evaluation

Following the development phase, it is imperative to evaluate the present status and anticipated standards of Double-Qualified teacher proficiency within local applied universities.

The researchers summarized the program for enhance the capacity of Double-Qualified teachers in local applied universities, as shown in Figure 7.



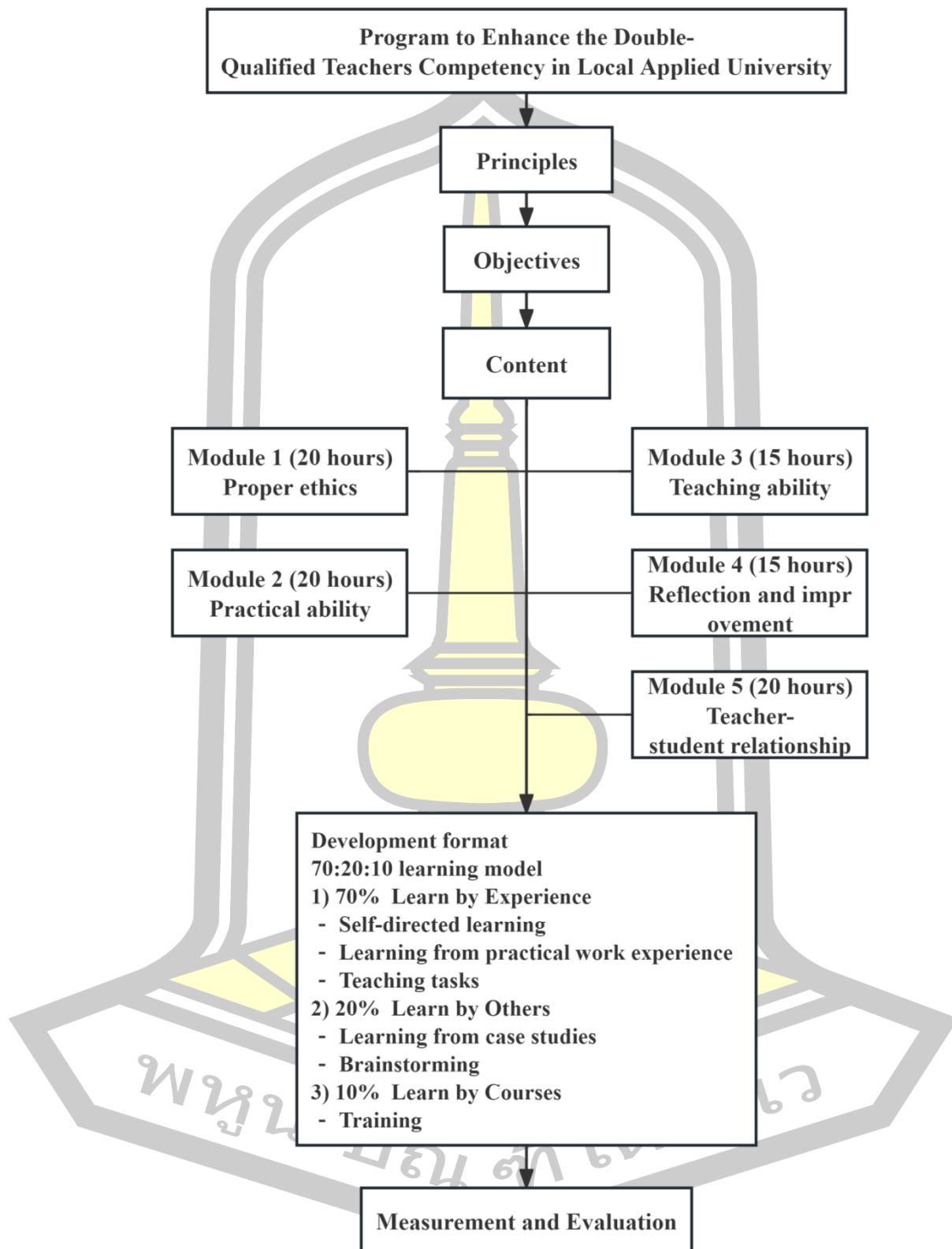


Figure 7 Program for Enhance Capacity of Double-Qualified Teachers in Local Applied Universities

**Part 2:** Details of the program content to enhance the Double-Qualified teacher capability of local applied universities. The components of the program are as follows:

### **1. Module 1: Proper ethics**

#### **1.1 Principles**

The ethical code of teachers refers to the behavioral guidelines and moral standards that teachers should adhere to in their educational work. These standards include but are not limited to integrity, responsibility, fairness, respect, care, and professionalism. They guide teachers to maintain good character and behavior in interactions with students, parents, colleagues, and the wider community, promoting the normal conduct of education and the comprehensive development of students. The ethical code of teachers is of utmost importance in education. It not only guides teachers' performance in teaching and behavior but also plays a crucial role in shaping students' character, values, and sense of social responsibility. Teachers' ethical behavior influences students' attitudes towards learning and behavior patterns, serving as a positive example for them. The integrity, fairness, and respect demonstrated by teachers not only serve as a model during the teaching process but also cultivate students' moral awareness and sense of social responsibility as they grow, facilitating the comprehensive development of education.

#### **1.2 Objectives**

The goal of enhancing teacher ethical standards is to cultivate an educator workforce with high professional integrity and social responsibility. By emphasizing values such as honesty, responsibility, fairness, and respect, it encourages teachers to demonstrate good moral qualities and behaviors in educational practice. This not only helps ensure the smooth operation of educational work but also sets a good example for students, fostering their positive outlook and values, thereby promoting comprehensive development in education and enhancing students' overall quality.

### 1.3 Content

1.3.1 The meaning and importance of learning teacher ethical standards

1.3.2 Steps in the teacher ethical management process

1.3.3 Components of ethical standards

1.3.4 Implementation of ethical management in school administration

### 1.4 Development process of Proper ethics for Double-Qualified teachers in local applied universities.

The details are shown in Table 27.

Table 27 Development process of Proper ethics for Double-Qualified teachers in local applied universities

Development methods	Development activities (20 hours)
Learning by Experience: 14 hours	
Self-directed learning (6 hours)	Learning teacher ethical standards covers aspects such as integrity, responsibility, fairness, and respect.
Learning from practical work experience (4 hours)	Observing and emulating the behavior standards of experienced teachers.
Teaching tasks (4 hours)	Participate in classroom observation activities of fellow teachers and learn from the experience and teaching of other teachers.
Learning by Others: 4 hours	

Brainstorming (4 hours)	Use brainstorming to interact with fellow teachers to generate new ideas, solve problems, or develop plans.
Learning by Courses takes 2 hours.	

Table 27 (continued)

Development methods	Development activities (20 hours)
Training (2 hours)	<p>Teacher ethics training activities sequence of steps as follows:</p> <ol style="list-style-type: none"> <li>1. Lecture to provide knowledge by lecturers including: <ul style="list-style-type: none"> <li>-The significance and importance of teacher morality.</li> <li>-Teacher moral management process.</li> <li>-Explain the components of ethical standards</li> </ul> </li> <li>2. Join a group to discuss the problems encountered in the process of teacher ethics management and how to solve them.</li> <li>3. Discuss and present the results of the activities.</li> </ol>

### 1.5 Measurement and evaluation

1.5.1 Evaluate the results of ethical guideline communication.

1.5.2 Assess the project's ethical management plan.

1.5.3 Evaluate the results of ethical management  
operational monitoring.

1.5.4 Assess the results presented by ethical management  
activities.

## **2. Module 2: Practical ability**

### **2.1 Principles**

The importance of teachers' practical abilities in teaching work is self-evident, as they directly impact teaching effectiveness and student learning outcomes. Enhancing teachers' practical abilities means they can more flexibly adapt to various teaching situations and challenges, continuously optimize teaching methods and strategies, and improve teaching quality. This not only helps to stimulate students' interest and enthusiasm for learning but also shapes their lifelong learning abilities and independent learning awareness, laying a solid foundation for their future development.

### **2.2 Objectives**

The purpose of enhancing teachers' practical abilities is to optimize teaching quality and promote student development. By strengthening teachers' practical skills, they can better integrate theoretical knowledge with practical application, innovate teaching methods, and improve teaching effectiveness. This not only helps to stimulate students' interest and potential for learning, cultivate their comprehensive qualities, but also fosters more talent with practical abilities and innovative spirit for society, thereby advancing overall progress in education and societal development.

### **2.3 Content**

2.3.1 Significance and importance of practical ability

2.3.2 Components of practical ability

### 2.3.3 Establishing practical ability evaluation

### 2.3.4 Practical ability learning atmosphere

## 2.4 Development process of Practical ability for Double-Qualified teachers in local applied universities.

The details are shown in Table 28.

Table 28 Development process of Practical ability for Double-Qualified teachers in local applied universities

Development methods	Development activities (20 hours)
Learning by Experience: 14 hours	
Self-directed learning (4 hours)	Simulate scenarios for practice and practice
Learning from practical work experience(6hours)	Actively participate in the school's practical projects or extracurricular activities, and improve my practical ability through practical exercise and experience accumulation
Teaching tasks (4 hours)	Teachers' classroom observation activities, learn from other teachers' experience and methods, expand their own vision, improve their own level
Learning by Others: 4 hours	
Learning from case studies (4 hours)	Actively share teaching experience and teaching methods with fellow teachers and learn from their successful experience.
Learning by Courses takes 2 hours.	

Training  
(2 hours)

Teachers' practical ability training activities  
sequence of steps as follows:

1. Lecture to provide knowledge by lecturers including:
  - The significance and importance of teachers' practical ability.
  - The process of improving teachers' practical ability.
  - Explain the components of practical competence.
2. Participate in group activities to exchange learning experiences, share findings, and discuss practical experiences.
3. Discuss and present the outcomes of the activities, including exchanging learning experiences and sharing insights.

## 2.5 Measurement and evaluation

2.5.1 Evaluate the results of practical ability communication.

2.5.2 Assess the project's practical ability management plan.

2.5.3 Evaluate the results of practical ability management operational monitoring.

2.5.4 Assess the results presented by practical ability management activities.

## 3. Module 3: Teaching ability

### 3.1 Principles



The importance of teachers' teaching ability in education is self-evident, as their teaching level directly determines students' learning outcomes and potential for development. Enhancing teachers' teaching ability means they can more effectively impart knowledge, stimulate students' interest in learning, guide students' thinking development, and personalize teaching according to students' characteristics and needs. This not only enhances the quality of education but also cultivates students' comprehensive qualities and innovation abilities, laying a solid foundation for their future growth and success.

### **3.2 Objectives**

The purpose of enhancing teachers' teaching abilities is to optimize the quality of education and foster student development. By strengthening teachers' instructional skills, they can better integrate theoretical knowledge with practical applications, innovate teaching methods, and improve teaching effectiveness. This not only helps to stimulate students' interest and potential for learning and develop their comprehensive abilities but also cultivates more talented individuals with practical skills and innovative spirits for society, thereby driving overall progress in education and societal development.

### **3.3 Content**

3.3.1 The significance and importance of teaching ability

3.3.2 Components of teaching ability

3.3.3 Establishment of teaching ability evaluation

3.3.4 Teaching ability learning atmosphere

### **3.4 Development process of Teaching ability for**

**Double-Qualified teachers in local applied universities.**

The details are shown in Table 29.

Table 29 Development process of Teaching ability for Double-Qualified teachers in local applied universities

Development methods	Development activities (15 hours)
Learning by Experience: 10.5 hours	
Self-directed learning (2.5 hours)	Read education books and literature.
Learning from practical work experience(4hours)	Participate in teaching seminars and discussion activities organized by schools or disciplines, learn from others' teaching methods and experience, and promote their own growth and improvement.
Teaching tasks (4 hours)	Teachers' classroom observation activities, learn from other teachers' experience and methods, expand their own vision, improve their own level
Learning by Others: 3 hours	
Learning from case studies (3 hours)	Teaching design improvement activities, communicate with fellow teachers
Learning by Courses takes 1.5 hours.	

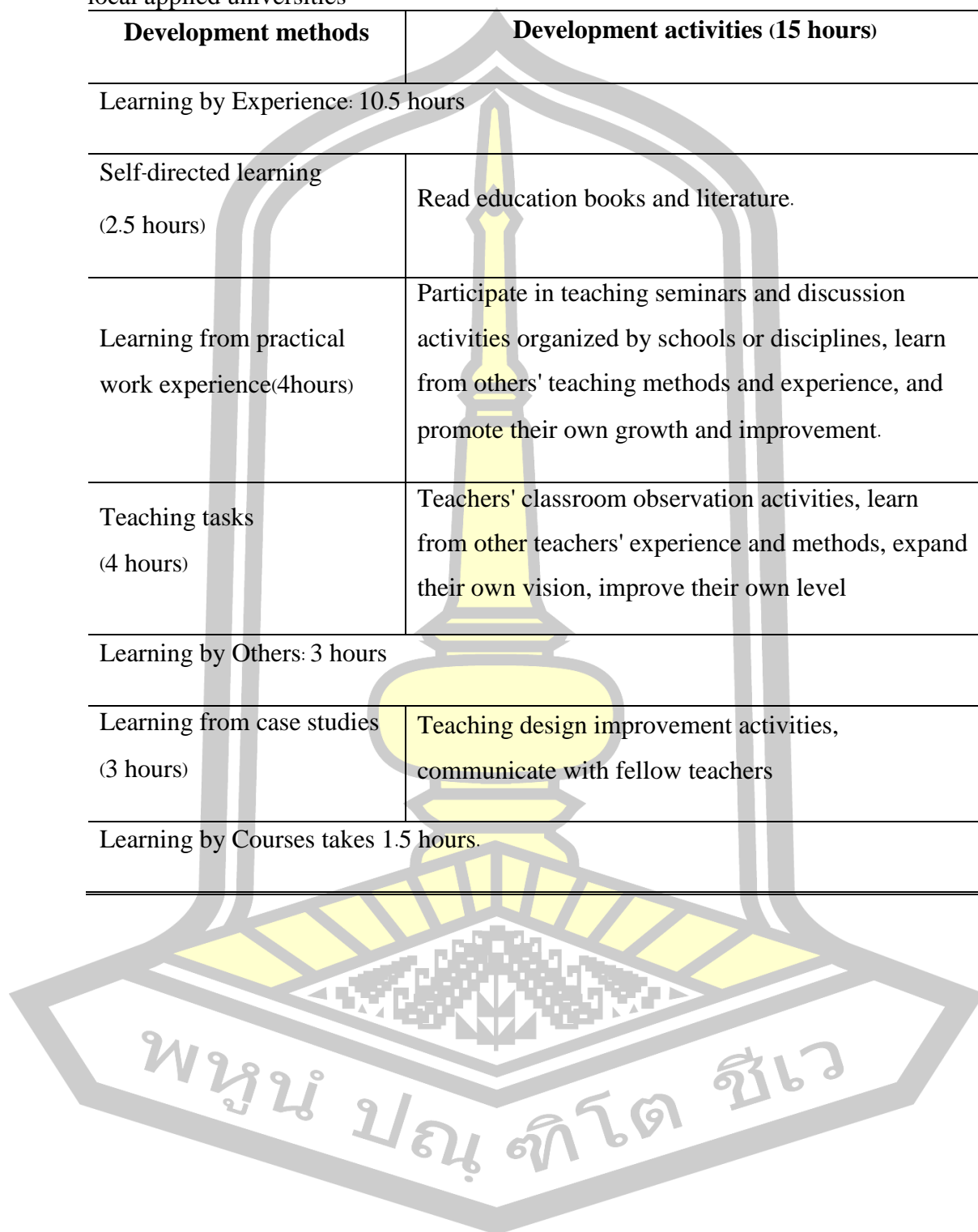


Table 29 (continued)

Development methods	Development activities (15 hours)
Training (1.5 hours)	<p>Teaching skills training activities for teacher sequence of steps as follows:</p> <ol style="list-style-type: none"> <li>1. Lecture to provide knowledge by lecturers including: <ul style="list-style-type: none"> <li>-The significance and importance of teachers' teaching ability.</li> <li>-The process of improving teachers' teaching ability.</li> <li>-Explain the components of teaching competence.</li> </ul> </li> <li>2. Participate in group activities to exchange learning experiences, share findings, and discuss practical experiences.</li> <li>3. Discuss and present the outcomes of the activities, including exchanging learning experiences and sharing insights.</li> </ol>

### 3.5 Measurement and evaluation

3.5.1 Evaluate the results of teaching ability communication.

3.5.2 Assess the project's teaching ability management

3.5.3 Evaluate the results of teaching ability management operational monitoring.

3.5.4 Assess the results presented by teaching ability management activities.

## **4. Module 4: Reflection and improvement**

### **4.1 Principles**

Improvement and reflection are crucial for teachers because they prompt continuous reflection and refinement of teaching practices, thereby enhancing teaching quality and effectiveness. Improving teachers' ability to reflect and improve means they can gain deeper insights into the challenges and opportunities in the teaching process, allowing them to promptly adjust teaching methods and strategies to better meet students' learning needs. This not only contributes to teachers' professional growth but also fosters students' interest and creativity in learning, promoting comprehensive development in education.

### **4.2 Objectives**

The purpose of enhancing teachers' reflection and improvement abilities is to promote their professional growth and elevate the quality of education. Through reflection, teachers can examine their teaching practices, identify issues, and seek ways for improvement, thus continually refining teaching strategies and enhancing teaching effectiveness. This capability not only fosters the deepening of teachers' individual career development but also provides students with higher-quality, more targeted educational services, thereby driving progress and development within the entire education system. Its significance lies in serving as a crucial cornerstone for teachers' continuous learning and adaptation to educational reforms.

### **4.3 Content**

4.3.1 Significance and importance of improvement and reflection

4.3.2 Components of improvement and reflection

4.3.3 Cultivate behavior habits of personal improvement and reflection

#### 4.3.4 Refining and rethinking processes to achieve success goals

#### 4.4 Development process of Reflection and improvement for Double-Qualified teachers in local applied universities.

The details are shown in Table 30.

Table 30 Development process of Reflection and improvement for Double-Qualified teachers in local applied universities

Development methods	Development activities (15 hours)
Learning by Experience: 10.5 hours	
Self-directed learning (2.5 hours)	Write a teaching journal, and summarize the experience from the journal.
Learning from practical work experience(4hours)	A variety of evaluation methods and means are used to evaluate the teaching effect, including students' test scores, homework completion, classroom performance, etc
Teaching tasks (4 hours)	Invite colleagues or leaders to comment on your teaching and accept their advice and guidance.
Learning by Others: 3 hours	
Learning from case studies (3 hours)	At every step of the teaching process, reflect and communicate with fellow teachers.
Learning by Courses takes 1.5 hours.	

Table 30 (continued)

Development methods	Development activities (15 hours)
<p>Training (1.5 hours)</p>	<p>Teachers' reflective ability enhancement activities sequence of steps as follows:</p> <ol style="list-style-type: none"> <li>1. Lecture to provide knowledge by lecturers including: <ul style="list-style-type: none"> <li>-The significance and importance of teachers' ability to improve and reflect.</li> <li>-The process of improving teachers' ability to improve and reflect.</li> <li>-Explain the components of improvement and reflection.</li> </ul> </li> <li>2. Participate in group activities to exchange learning experiences, share findings, and discuss practical experiences.</li> <li>3. Discuss and present the outcomes of the activities, including exchanging learning experiences and sharing insights.</li> </ol>
	<p><b>4.5 Measurement and evaluation</b></p> <p>4.5.1 Evaluate the results of reflection and improvement communication.</p> <p>4.5.2 Assess the project's reflection and improvement management plan.</p> <p>4.5.3 Evaluate the results of reflection and improvement management operational monitoring.</p>

4.5.4 Assess the results presented by reflection and improvement management activities.

## **5. Module 5: Teacher-student relationship**

### **5.1 Principles**

The teacher-student relationship is crucial in teaching as it directly influences students' learning experiences and outcomes. A positive teacher-student relationship is built on a foundation of respect, trust, and understanding, fostering a conducive learning environment that enhances students' motivation and engagement. This relationship facilitates close communication and interaction, enabling teachers to better understand students' needs and potential, thus providing personalized guidance and support for their learning. Ultimately, a good teacher-student relationship not only promotes students' academic development but also cultivates their social and emotional skills, laying a solid foundation for their future growth and success.

### **5.2 Objectives**

The purpose of improving teacher-student relationships is to create a positive, harmonious, and interactive educational environment, enhancing teaching effectiveness and fostering students' comprehensive development. Optimizing this relationship helps to foster mutual understanding, trust, and respect between teachers and students, inspiring students' learning motivation and creativity, while also enhancing teachers' job satisfaction and sense of accomplishment. Its significance extends beyond education and teaching itself, as it positively influences students' personality development, social adaptation skills, and future interpersonal abilities, making it a crucial factor in achieving comprehensive educational goals.

### **5.3 Content**

5.3.1 The significance and importance of a good teacher-student relationship

### 5.3.2 Elements of improving teacher-student relationship

### 5.3.3 Develop communication skills

### 5.3.4 Establish and organize communication and interaction between teachers and students

## 5.4 Development process of Teacher-student relationship for Double-Qualified teachers in local applied universities.

The details are shown in Table 31.

Table 31 Development process of Teacher-student relationship for Double-Qualified teachers in local applied universities

Development methods	Development activities (20 hours)
Learning by Experience: 14 hours	
Self-directed learning (4 hours)	Consult relevant books to learn effective communication skills
Learning from practical work experience (6 hours)	Participate in student activities and understand the individual needs of students
Teaching tasks (4 hours)	Exchange activities between teachers and students
Learning by Others: 4 hours	
Brainstorming (4 hours)	Brainstorm with students to encourage creative thinking and collective collaboration to spark new ideas and problem-solving approaches
Learning by Courses takes 2 hours.	



Table 31 (continued)

Development methods	Development activities (20 hours)
Training (2 hours)	<p>How to be a good friend of students Training activities sequence of steps as follows:</p> <ol style="list-style-type: none"> <li>1. Lecture to provide knowledge by lecturers including: <ul style="list-style-type: none"> <li>- The significance and importance of teacher-student relationship.</li> <li>- The process of maintaining teacher-student relationship.</li> <li>- Explain the components of the teacher-student relationship</li> </ul> </li> <li>2. Participate in group activities to exchange learning experiences, share findings, and discuss practical experiences.</li> <li>3. Discuss and present the results of the activities.</li> </ol>

### 5.5 Measurement and evaluation

5.5.1 Evaluate the results of teacher-student relationship communication.

5.5.2 Assess the project's teacher-student relationship management plan.

5.5.3 Evaluate the results of teacher-student relationship management operational monitoring.

5.5.4 Assess the results presented by teacher-student  
relationship management activities.

According to the contents of the plan on the competency of Double-Qualified teachers in local applied universities. The researchers developed a 15-day training program, as shown in Table 32.

Table 32 15-day training program

1st Day	- Opening ceremony -Explanation of training objective -Pre-test -Module 1: Proper ethics (Training) 2 Hours	Tea Break	-Module 1: Proper ethics (Learn teacher code of conduct) 1 Hour	Lunch Break	-Module 1: Proper ethics (Observation and imitation) 2 Hours	Tea Break	-Module 1: Proper ethics (Learn teacher code of conduct) 1 Hour
2st Day	-Module 1: Proper ethics (Classroom observation/lecture) 2 Hours	Tea Break	-Module 1: Proper ethics (Learn teacher code of conduct) 1 Hour	Lunch Break	-Module 1: Proper ethics (Brainstorming) 2 Hours	Tea Break	-Module 1: Proper ethics (Learn teacher code of conduct) 1 Hour

Table 32 (continued)

3st Day	-Module 1: Proper ethics (Learn teacher code of conduct) 1 Hour	Tea Break	-Mid-test -Module 1: Proper ethics (Observation and imitation) 2 Hours	Lunch Break	-Module 1: Proper ethics (Learn teacher code of conduct) 1 Hour	Tea Break	-Module 1: Proper ethics (Classroom observation/lect ure) 2 Hours
4st Day	-Post-test -Module 1: Proper ethics Brainstorming) 2 Hours	Tea Break	-Module 2: Practical ability (Practical activity) 1 Hour	Lunch Break	-Pre-test -Module 2: Practical ability (Training) 2 Hours	Tea Break	-Module 2: Practical ability (Practical activity) 1 Hour
5st Day	-Module 2: Practical ability (Scene practice) 2 Hours	Tea Break	-Module 2: Practical ability (Practical activity) 1 Hour	Lunch Break	-Module 2: Practical ability (Excellent case study) 2 Hours	Tea Break	-Mid-test -Module 2: Practical ability (Experience exchange) 1 Hour
6st Day	-Module 2: Practical ability (Participate in practical projects) 1.5 Hours	Tea Break	-Module 2: Practical ability (Participate in practical projects) 1.5 Hours	Lunch Break	-Module 2: Practical ability (Experience exchange) 1 Hour	Tea Break	-Module 2: Practical ability (Scene practice) 2 Hours
7st Day	-Module 2: Practical ability (Experience exchange) 1 Hour	Tea Break	-Module 2: Practical ability (Excellent case study) 2 Hours	Lunch Break	-Post-test -Module 2: Practical ability (Experience exchange) 1 Hour	Tea Break	-Module 3: Teaching ability (Classroom observation) 2 Hours

8st Day	-Pre-test -Module 3: Teaching ability (Training) 1.5 Hours	Tea Break	-Module 3: Teaching ability (Read related books) 1.5 Hours	Lunch Break	-Module 3: Teaching ability(commun ication) 1 Hour	Tea Break	-Module 3: Teaching ability(Organiz e a seminar) 2 Hour
9st Day	-Module 3: Teaching ability (Classroom observation) 2 Hours	Tea Break	-Mid-test -Module 3: Teaching ability (communicati on) 1 Hour	Lunch Break	-Module 3: Teaching ability (Read related books) 1 Hour	Tea Break	-Module 3: Teaching ability (Attend a workshop) 2 Hours
10st Day	-Post-test -Module 3: Teaching ability (Experience exchange) 1 Hour	Tea Break	-Pre-test -Module 4: Reflection and improvement (Teaching quality evaluation) 2 Hours	Lunch Break	-Module 4: Reflection and improvement (Training) 1.5 Hours	Tea Break	-Module 4: Reflection and improvement (Keep a teaching journal) 1.5 Hours
11st Day	-Module 4: Reflection and improvement (Teaching evaluation) 2 Hours	Tea Break	-Module 4: Reflection and improvement (communicati on) 1 Hour	Lunch Break	-Module 4: Reflection and improvement (Teaching quality evaluation) 2 Hours	Tea Break	-Mid-test -Module 4: Reflection and improvement(c ommunication) 1 Hour

12st Day	-Module 4: Reflection and improvement (Keep a teaching journal) 1 Hours	Tea Break	-Module 4: Reflection and improvement (Teaching evaluation) 2 Hours	Lunch Break	-Post-test -Module 4: Reflection and improvement(c ommunication) 1 Hour	Tea Break	-Pre-test -Module 5: Teacher-student relationship (Training) 2 Hours
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Table 32 (continued)

13st Day	-Module 5: Teacher-student relationship (Participate in student activities) 1 Hour	Tea Break	-Module 5: Teacher-student relationship (Learn communication skills) 2 Hours	Lunch Break	-Module 5: Teacher-student relationship (Communication between teachers and students) 2 Hours	Tea Break	-Module 5: Teacher-student relationship (Participate in student activities) 1 Hour
14st Day	-Module 5: Teacher-student relationship (Brainstorming) 2 Hours	Tea Break	-Module 5: Teacher-student relationship (Participate in student activities) 1 Hour	Lunch Break	-Mid-test -Module 5: Teacher-student relationship (Learn communication skills) 2 Hours	Tea Break	-Module 5: Teacher-student relationship (Communication between teachers and students) 1 Hour
15st Day	-Module 5: Teacher-student relationship (Participate in student activities) 1.5 Hours	Tea Break	-Module 5: Teacher-student relationship (Participate in student activities) 1.5 Hours	Lunch Break	-Module 5: Teacher-student relationship (Brainstorming) 2 Hours	Tea Break	-Post-test -Module 5: Teacher-student relationship (Communication between teachers and students) 1 Hour

**Part 3:** Results of evaluating the suitability of the Dual-Qualified teachers enhance program.

1. Evaluation of the suitability and feasibility of the program to enhance the Dual-Qualified teachers by 5 experts, as shown in Table 33.

Table 33 Standard deviation of appropriateness levels of the program to enhance Dual-Qualified teacher competency

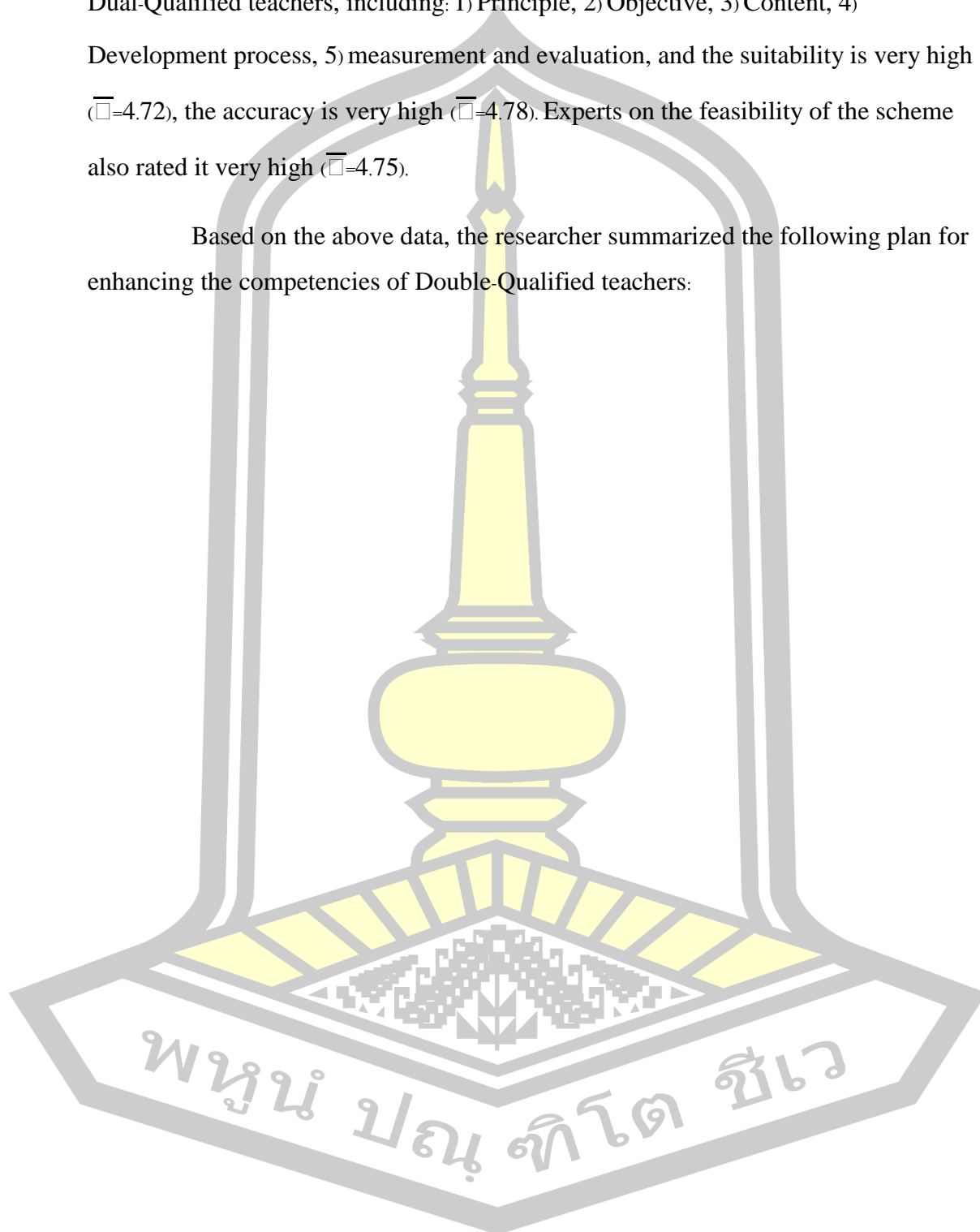
Evaluation List	Suitability			Feasibility		
	$\bar{X}$	SD.	Interpret	$\bar{X}$	SD.	Interpret
1. Principles	4.75	0.41	Very High	4.82	0.33	Very High
2. Objectives	4.68	0.34	Very High	4.65	0.41	Very High
3. Contents						
3.1 Module 1: Proper ethics	4.62	0.52	Very High	4.81	0.34	Very High
3.2 Module 2: Practical ability	4.81	0.43	Very High	4.73	0.34	Very High
3.3 Module 3: Teaching ability	4.71	0.44	Very High	4.76	0.42	Very High
3.4 Module 4: Reflection and Improvement	4.74	0.38	Very High	4.71	0.35	Very High
3.5 Module 5: Teacher-student relationship	4.83	0.35	Very High	4.74	0.43	Very High
4. Development Processes						

Table 33 (continued)

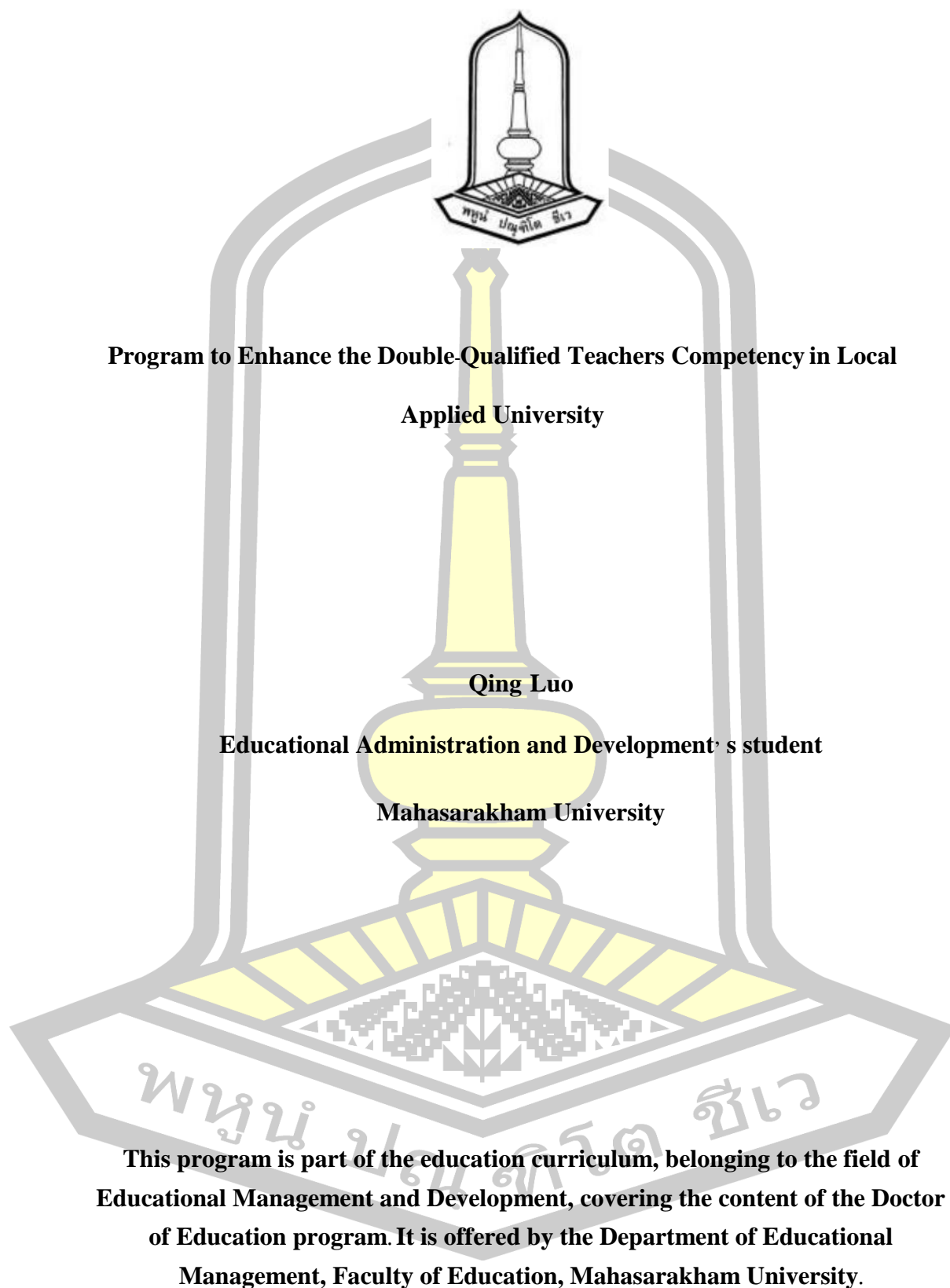
Evaluation List	Suitability			Feasibility		
	$\bar{X}$	SD.	Interpret	$\bar{X}$	SD.	Interpret
4.1 Self-directed learning	4.76	0.45	Very High	4.68	0.38	Very High
4.2 Training	4.69	0.51	Very High	4.75	0.45	Very High
4.3 Learning from case studies	4.77	0.42	Very High	4.69	0.51	Very High
4.4 Brainstorming	4.73	0.45	Very High	4.83	0.36	Very High
4.5 Learning from practical work experience	4.82	0.37	Very High	4.77	0.42	Very High
4.6 Teaching tasks	4.65	0.47	Very High	4.75	0.38	Very High
5. Measurement and Evaluation						
5.1 Pre-development assessment	4.64	0.36	Very High	4.84	0.41	Very High
5.2 Mid-development assessment	4.72	0.42	Very High	4.68	0.45	Very High
5.3 Post-development assessment	4.66	0.43	Very High	4.73	0.37	Very High
Total	4.72	0.42	Very High	4.75	0.40	Very High

From Table 33, it is pointed out that the plan to enhance the competency of Dual-Qualified teachers, including: 1) Principle, 2) Objective, 3) Content, 4) Development process, 5) measurement and evaluation, and the suitability is very high ( $\bar{x}=4.72$ ), the accuracy is very high ( $\bar{x}=4.78$ ). Experts on the feasibility of the scheme also rated it very high ( $\bar{x}=4.75$ ).

Based on the above data, the researcher summarized the following plan for enhancing the competencies of Double-Qualified teachers:







## PREFACE

This program is designed to enhance the competency of Double-Qualified teachers in local applied universities. Entitled "Program to Enhance the Double-Qualified Teachers Competency in Local Applied University," it aims to serve as a guide for strengthening the development of Double-Qualified teacher capabilities. The contents of this book are divided into two main parts: the part 1 is the introduction, which includes principles, objectives, content, development principles, as well as assessment and evaluation methods. The part 2 is the program to enhance the competency of Double-Qualified teachers in local applied universities, which will elaborate on each module, including Module 1: Proper Ethics, Module 2: Practical Ability, Module 3: Teaching Ability, Module 4: Reflection and Improvement, and Module 5: Teacher-Student Relationship. This includes a table for the development of Double-Qualified teacher capabilities and an evaluation table for development (before and after development).

This program aims to enhance the competency of Double-Qualified teachers in local applied universities. Interested individuals from schools or educational institutions can use it as a guideline for developing Double-Qualified teachers. This will help them improve their capabilities as Double-Qualified teachers, thus positively impacting the quality of education.

พูน ปณ ทิโต ชีเว  
Qing Luo

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## Principles

Dual-Qualified teachers play a crucial role in the national education development. They possess not only teaching skills but also in-depth knowledge and rich experience in their professional fields. By collaborating with students and other educators, Dual-Qualified teachers can provide more personalized and diverse learning experiences, fostering the comprehensive development of students. They can also serve as leaders in educational reform and innovation, promoting the improvement of educational quality and the continuous development of the education system. Therefore, cultivating and supporting Dual-Qualified teachers is of great significance to the development of the national education industry. This not only enhances the quality of education by providing richer teaching resources and innovative teaching methods to promote the comprehensive development of students, but also drives educational reform and the continuous improvement and development of the education system. Moreover, high-quality Dual-Qualified teacher teams can enhance the competitiveness of schools, attracting more outstanding students and parents to choose the school, thereby enhancing the reputation and status of the school. Most importantly, in the face of future social changes and challenges, improving the ability of Dual-Qualified teachers can make the education system more flexible and adaptable, cultivating more competitive and adaptable future talents. Therefore, enhancing the ability of Dual-Qualified teachers is not only about the professional development of individual teachers but also about the development of the entire education system and the progress of future society.

## Objectives

1. Enhance understanding of the principles of developing the capabilities of Dual-Qualified teachers in local applied universities.
2. Under the supervision of relevant educational administrators, cultivate the capabilities of Dual-Qualified teachers in local applied universities. This includes 5 areas: 1) Proper ethics, 2) Practical ability, 3) Teaching ability, 4) Reflection and

improvement, 5) Teacher-student relationship.

3. To ensure that the Dual-Qualified teachers receiving training improve their abilities and can apply the knowledge and experience gained in school work, thus producing a positive impact on the enhancement of educational quality.

### **Content**

To enhance the capabilities of Dual-Qualified teachers in local applied universities, the program comprises 5 modules, each outlining specific content domains.

#### **Topic 1: Proper Ethics: Module 1**

The content of this module focuses on enhancing teachers' ethical standards to achieve the goals or mission of the school. It includes qualities such as integrity, honesty, respect for others' privacy, adherence to laws, strong teamwork skills, and the ability to self-monitor and supervise others. This is achieved through Self-directed learning, Training, Learning from case studies, Brainstorming, Learning from practical work experience, and Teaching tasks.

#### **Topic 2: Practical Ability: Module 2**

The content of this module focuses on enhancing teachers' practical ability. It includes improving teachers' professional technical skills, enhancing teachers' problem-solving abilities, acquiring knowledge or skills through practical experience, proficiently using tools and equipment, and continuously improving through teaching feedback. This is achieved through self-directed learning, training, learning from case studies, brainstorming, learning from practical work experience, and teaching tasks.

#### **Topic 3: Teaching Ability: Module 3**

The focus of this module is to enhance teachers' pedagogical skills, encompassing the design of effective teaching activities, a comprehensive reservoir of instructional knowledge, proficient communication and interaction abilities, adept

classroom management techniques, as well as continuous learning and professional development. These objectives are accomplished through self-directed learning, training programs, analysis of case studies, collaborative brainstorming sessions, experiential learning from real-world scenarios and practical teaching assignments.

#### Topic 4: Reflection and Improvement: Module 4

The primary objective of this module is to augment educators' capacity for introspection and advancement. It encompasses the cultivation of self-awareness, perpetuated learning, vigilant self-assessment of personal development, adeptness in discernment and decision-making, identification of issues through systematic inquiry and analysis, and the ability to conduct thorough problem analysis from various angles. These objectives are realized through avenues such as self-directed learning, structured training sessions, deriving insights from case studies, collaborative brainstorming sessions, experiential learning from practical contexts, and pedagogical responsibilities.

#### Topic 5: Teacher-student Relationship: Module 5

The emphasis of this module lies in enhancing the Teacher-student relationship. It entails the ability to foster students' academic progress and development, provide a sense of calmness and reassurance to students facing psychological or emotional challenges, possess the interpersonal skills necessary for successful social communication and interaction, offer appropriate guidance and care to students in academic, emotional, and behavioral aspects. These objectives are achieved through avenues such as self-directed learning, structured training sessions, deriving insights from case studies, collaborative brainstorming sessions, experiential learning from practical contexts, and pedagogical responsibilities.

### **Development Process**

#### **1. Development Principles**

From studying and analyzing academic literature and documents, the concept of learning has been formulated according to the 70:20:10 model. This concept was introduced by Lawson (2008), and further elaborated upon by Phurivat Wannichawasin (2016), Sutham Thammathatsana (2019). It comprises three essential components of learning:

#### 1) 70% Learn by Experience

It pertains to a mode of learning derived from direct experiential engagement within authentic workplace settings or practical fieldwork. This avenue empowers educational administrators with the capacity to expeditiously acquire insightful understandings. The adept acquisition of knowledge from such experiences subsequently culminates in efficacious learning, as administrators internalize these experiences into their cognitive repertoire and behavioral repertoire, effectively serving as a conduit between practical application and theoretical frameworks. This methodological approach fosters the cultivation of novel experiential realms or proficiencies, thereby augmenting the efficacy of educational administrators' professional responsibilities. The tools employed for personnel development underpinned by this learning paradigm transcend conventional classroom-based instructional modalities.

#### 2) 20% Learn by Others

This represents a learning modality known as "Learn by Others," wherein individuals acquire knowledge and skills not exclusively through direct supervision or authority but rather from their peers within or across organizational units. This collaborative learning approach may unfold in informal or structured environments, fostering dialogues, consultations, and the exchange of information. Such interactions hinge upon robust interpersonal relationships, necessitating active engagement, coordinated discussions, and the sharing of perspectives at opportune junctures among multiple parties. The developmental tools deployed within this framework transcend conventional classroom-based training methodologies.

### 3) 10% Learn by Courses

It represents a blended learning approach that integrates traditional classroom instruction with non-classroom methods, incorporating diverse learning modalities including e-learning platforms and various instructional materials. This method entails accessing pre-designed programs or courses, which are deemed essential and indispensable for professional development. It stands as a significant developmental format, facilitating learners' active involvement in experiential learning and ensuring the genuine assimilation and application of acquired knowledge.

## 2. Methods/Development Activities

The methods to enhancing the ability of Double-Qualified teachers are as follows:

2.1 70% Learning from Experience utilizing a duration of 63 hours, employing the following development methods:

Self-directed learning, utilizing a duration of 19 hours.

- 1) Learning Teacher Ethical Standards (Module 1)
- 2) Simulate scenarios for practice and practice (Module 2)
- 3) Read education books and literature (Module 3)
- 4) Keep a teaching log (Module 4)
- 5) Learn communication skills (Module 5)

Learning from practical work experience, utilizing a duration of 24 hours.

- 1) Set the right professional example (Module 1)
- 2) Participate in practical projects (Module 2)
- 3) Seminars, workshops and other professional development activities (Module 3)



4) Evaluate teaching effect (Module 4)

5) Participate in student activities (Module 5)

Teaching tasks, utilizing a duration of 20 hours.

1) Learn from great teachers (Module 1)

2) Classroom observation activities of fellow teachers  
(Module 2 and Module 3)

3) Seeking feedback on teaching (Module 4)

4) Exchange activities between teachers and students  
(Module 5)

2.2 20% Learning by Others utilizing a duration of 18 hours, employing the following development methods:

Learning from case studies, utilizing a duration of 10 hours.

1) Technical skills exchange activities (Module 2)

2) Instructional design improvement activities (Module 3)

3) Excellent experience exchange activities (Module 4)

Brainstorming, utilizing a duration of 8 hours.

1) Innovation workshop (Module 1)

2) Team building activity (Module 5)

2.3 10% Learning by Courses utilizing a duration of 9 hours, employing the following development methods:

Training, utilizing a duration of 9 hours.

1) Teacher ethics training activities (Module 1)

2) Teachers' practical ability training activities (Module 2)



3) Teaching skills training activities for teachers (Module 3)

4) Teachers' reflective ability enhancement activities

(Module 4)

5) How to be a good friend of students Training activities

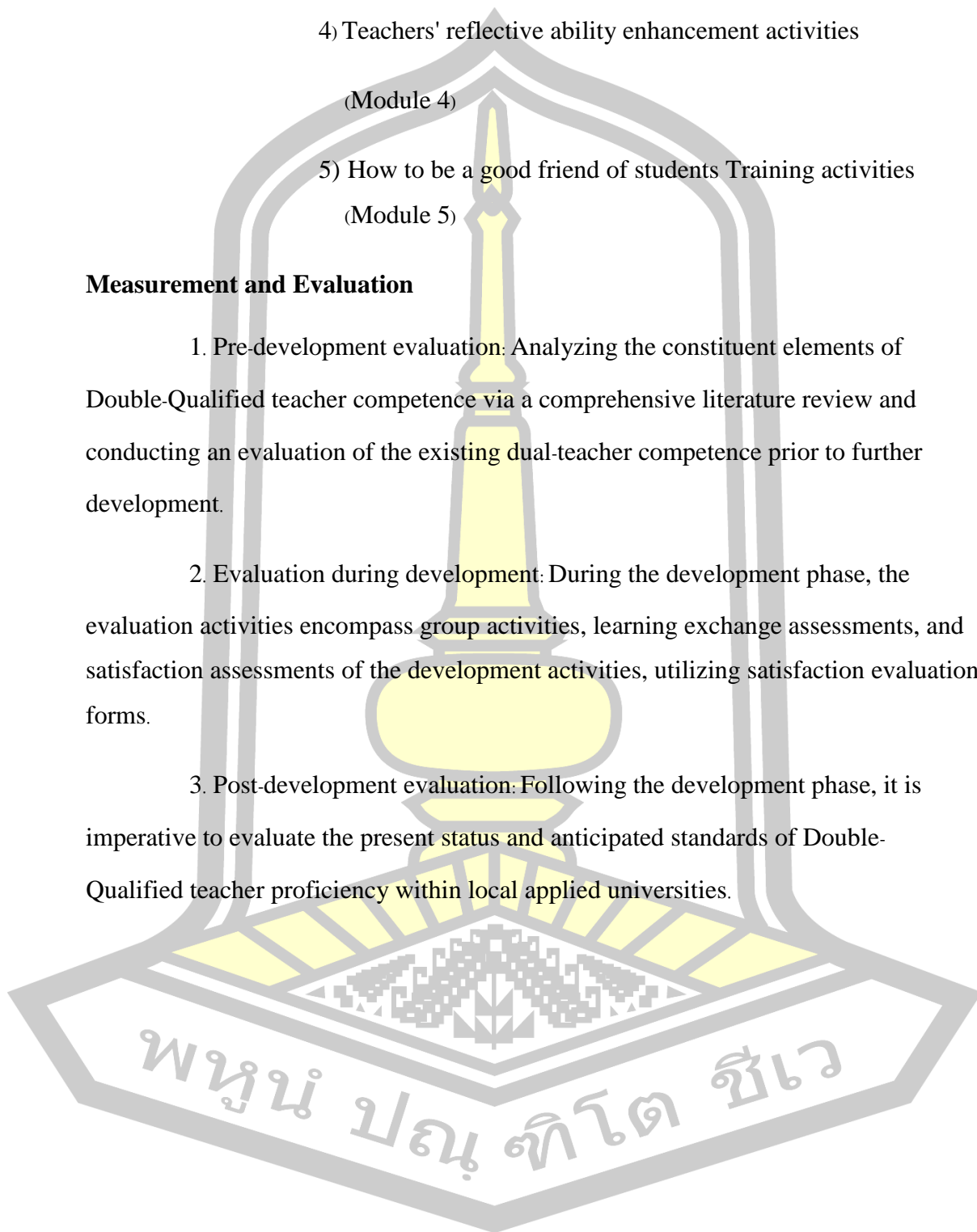
(Module 5)

### **Measurement and Evaluation**

1. Pre-development evaluation: Analyzing the constituent elements of Double-Qualified teacher competence via a comprehensive literature review and conducting an evaluation of the existing dual-teacher competence prior to further development.

2. Evaluation during development: During the development phase, the evaluation activities encompass group activities, learning exchange assessments, and satisfaction assessments of the development activities, utilizing satisfaction evaluation forms.

3. Post-development evaluation: Following the development phase, it is imperative to evaluate the present status and anticipated standards of Double-Qualified teacher proficiency within local applied universities.



## CHAPTER V

### CONCLUSION

Research on supplementary programs to enhance the Double-Qualified teacher competency in local applied university. Researchers summarize the research findings, discuss the results, and provide recommendations in the following order:

1. Research significance
2. Summary of findings
3. Discussion of results
4. Recommendations

#### **Significance of the research**

1. To investigate the constituent components and indicators of Double-Qualified teacher competence in local applied university.
2. To explore the existent condition, desired condition and need Assessment of Double-Qualified teacher competence in local applied university.
3. To design and evaluate the appropriate program to improve the competence of Double-Qualified teachers in local applied university.

#### **Summary of results**

**Phase 1:** To investigate the constituent components and indicators of Double-Qualified teacher competence in local applied university.

1. The enhancement of Double-Qualified teacher competence in local applied universities comprises 5 components: 1) Proper ethics, 2) Practical ability, 3) Teaching ability, 4) Reflection and improvement, and 5) Teacher-student relationship.

2. Indicators include

2.1 Proper ethics. It comprises 5 indicators, including 1) Integrity and honesty, 2) Supervision and self-supervision, 3) Abide by the law, 4) Privacy and respect, and 5) Good team work ability.

2.2 Practical ability. It comprises 5 indicators, including 1) Tool and Equipment Proficiency, 2) Technical Skills, 3) Hands-on Experience, 4) Problem-Solving, and 5) Supervision and self-supervision.

2.3 Teacher-student relationship. It comprises 5 indicators, including 1) Communication Skills, 2) Pedagogical Knowledge, 3) Classroom Management, 4) Continuous Learning, and 5) Teaching design.

2.4 Reflection and improvement. It comprises 5 indicators, including 1) Learning and growth, 2) Summary analysis, 3) Decision making, 4) Find the problem, and 5) Self-knowledge.

2.5 Teaching ability. It comprises 5 indicators, including 1) Behavioral Development, 2) Academic Growth, 3) Guidance, 4) Emotional Support, and 5) Social Skills.

This phase was conducted through checking components and indicators by Japers. Through the IOC test, all indicators of Teachers' Teaching competency in himalism Education Management are agreed by experts.

**Phase 2:** To explore the existent condition, desired condition and need Assessment of Double-Qualified teacher competence in local applied university.

The researchers concluded as follows: The existent condition of Double-Qualified teacher competency in local applied universities is generally at a medium level ( $\bar{x}=2.82$ ). However, they believe that the desired state of Double-Qualified teacher competency is at the highest level ( $\bar{x}=4.85$ ). The order of the perceived needs for enhancing Double-Qualified teacher competency is: 1) Proper ethics (PNI=0.80), 2)

Practical ability (PNI=0.76), 3) Teacher-student relationship (PNI=0.73), 4) Reflection and improvement (PNI=0.67), 5) Teaching ability (PNI=0.65).

**Phase 3:** Developing a program to enhance the Double-Qualified teacher competence in local applied universities.

The program to enhance the capacity of Double-Qualified teachers in local applied universities consists of 5 components, including 1) Principles, 2) Objectives, 3) Content, 4) Development Processes, and 5) Measurement and Evaluation. This is designed to strengthen the understanding of the principles underlying the capacity of Double-Qualified teachers in local applied universities. The program encompasses 5 aspects: 1) Proper ethics, 2) Practical ability, 3) Teaching ability, 4) Reflection and improvement, and 5) Teacher-student relationship. It involves the development of Double-Qualified teacher capacity through 5 modules: Module 1: Proper ethics, Module 2: Practical ability, Module 3: Teaching ability, Module 4: Reflection and improvement, Module 5: Teacher-student relationship. The development duration is 90 hours, with a development model of 70:20:10. The development methods are diverse, including 1) Self-directed learning, 2) Training, 3) Learning from case studies, 4) Brainstorming, 5) Learning from practical work experience, and 6) Teaching tasks. Assessment was conducted before and after development to evaluate the suitability and feasibility of the program for enhancing the development of Double-Qualified teacher capacity in local applied universities. Overall, the program is very suitability ( $\bar{x}=4.72$ ), very accuracy ( $\bar{x}=4.78$ ) at the same time, the feasibility is very high ( $\bar{x}=4.75$ ).

### **Discussion of Results**

Through research on the capacity of Double-Qualified teachers in local applied universities, researchers discussed the following findings:

#### **1. The composition and index of Double-Qualified teacher competence**

### **in local applied universities**

In the first stage, the research results show that there are 5 components of Double-Qualified teacher competence in local applied universities, including: 1) Proper ethics, 2) Practical ability, 3) Teaching ability, 4) Reflection and improvement, and 5) Teacher-student relationship.

### **2. The existent condition, desired condition, and need Assessment for enhancing the capacity of Double-Qualified teachers in local applied universities.**

The existent condition overall situation is at a moderate level ( $\bar{x}=2.82$ ). Through data analysis, it was found that all aspects are at a moderate level, with Teaching ability of Double-Qualified teacher capabilities in local applied universities at the highest level ( $\bar{x}=2.95$ ). Data analysis also revealed that expectations for various aspects of Double-Qualified teacher capabilities are at the highest level ( $\bar{x}=4.85$ ); therefore, there is room for development in the Double-Qualified teacher capabilities of local applied universities. When prioritized from highest to lowest, the order is as follows: 1) Proper ethics (PNI=0.80), 2) Practical ability (PNI=0.76), 3) Teacher-student relationship (PNI=0.73), 4) Reflection and improvement (PNI=0.67), 5) Teaching ability (PNI=0.65). Each component of Double-Qualified teacher capabilities has a similar level of improvement requirement. Consequently, the components of Double-Qualified teacher capabilities, including Proper ethics, Practical ability, Teacher-student relationship, Reflection and improvement, and Teaching ability, have similar levels of developmental needs. This may be due to participants, including teachers and school administrators, expressing that ethical standards of teachers are crucial in the process of cultivating Double-Qualified teacher capabilities in schools. These standards serve as the foundation for effective teaching and mentorship, fostering an environment of trust, integrity, and respect within the educational community. The commitment to ethical conduct not only shapes the character of educators but also influences the quality of instruction and the overall learning experience for students, which is related

to Practical ability, Reflection and improvement, and Teaching ability. It is essential to understand the characteristics of Double-Qualified teacher capabilities and adapt to changes effectively to achieve the school's cultivation goals. This is crucial, as the development of Double-Qualified teacher capabilities in universities consists with the research result of Zhao Yanyun's (2019) perspective on teacher ethics, which emphasizes that the ethical level of teachers directly relates to their effectiveness in teaching and mentoring. They stress that teachers should serve as role models for students, influencing their character and values through their words and actions. Consists with the research result of Li Zheng (2021) findings on the development of Double-Qualified teacher enhancement programs, which highlight the necessity of understanding the elements of Double-Qualified teacher capabilities. Consists with the research result of Li Zhongjing and Ni Xiaoli (2020) on applied university Double-Qualified teacher capabilities, the 5 main components of Double-Qualified teacher capabilities were explained: 1) Proper ethics, 2) Practical ability, 3) Teacher-student relationship, 4) Reflection and improvement, 5) Teaching ability. Overall, the capabilities of Double-Qualified teacher capabilities in local applied universities are at a relatively high level and positively correlated with the effectiveness of universities teaching quality.

### **3. Improve the ability of Double-Qualified teachers in local applied colleges and universities, design and evaluate the corresponding programs.**

The Double-Qualified teacher capabilities in local applied universities encompass 5 components: 1) Principles, 2) Objectives, 3) Content, 4) Development Process, and 5) Measurement and Evaluation. These components consist of 5 modules: Module 1: Proper ethics, Module 2: Practical ability, Module 3: Teaching ability, Module 4: Reflection and improvement, and Module 5: Teacher-student relationship. Module 5: Teacher-student relationship, aimed at fostering the relationship between teachers and students, exhibited the highest suitability, with an average suitability

score of 4.72. Based on the fundamental concepts of project development, this study concludes that the cultivation of Double-Qualified teacher capabilities in local applied universities aligns with project activities related to the development of teachers' knowledge, skills, competencies, and behaviors, Consists with the research result of Wang Zhiqiang and Xiong Shunshun (2021). According to the research findings, the program comprises 5 crucial components: Principles, Objectives, Content, Development Process, and Measurement and Evaluation. Furthermore, the program is Consists with the research result of Wang Guangming and Wei Qianping (2019), which identified key components of the plan, including basic concepts, principles, objectives, content, development methods, and evaluation. Consists with the research result of Li Xiaodong's (2019) research explored the development of dual-teacher enhancement programs, with components including introduction, objectives, principles, plan components, detailed plan content for each module, and assessment and evaluation methods. The research findings indicate that the Double-Qualified teacher capabilities in local applied universities are at a relatively high level, with high satisfaction among administrators regarding the program.

## **Recommendations**

### **1. Recommendations on implementing research findings.**

1.1 Strengthen Comprehensive Competency Enhancement: The research results indicate that the adaptability of Double-Qualified teachers in local applied universities is generally at a medium level. The overall suitability of the Double-Qualified teacher adaptation project has achieved a high level ( $\bar{x}=4.72$ ). Therefore, university administrators need to comprehensively enhance the competencies of Double-Qualified teachers across various domains, including ethical standards, practical abilities, teaching skills, reflection and improvement, and teacher-student relationships. Universities should develop tailored enhancement plans based on the



specific needs in these areas to ensure that Double-Qualified teachers can continuously improve their professional qualities in practice.

**1.2 Effectively Utilize Highly Suitable Enhancement Projects:** The project demonstrates high suitability in terms of principles, objectives, content, development processes, and evaluation methods. University administrators should fully utilize these enhancement plans to effectively improve the overall capabilities of Double-Qualified teachers. This includes regularly evaluating the implementation effects of the project, and promptly adjusting the project content and methods to adapt to the changing educational needs and environment.

**1.3 Consider Diverse Domain Needs:** During implementation, universities should consider the diverse needs of Double-Qualified teachers in various domains. Specific enhancement measures should be developed for areas such as ethical standards, practical abilities, teaching skills, reflection and improvement, and teacher-student relationships, and integrated into teachers' career development plans to ensure balanced development across all aspects.

**1.4 Ongoing Tracking and Evaluation:** Universities should conduct ongoing tracking and evaluation throughout the implementation of competency enhancement projects. This includes regularly collecting feedback, assessing the effectiveness of competency improvements, and making necessary adjustments and improvements based on evaluation results. Continuous optimization of project implementation strategies will ensure the sustained enhancement of Double-Qualified teachers' competencies and the long-term success of the project.

**1.5 Promote Inter-University Collaboration and Experience Sharing:** Encourage collaboration and experience sharing among different universities, especially regarding the enhancement of Double-Qualified teachers' competencies. Through and cooperation, universities can leverage successful experiences and practices from other institutions, collectively advancing the development of Double-



Qualified teachers and providing valuable references and support for a wide range of universities.

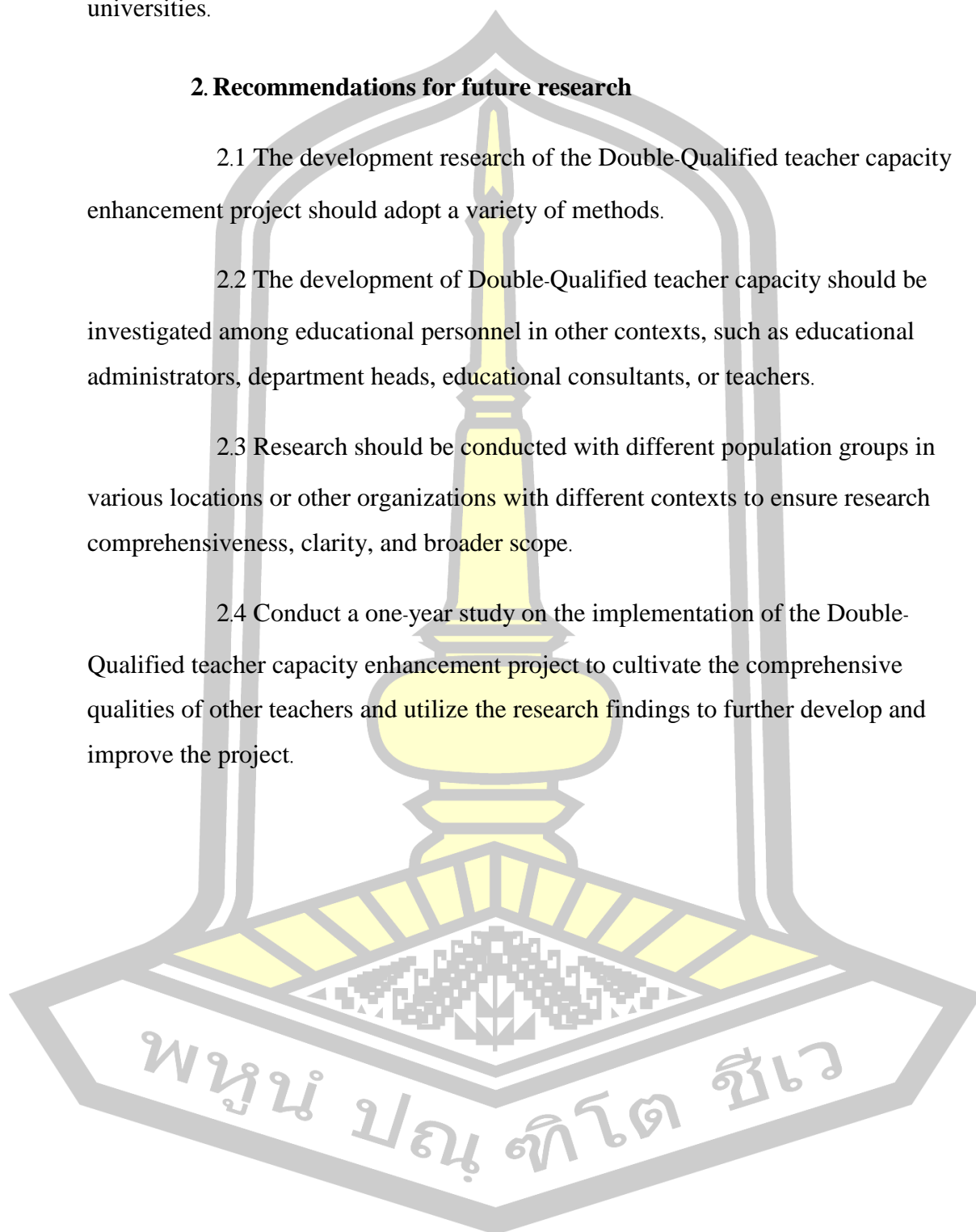
## **2. Recommendations for future research**

2.1 The development research of the Double-Qualified teacher capacity enhancement project should adopt a variety of methods.

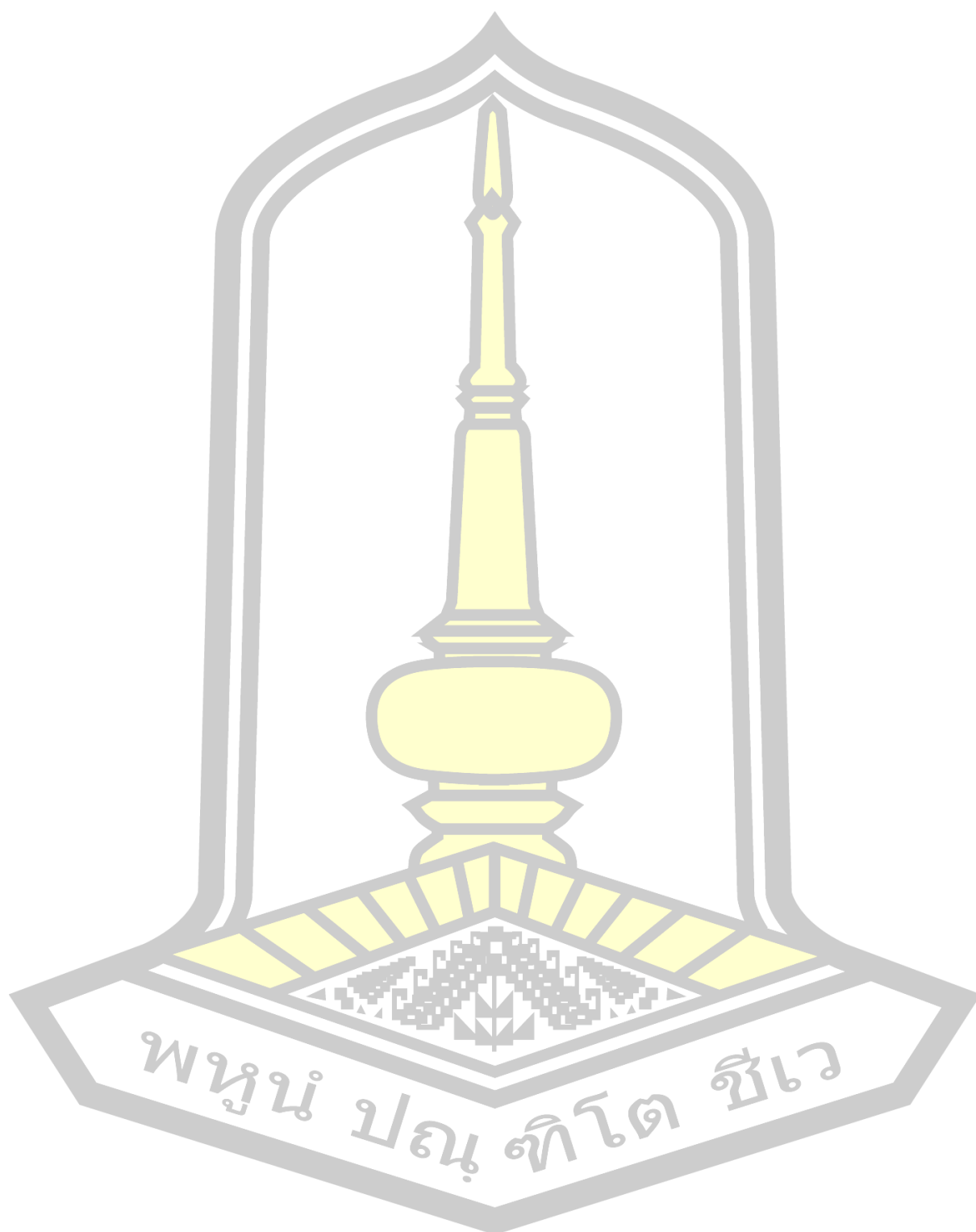
2.2 The development of Double-Qualified teacher capacity should be investigated among educational personnel in other contexts, such as educational administrators, department heads, educational consultants, or teachers.

2.3 Research should be conducted with different population groups in various locations or other organizations with different contexts to ensure research comprehensiveness, clarity, and broader scope.

2.4 Conduct a one-year study on the implementation of the Double-Qualified teacher capacity enhancement project to cultivate the comprehensive qualities of other teachers and utilize the research findings to further develop and improve the project.



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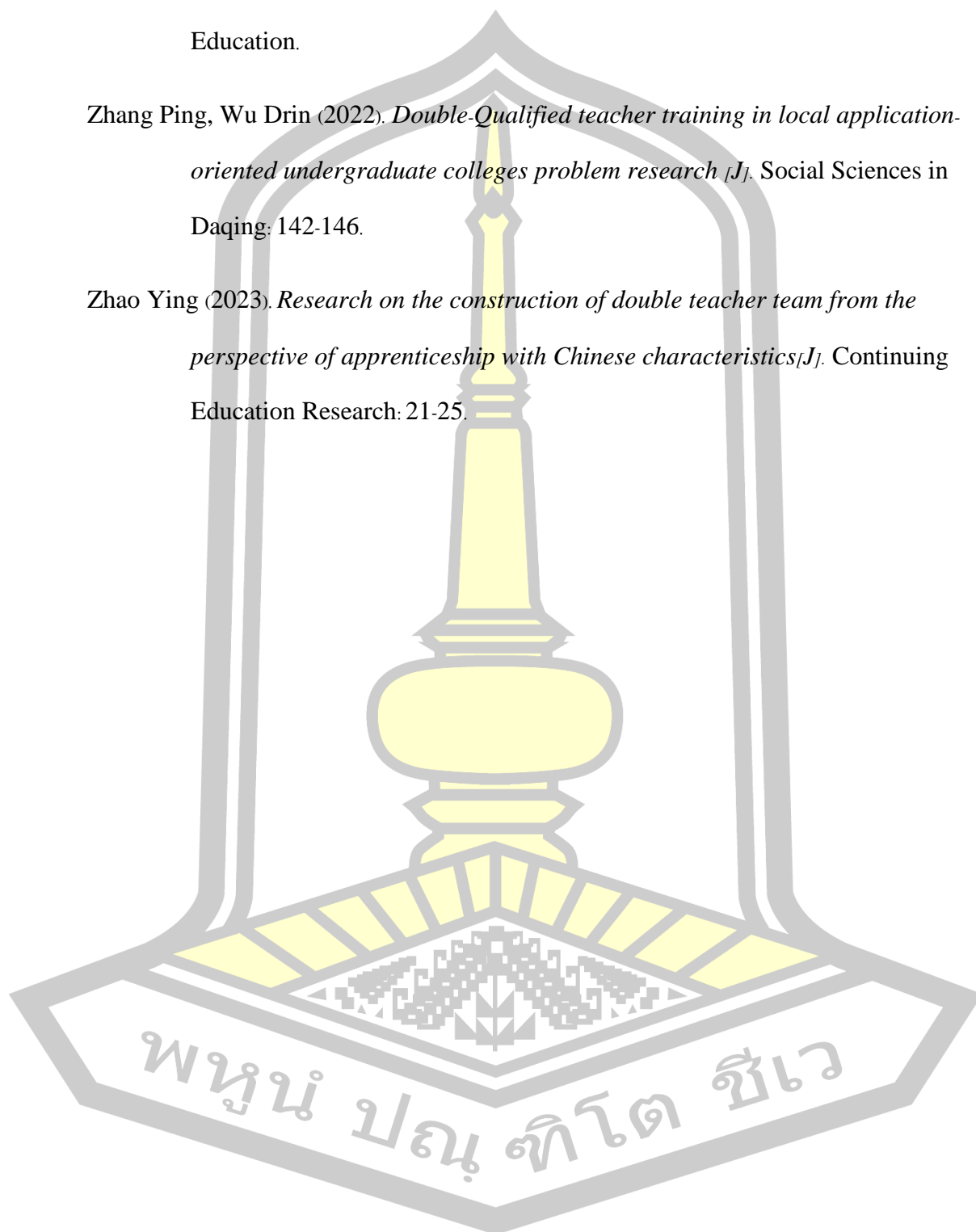
Z. Aljuzayri (2021), *"The Relationship Between U.S. High School Science Teacher's*

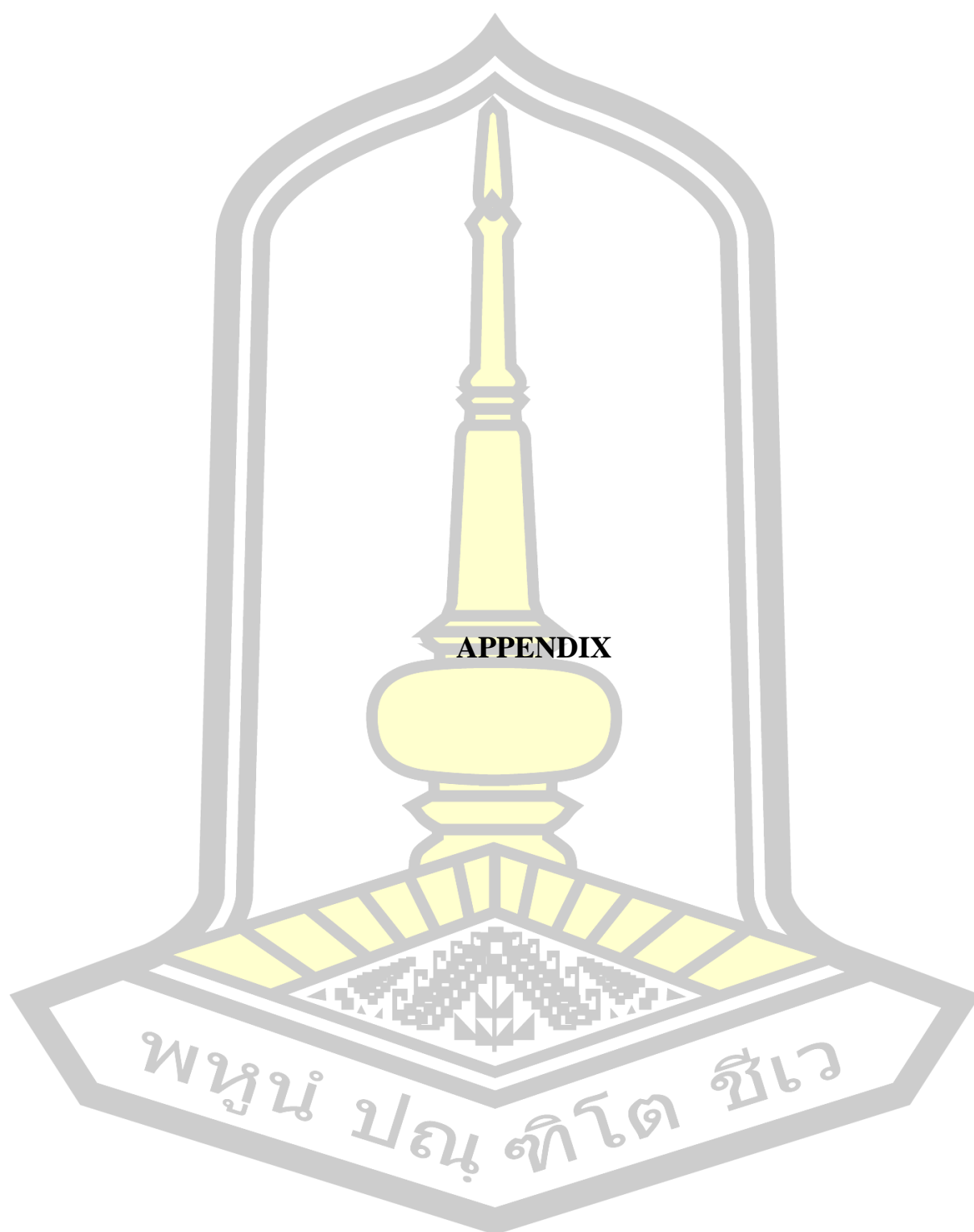
*Self-Efficacy, Professional Development, and Use of Technology in*

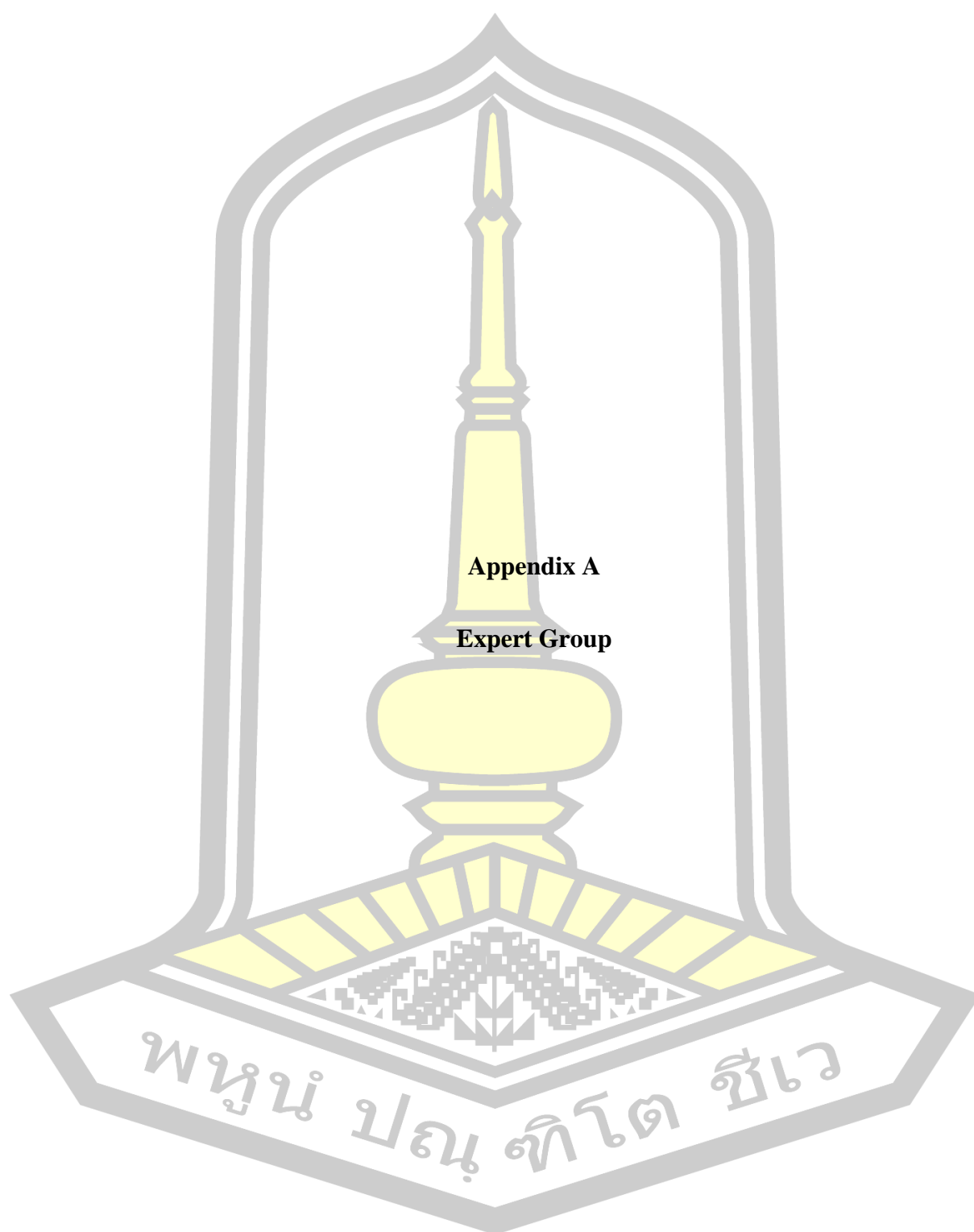
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**Group 1:** The components and indicators are tested by experts and the effectiveness of each component and indicator is tested by the project Consistency Index.

- 1) Assoc. Prof. Dr. Pacharawit Chansirisira, Department of Educational Administration, Faculty of Education, Mahasarakham University
- 2) Assoc. Prof. Dr. Suwat Julsuwan, Department of Educational Administration, Faculty of Education, Mahasarakham University
- 3) Prof. Dr. Liu Fang, Vice President, Guangxi Baise University, China
- 4) Prof. Dr. Cao Alin, Director of Teaching Management, Baise University, Guangxi, China
- 5) Asst. Prof. Dr. Wang Fang, Director of Faculty Development Center, Guangxi Baise University, China

**Group 2:** Experts review research and development tools to give their opinion on the consistency of the problem

- 1) Prof. Dr. Liu Fang, Vice President, Guangxi Baise University, China
- 2) Prof. Dr. Jiang Hongxing, Vice President, Hezhou University, Guangxi, China
- 3) Prof. Dr. Zhou Dingbo, Vice President, Science and technology Normal University, Guangxi, China
- 4) Prof. Dr. Cao Alin, Director of Teaching Management, Baise University, Guangxi, China
- 5) Asst. Prof. Dr. Wang Fang, Director, Faculty Development Center, Baise University, Guangxi, China

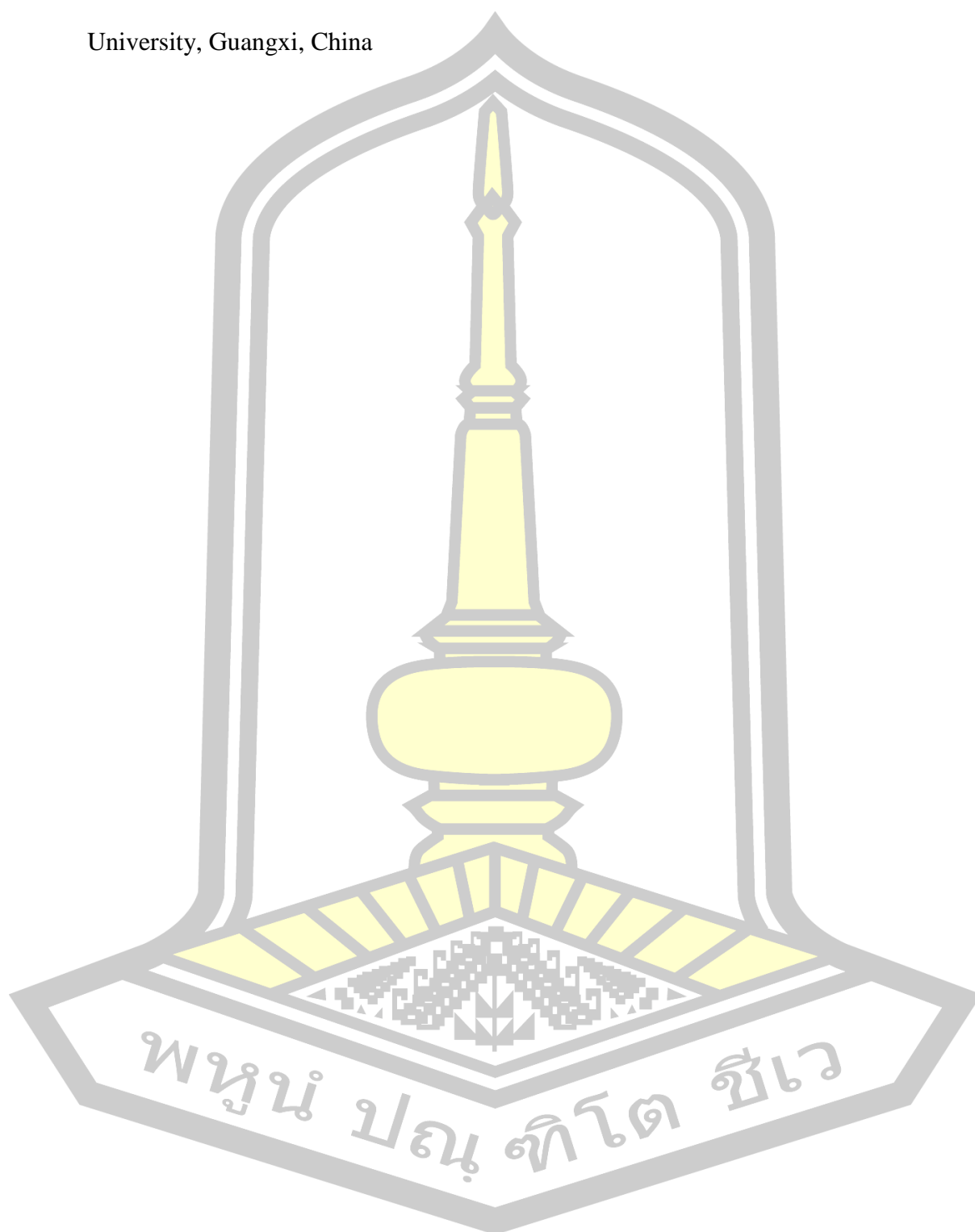
**Group 3:** Experts review the procedures of the research program and give their opinion on the consistency of the problem

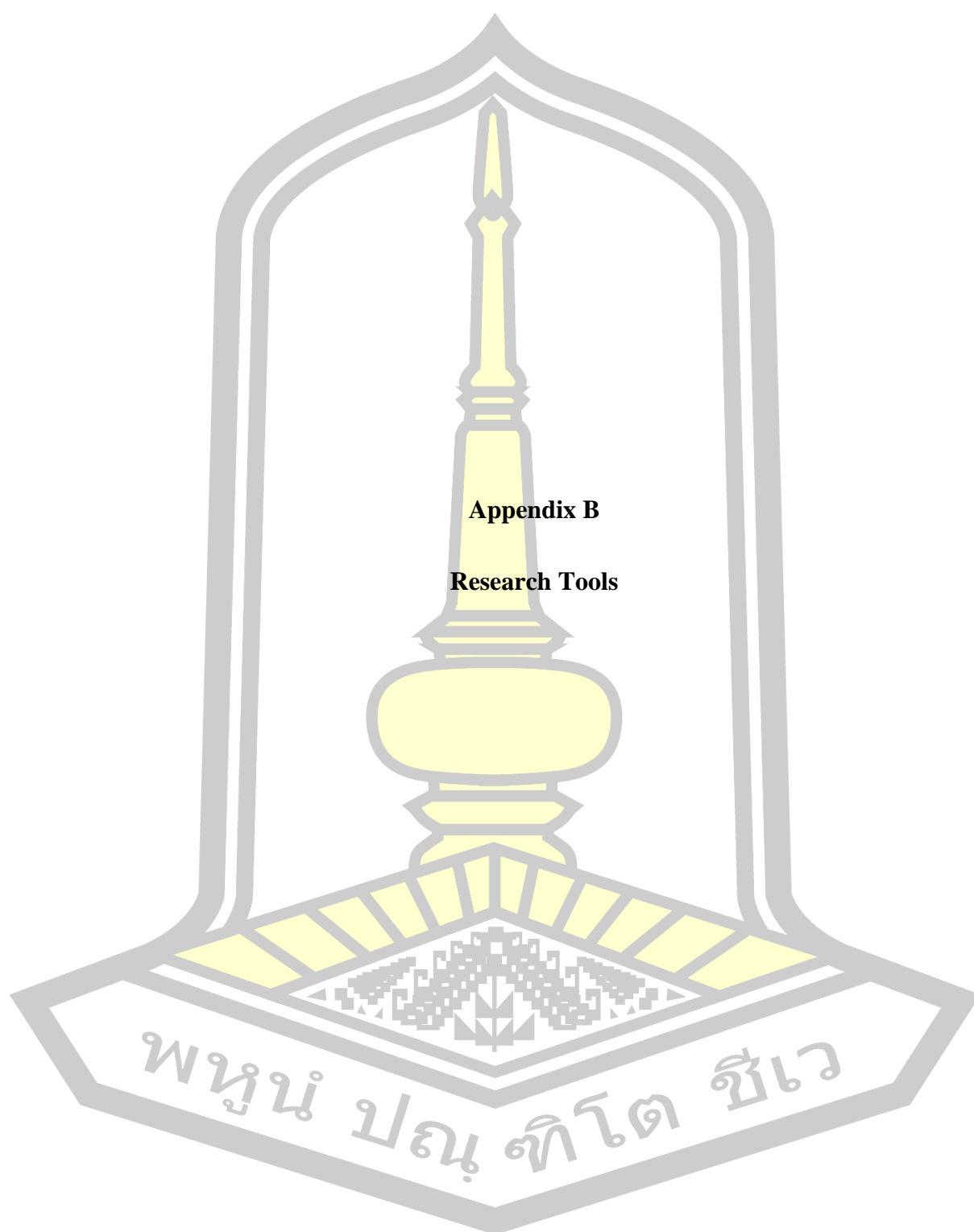
- 1) Prof. Dr. Liu Fang, Vice President, Guangxi Baise University, China
- 2) Prof. Dr. Cao Alin, Director of Teaching Management, Baise University, Guangxi, China
- 3) Asst. Prof. Dr. Wang Fang, Director, Faculty Development Center, Baise University, Guangxi, China
- 4) Asst. Prof. Dr. Wen Fengping, Dean of the College, Civil Engineering and Architecture, Baise University, Guangxi, China
- 5) Asst. Prof. Dr. Yang Wengui, Dean of the College, Faculty of teacher education, Baise University, Guangxi, China

**Group 4:** Experts assess the suitability, accuracy and feasibility of the project to enhance the dual qualification

- 1) Prof. Dr. Liu Fang, Vice President, Guangxi Baise University, China
- 2) Prof. Dr. Cao Alin, Director of Teaching Management, Baise University, Guangxi, China
- 3) Prof. Dr. Wu Xianyong, Dean of the College, Faculty of International exchange, Baise University, Guangxi, China
- 4) Prof. Dr. Huang Jianxiong, Dean of the College, Faculty of Continuing education, Baise University, Guangxi, China

5) Asst. Prof. Dr. Wang Fang, Director, Faculty Development Center, Baise University, Guangxi, China





## **Appendix B**

### **Research Tools**



## Assessment Form for Content Validity in Research:

### Local Applied Universities Double-Qualified Teachers Competency Adjustment Program

---

#### Instruction

1. The components of Double-Qualified teacher competency reflected in this tool are derived from scholars with diverse academic backgrounds, offering perspectives, concepts, and theories on Double-Qualified teacher abilities.

2. Please consider the consistency between each question and the defined criteria, which serve as guidelines for scoring.

4.51-5.00 When you determine that the question conformance with the definition is very high

3.51-4.50 When you determine that the question conformance with the definition is high

2.51-3.50 When you determine that the question conformance with the definition is medium

1.51-2.50 When you determine that the question conformance with the definition is low

1.00-1.50 When you determine that the question conformance with the definition is very low

3. In cases where you believe that a question should be improved or modified in terms of language usage, please provide suggestions in the right-hand column of that specific question item. Alternatively, if you have any additional suggestions, please specify in the assessment form.

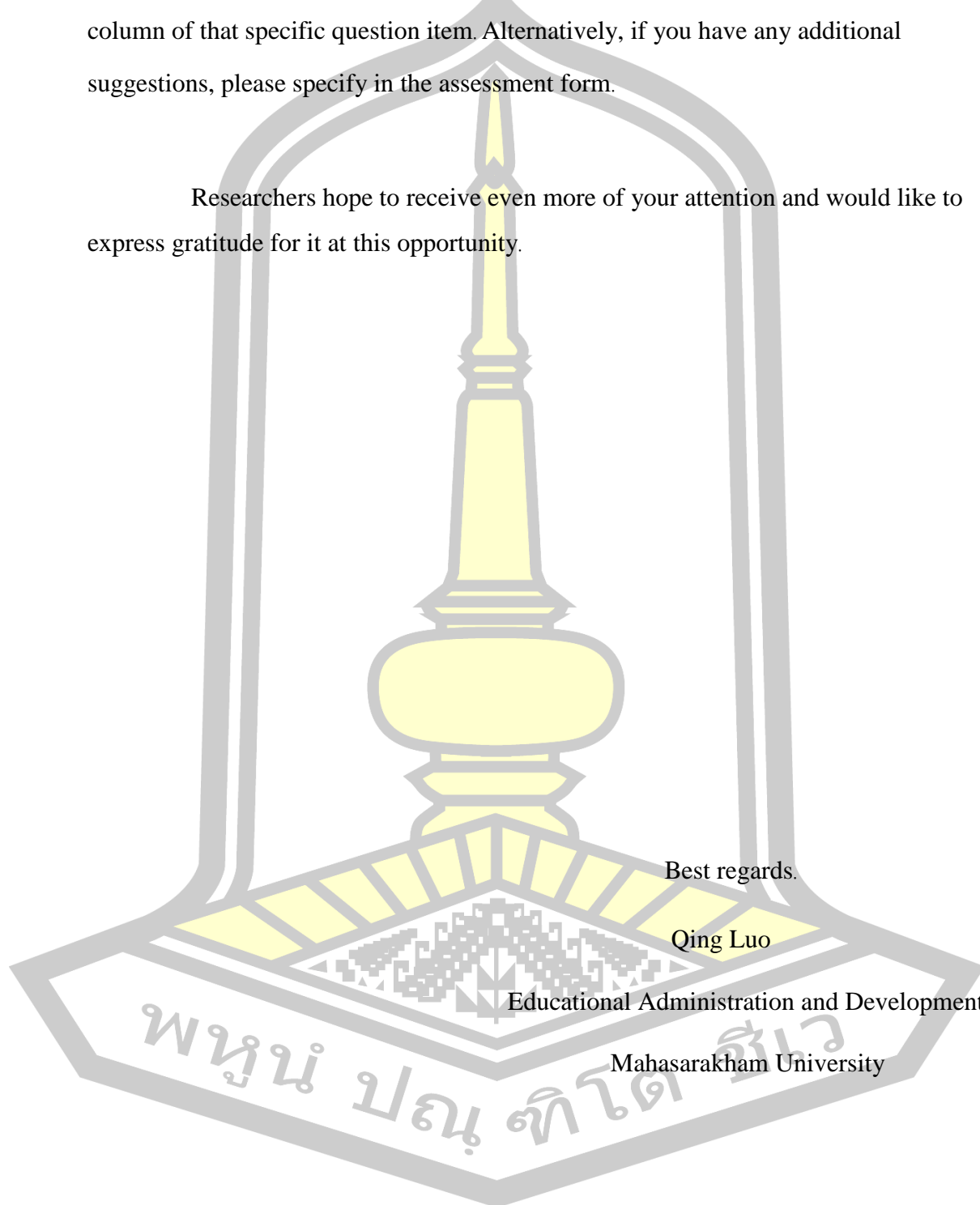
Researchers hope to receive even more of your attention and would like to express gratitude for it at this opportunity.

Best regards.

Qing Luo

Educational Administration and Development

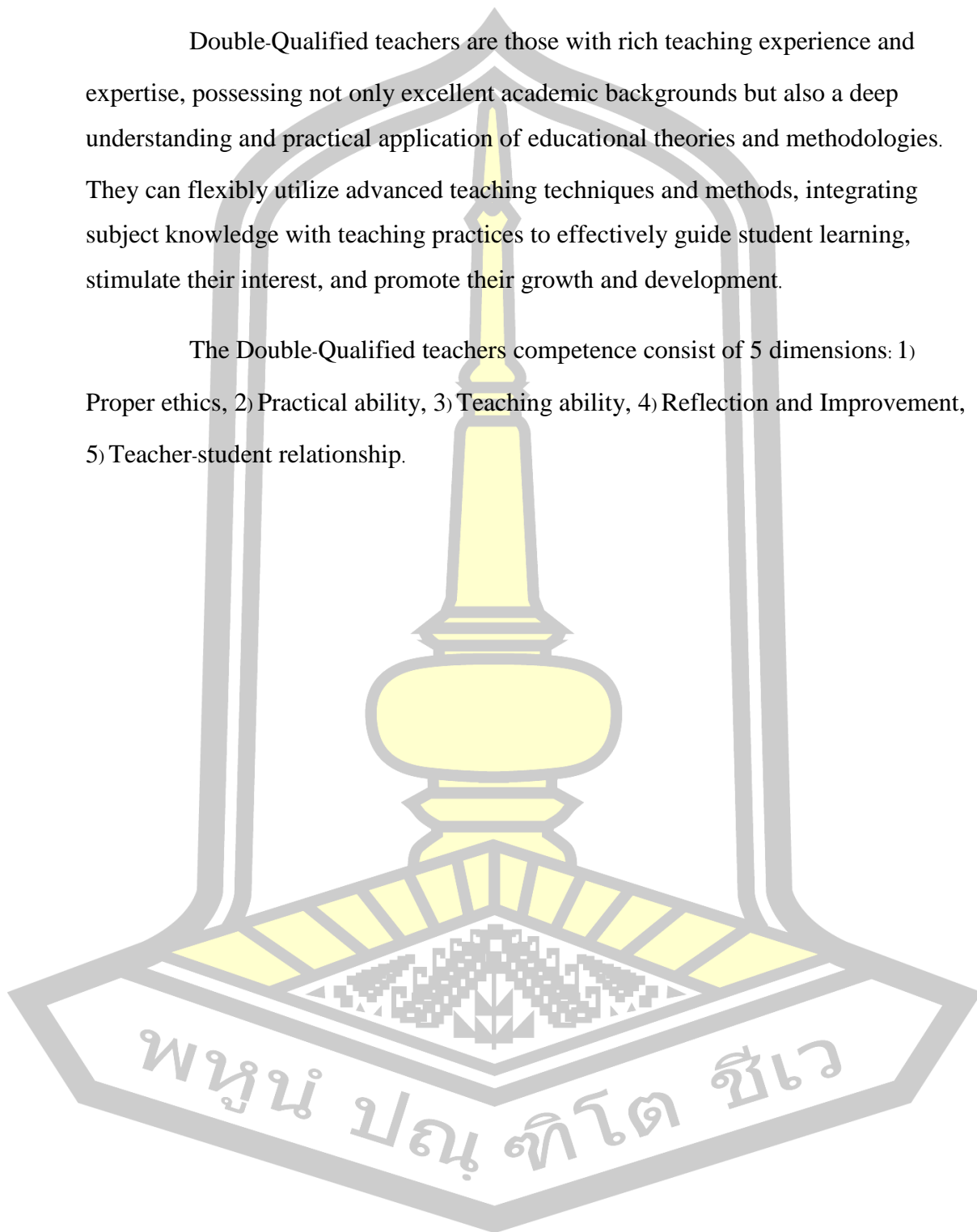
Maharakham University



## Double-Qualified teachers

Double-Qualified teachers are those with rich teaching experience and expertise, possessing not only excellent academic backgrounds but also a deep understanding and practical application of educational theories and methodologies. They can flexibly utilize advanced teaching techniques and methods, integrating subject knowledge with teaching practices to effectively guide student learning, stimulate their interest, and promote their growth and development.

The Double-Qualified teachers competence consist of 5 dimensions: 1) Proper ethics, 2) Practical ability, 3) Teaching ability, 4) Reflection and Improvement, 5) Teacher-student relationship.



### Component 1: Proper Ethics

The Proper Ethics of teachers is the code of conduct and necessary moral quality that teachers follow in their educational work. It includes not only the norms and standards that teachers should follow in their professional activities, but also the beliefs and pursuits that teachers should hold for the cause of education. The Ethics of teachers include respect for students, educational faith, professionalism, honesty and trustworthiness, fairness and incorruptibility, leading by example and cooperative spirit.

Items	Existent condition and Desired condition	Level of Indicator					Recommendation
		5	4	3	2	1	
1	Teachers need to have the qualities of integrity and honesty						
2	Teachers should respect others' privacy						
3	In any circumstance, it is necessary to abide by the law						
4	Teachers should have good teamwork skills						
5	Teachers should learn self-monitoring and also supervise others						

**Component 2: Practical ability**

Practical ability refers to the capacity to apply knowledge and skills to real-world situations or tasks effectively. It goes beyond theoretical understanding and encompasses the hands-on skills and competencies needed to perform specific activities or solve particular problems. Practical ability is often developed through hands-on experience, training, and practice.

Items	Existent condition and Desired condition	Level of Indicator					Recommendation
		5	4	3	2	1	
1	Teachers should have more professional technical skills						
2	Teachers should have problem-solving abilities						
3	Teachers should have knowledge or skills acquired through practical experience						
4	Teachers should be proficient in using tools and equipment						
5	Continuously improve through teaching feedback						

พหุ ประถมศึกษา

**Component 3: Teaching ability**

Teaching ability refers to the set of skills, knowledge, and attributes that enable an individual to effectively facilitate learning and impart knowledge or skills to others. It encompasses a wide range of competencies that go beyond just subject matter expertise.

Items	Existent condition and Desired condition	Level of Indicator					Recommendation
		5	4	3	2	1	
1	Systematic, organized, and targeted design of teaching activities						
2	Have a rich reserve of teaching knowledge						
3	Having good abilities and skills in communication and interaction						
4	Teachers should create a positive learning environment and maintain good classroom discipline						
5	Continuously learn and improve one's own knowledge and skills						

#### Component 4: Reflection and improvement

Reflection is the process of introspection, analyzing, and evaluating experiences, decisions, and actions. It's about looking back and understanding the reasons behind certain actions and their outcomes. Improvement refers to the process of becoming better, enhancing skills, knowledge, behaviors, or processes.

Items	Existent condition and Desired condition	Level of Indicator					Recommendation
		5	4	3	2	1	
1	Teachers should have a clear understanding of themselves						
2	To continuously learn and consistently monitor one's own growth						
3	Have good judgment and decision-making abilities						
4	Identify the problem through investigation, analysis, etc						
5	Capable of analyzing problems comprehensively from multiple perspectives						

**Component 5: Teacher-student relationship**

The teacher-student relationship is a foundational element in the educational process and plays a crucial role in shaping a student's academic and personal development. This relationship is multifaceted and can influence not only academic achievement but also the emotional and social growth of students.

Items	Existent condition and Desired condition	Level of Indicator					Recommendation
		5	4	3	2	1	
1	Being able to care about students' academic progress and development						
2	Having the ability to make students with mental health or emotional issues feel calmer and less worried						
3	Having the personal skills necessary for successful social communication and interaction						
4	Provide students with correct guidance in academic, emotional, and other aspects						
5	Concerned about students' behavioral development						

Signature.....(Evaluator)



## Research Questionnaire

### Program to Enhance the Double-Qualified Teachers Competency in Local Applied University

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#### Instructions

This questionnaire aims to investigate the Existent condition and Desired condition of the Double-Qualified Teachers Competency in Local Applied University. The researcher kindly requests your participation in responding to this questionnaire to contribute essential data for the research. The questionnaire is divided into two sections.

#### Part 1: General Information of Respondents

#### Part 2: Inquire about opinions on the Existent condition and Desired condition of the Double-Qualified teacher competency.

The responses are rated on a 5-point scale.

4.51 - 5.00 refers to the level of the Existent condition and Desired condition of Double-Qualified teacher competency in Local Applied University is very high.

3.51 - 4.50 refers to the level of the Existent condition and Desired condition of Double-Qualified teacher competency in Local Applied University is high.

2.51 - 3.50 refers to the level of the Existent condition and Desired condition of Double-Qualified teacher competency in Local Applied University is medium.

1.51 - 2.50 refers to the level of the Existent condition and Desired condition of Double-Qualified teacher competency in Local Applied University is low.

1.00 - 1.50 refers to the level of the Existent condition and Desired condition of Double-Qualified teacher competency in Local Applied University is very low.

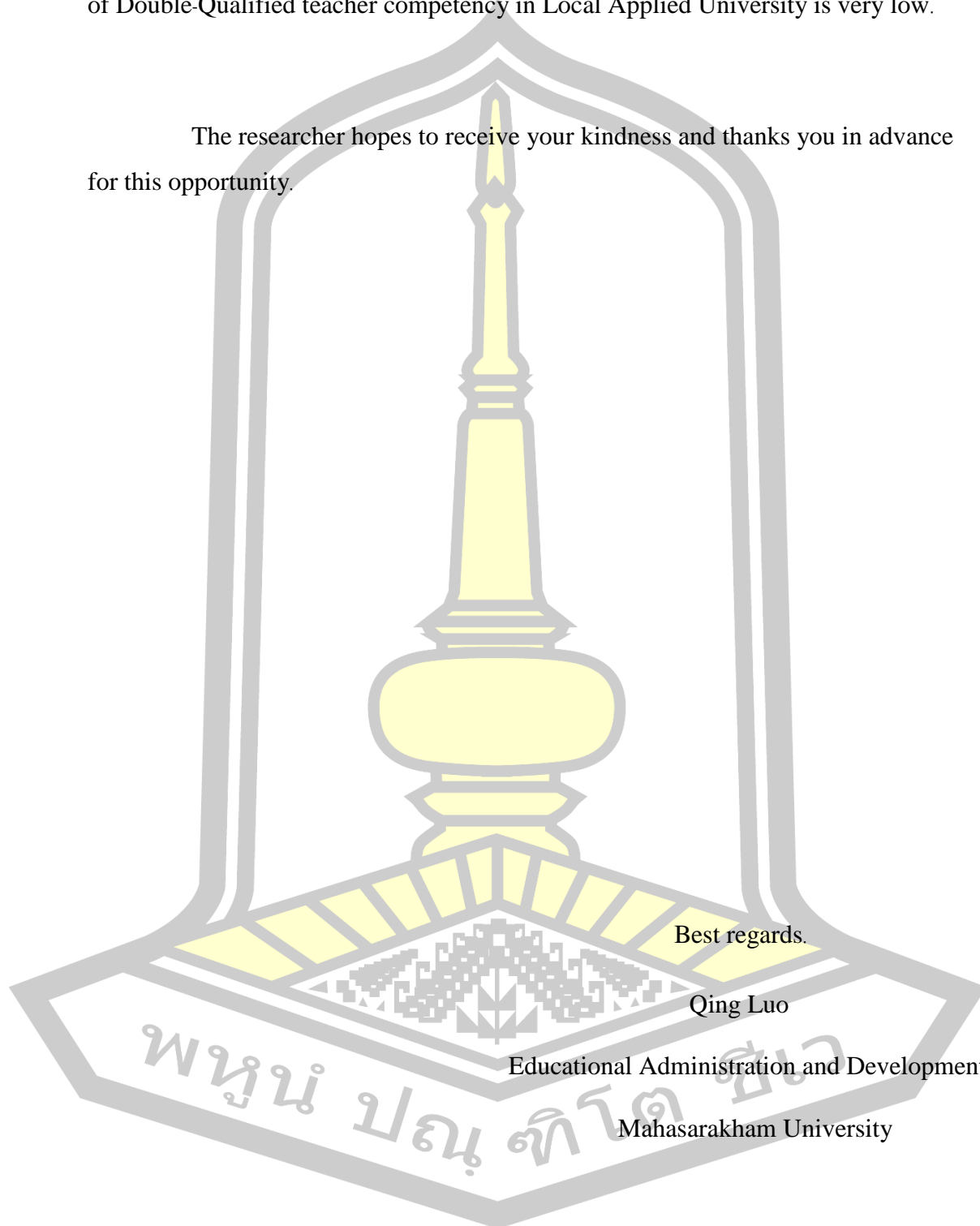
The researcher hopes to receive your kindness and thanks you in advance for this opportunity.

Best regards.

Qing Luo

Educational Administration and Development

Maharakham University



### Part 1: General Information of Respondents

1. What is your gender? ☐ Male ☐ Female

2. What is your identity?

☐ School leader ☐ Professor

☐ Associate professor ☐ Assistant professor

3. What is your existent condition Age Group?

☐ Under 25 years old ☐ 25 - 35 years old

☐ 36 - 45 years old ☐ 46 - 55 years old

☐ Over 55 years old

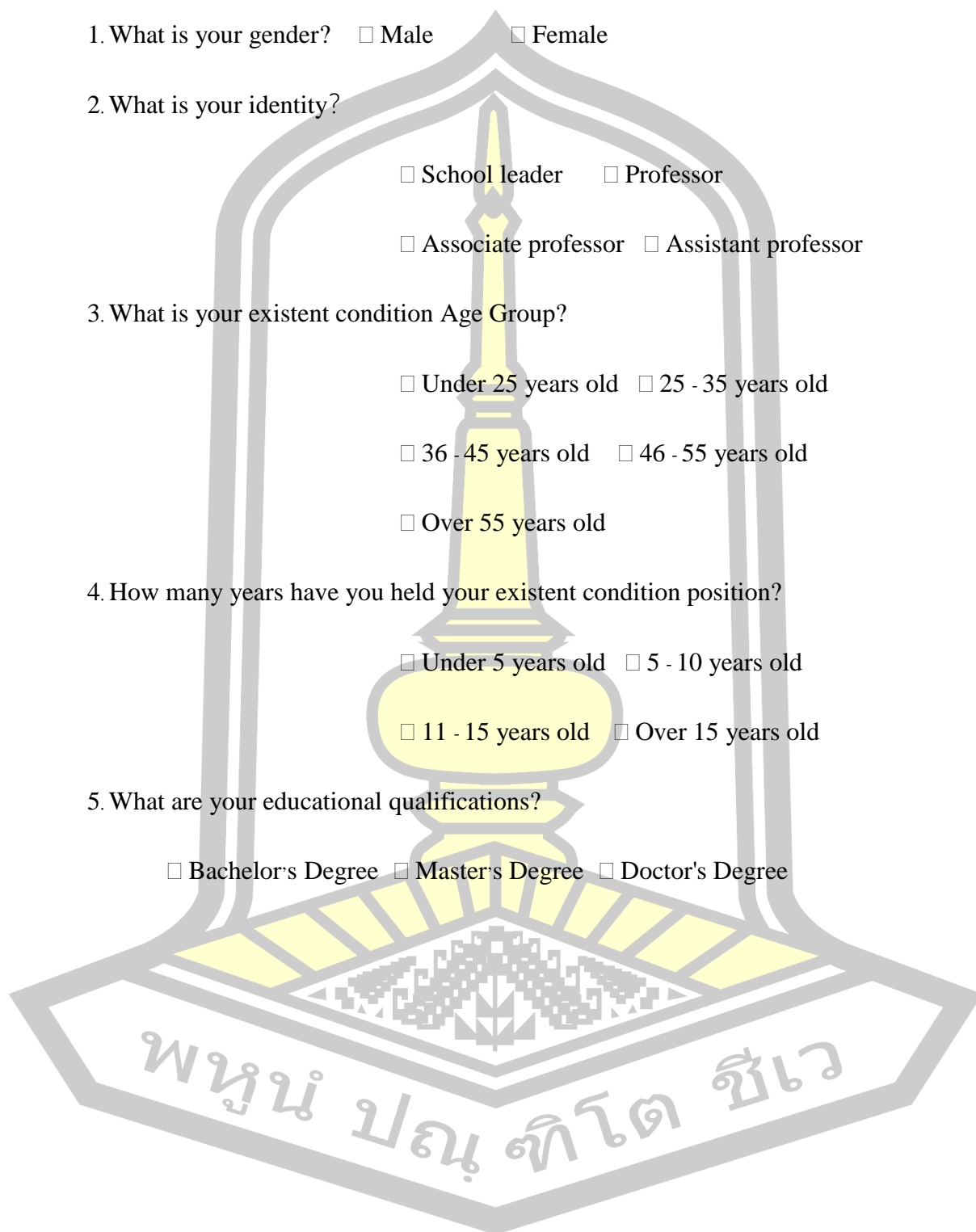
4. How many years have you held your existent condition position?

☐ Under 5 years old ☐ 5 - 10 years old

☐ 11 - 15 years old ☐ Over 15 years old

5. What are your educational qualifications?

☐ Bachelor's Degree ☐ Master's Degree ☐ Doctor's Degree



**Part 2: Inquire about opinions on the Existent condition and Desired condition of the Double-Qualified teacher competency. The responses are rated on a 5-point scale.**

Instructions: Please answer each question and statement regarding the characteristics of Double-Qualified teachers. Also, indicate with a checkmark (☐) in the column for the Existent condition and Desired condition.



Existent condition competency level					Components of Double-Qualified teachers	Desired condition competency level				
5	4	3	2	1		5	4	3	2	1
1. Proper ethics										
					1.Teachers need to have the qualities of integrity and honesty					
					2.Teachers should respect others' privacy					
					3.In any circumstance, it is necessary to abide by the law					
					4.Teachers should have good teamwork skills					
					5.Teachers should learn self-monitoring and also supervise others					
2. Practical ability										
					6.Teachers should have more professional technical skills					
					7.Teachers should have problem-solving abilities					
					8.Teachers should have knowledge or skills acquired through practical experience					
					9.Teachers should be proficient in using tools and equipment					
					10.Continuously improve through teaching feedback					

Existent condition competency level					Components of Double-Qualified teachers	Desired condition competency level				
5	4	3	2	1		5	4	3	2	1
3. Teaching ability										
					11.Systematic, organized, and targeted design of teaching activities					
					12.Have a rich reserve of teaching knowledge					
					13.Having good abilities and skills in communication and interaction					
					14.Teachers should create a positive learning environment and maintain good classroom discipline					
					15.Continuously learn and improve one's own knowledge and skills					
4. Reflection and improvement										
					16.Teachers should have a clear understanding of themselves					
					17.To continuously learn and consistently monitor one's own growth					
					18.Have good judgment and decision-making abilities					
					19.Identify the problem through investigation, analysis, etc					

Existent condition competency level					Components of Double-Qualified teachers	Desired condition competency level				
5	4	3	2	1		5	4	3	2	1
					20.Capable of analyzing problems comprehensively from multiple perspectives					
5. Teacher-student relationship										
					21.Being able to care about students' academic progress and development					
					22.Having the ability to make students with mental health or emotional issues feel calmer and less worried					
					23.Having the personal skills necessary for successful social communication and interaction					
					24.Provide students with correct guidance in academic, emotional, and other aspects					
					25.Concerned about students' behavioral development					



## Research Proposal

### Program to Enhance the Double-Qualified Teachers Competency in Local Applied University

---

#### Instructions

1. The purpose of this questionnaire is to solicit the opinions of education administrators and school administrators on the best practices for improving the competence of Double-Qualified teachers in local applied universities.
2. The information gathered from this questionnaire will be used to develop a program for enhancing the Double-Qualified teacher competency in local applied university.
3. This questionnaire is divided into 2 parts as follows:
  - Part 1: General information of the respondents.
  - Part 2: Questionnaire items.

The researcher hopes to receive your kindness and thanks you in advance for this opportunity.

Best regards.

Qing Luo

Educational Administration and Development

Maharakham University



**Part 1: General information of the respondents.**

Name of the respondent: ..... Title: .....

Location of the interview: .....

Date of the interview: .....

Interviewer: .....

**Part 2: Questionnaire items.**

How to enhance the competency of Double-Qualified Teachers in local applied universities?

1. What principles should guide the competency development of Double-Qualified Teachers in local applied universities?

.....

.....

.....

.....

.....

2. What is the objectives of enhance the competence of Double-Qualified teachers in local applied universities?

.....

.....

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3. What activity can be used to enhance the competence of Double-Qualified Teachers in local applied universities, and what time frame should be used to develop this skill?

.....

.....

.....

.....

.....

4. What component in the project to cultivate the competency of Double-Qualified Teachers in local applied universities?

.....

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5. Do you agree to adopt a 70:20:10 learning model to enhance the capacity of Double-Qualified teachers in local applied universities, and what principles should be followed?

.....

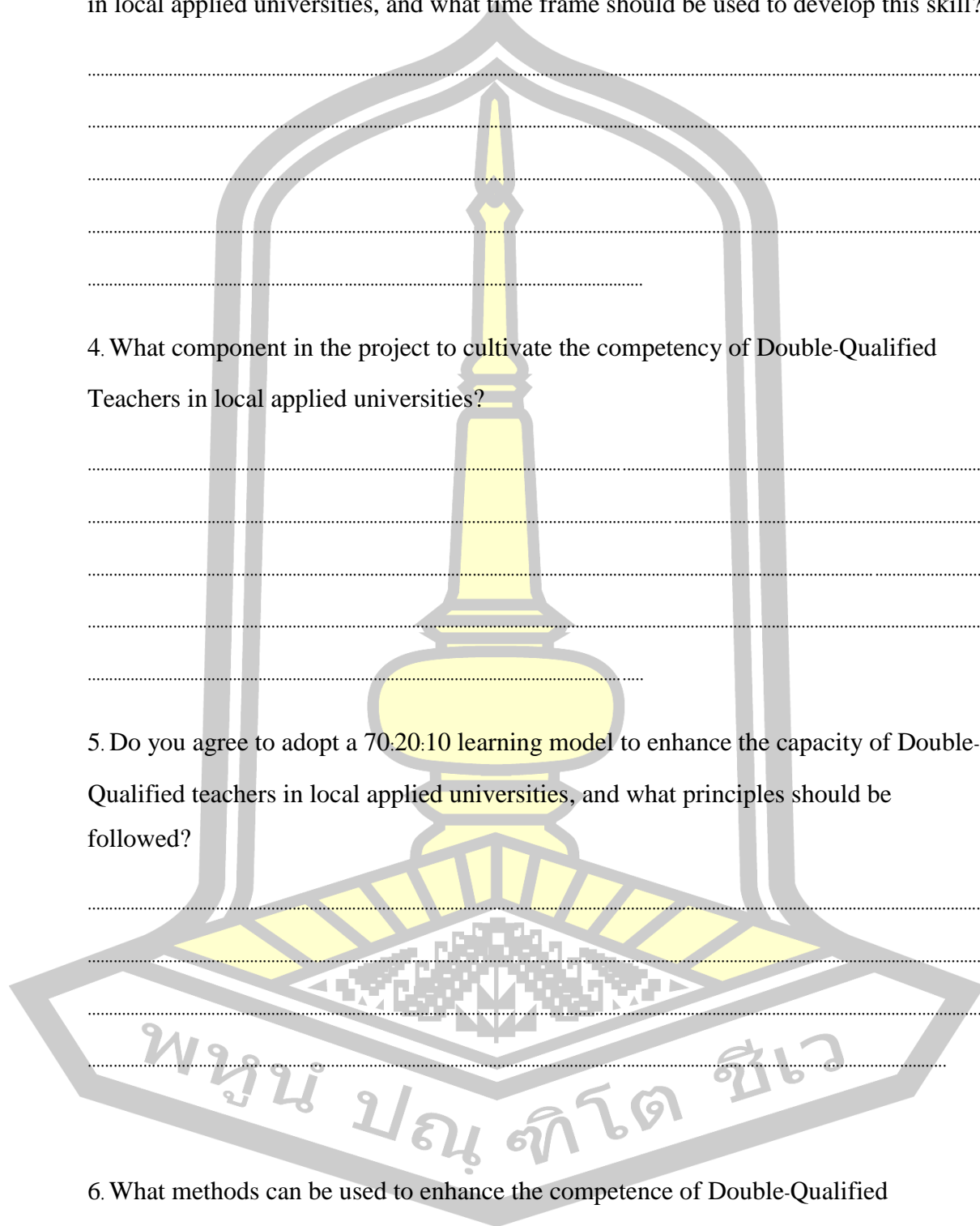
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6. What methods can be used to enhance the competence of Double-Qualified teachers?



7. How to enhance the ethics of Double-Qualified Teachers? What time frame should be used to develop this skill?

8. How to enhance the Practical ability of Double-Qualified teachers? What time frame should be used to develop this skill?

9. How to enhance the Teaching ability of Double-Qualified teachers? What time frame should be used to develop this skill?

10. How to enhance the Reflection and improvement of Double-Qualified teachers?

What time frame should be used to develop this skill?

11. How to enhance the Teacher-student relationship of Double-Qualified teachers?

What time frame should be used to develop this skill?

12. How to measure and evaluate the project of training Double-Qualified teachers in local applied universities?

Thank you for collaborating in the interview.

## Assessment form of Double-Qualified teachers competency improvement program of local applied university

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Assessment form of Double-Qualified teachers competency improvement program of local applied university, this is an assessment tool, The aim is to improve the competency of Double-Qualified teachers in local applied universities. This evaluation form is designed to assess the suitability, accuracy and feasibility of the developed project. This evaluation form is divided into the following 2 parts:

**Part 1:** General Information of Qualified Personnel

**Part 2:** Evaluation of the suitability, accuracy and feasibility evaluation of the dual teacher ability training project in local applied university

**Instructions:** Please read each statement carefully, then tick the box (☐) as to whether you think the program is suitable for developing dual qualified teachers in local applied universities, using the following evaluation criteria, divided into the following 5 levels:

4.51 - 5.00 refers to suitability, accuracy and feasibility as very high

3.51 - 4.50 refers to suitability, accuracy and feasibility as high

2.51 - 3.50 refers to suitability, accuracy and feasibility as a medium

1.51 - 2.50 refers to suitability, accuracy and feasibility as low

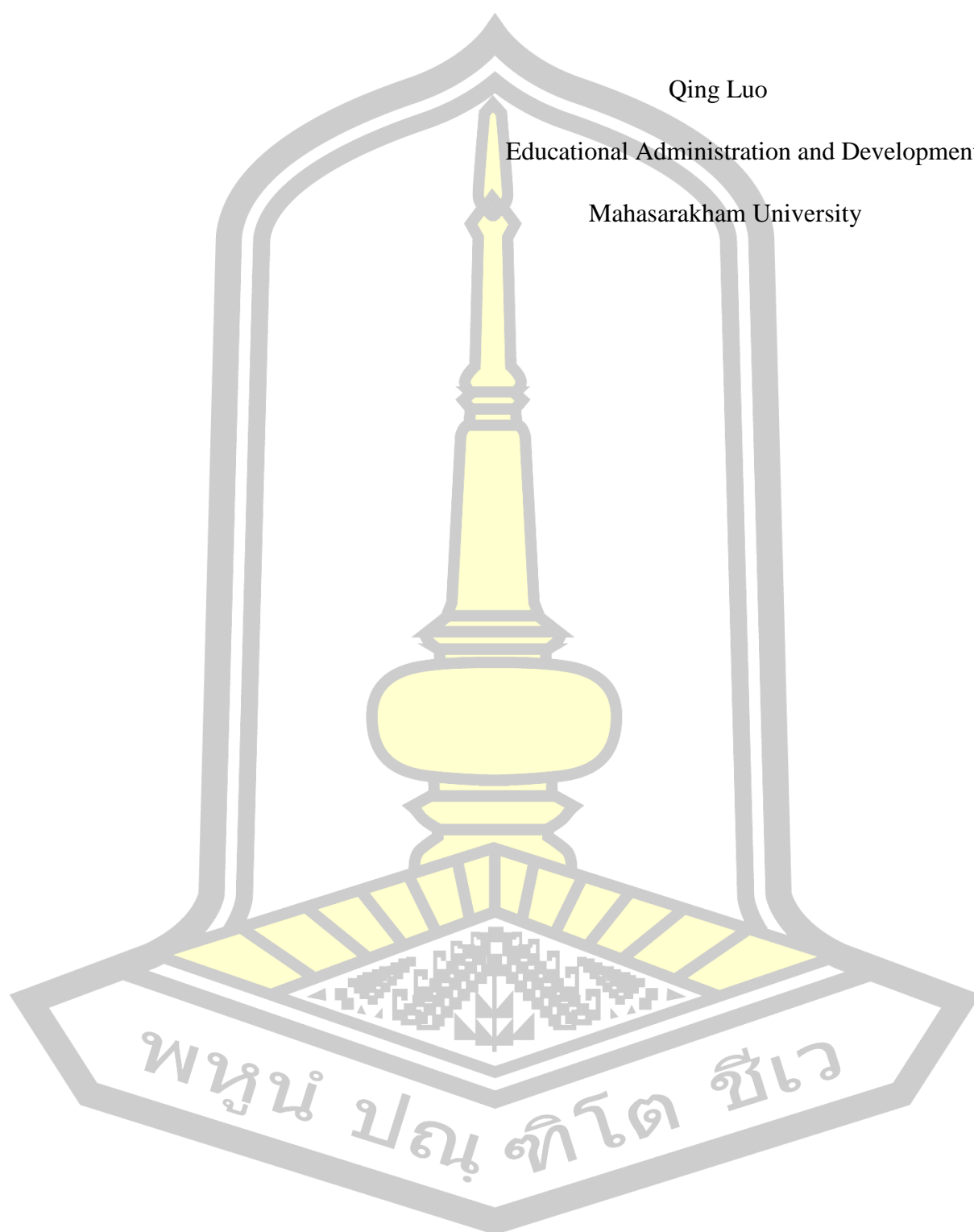
1.00 - 1.50 refers to suitability, accuracy and feasibility as very low

The researcher hopes to receive your cooperation and would greatly appreciate your valuable collaboration on this occasion. Thank you for your kind cooperation and support.

Qing Luo

Educational Administration and Development

Maharakham University



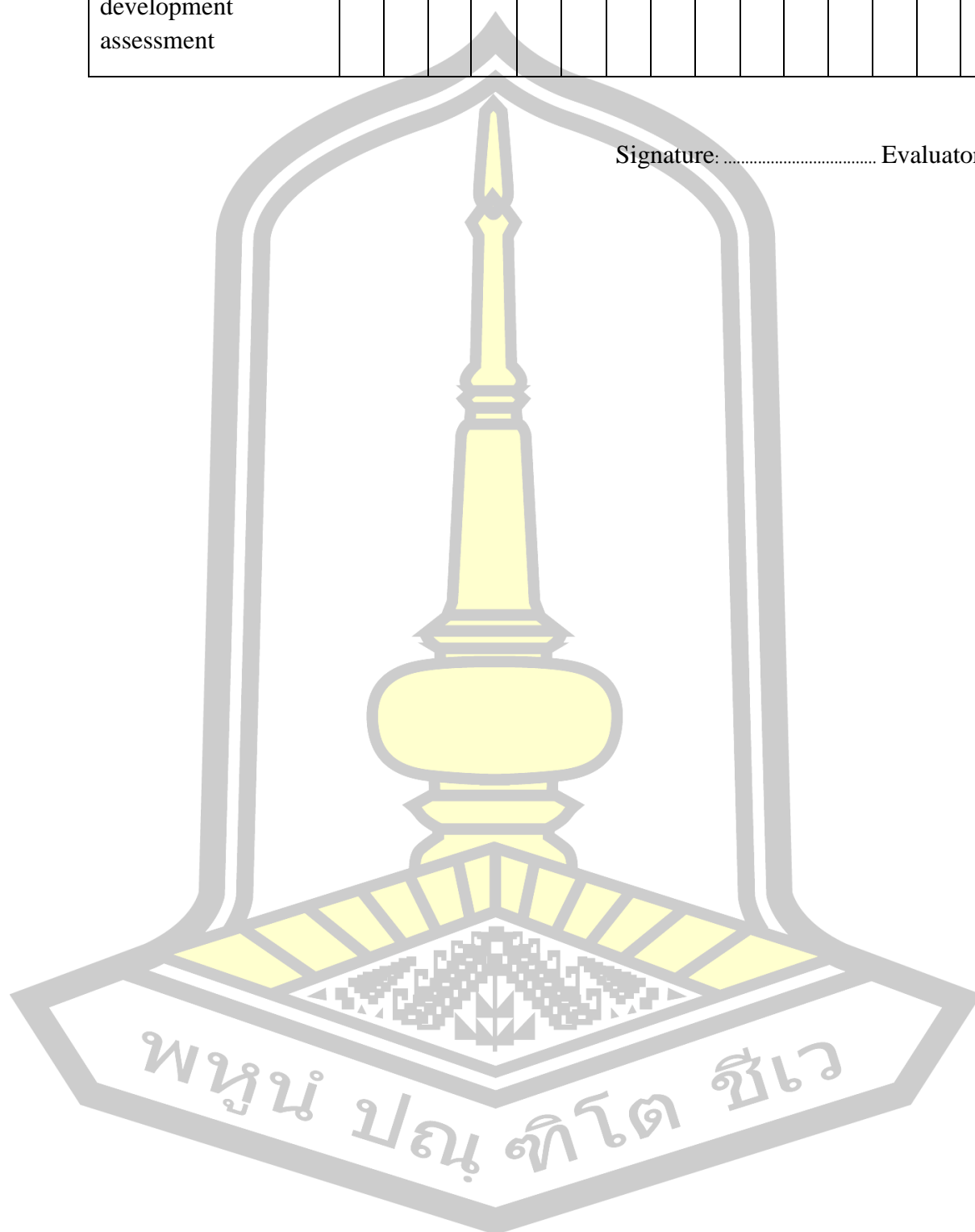


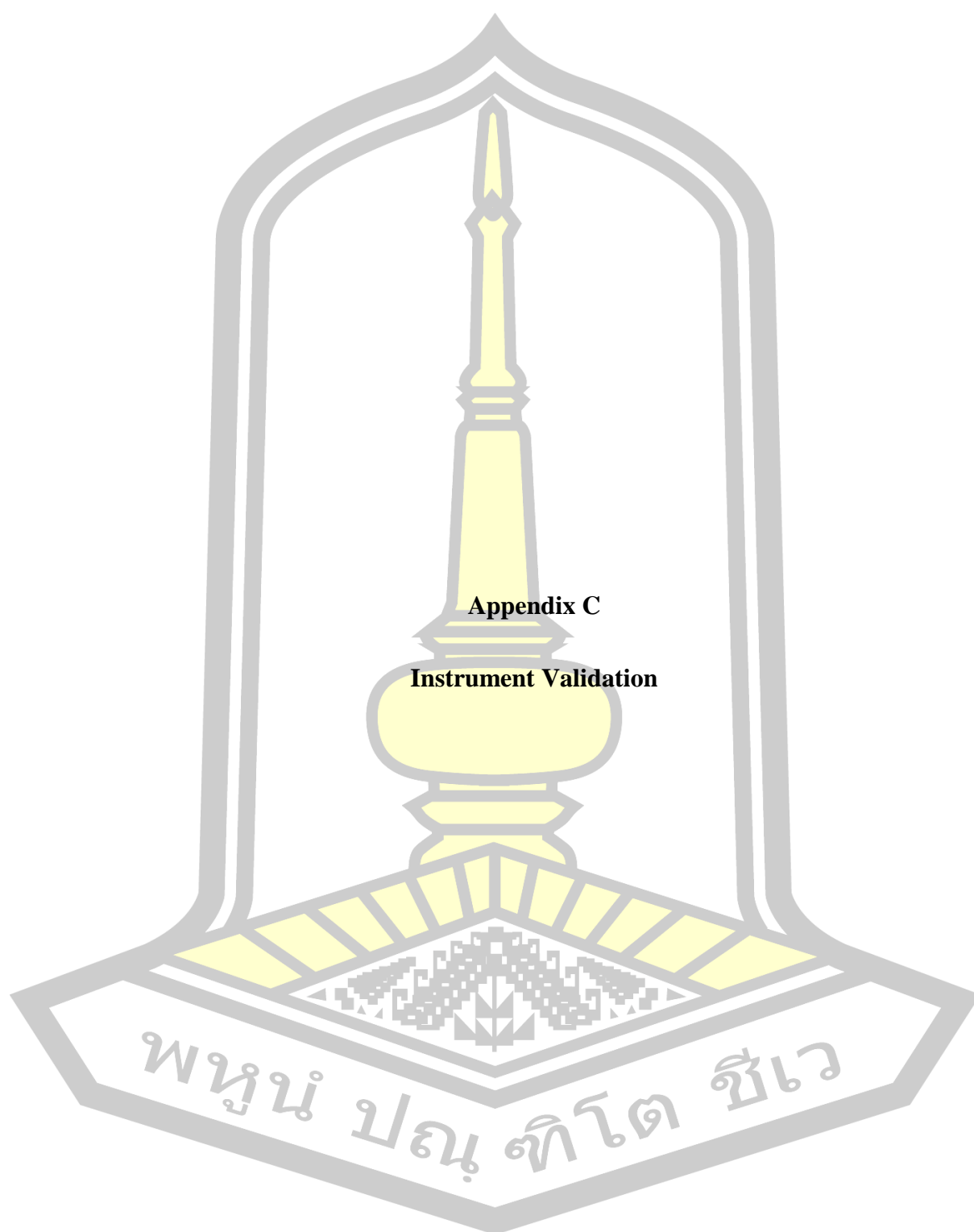
3.4 Module 4: Reflection and Improvement																	
3.5 Module 5: Teacher-student relationship																	
4. Development Processes																	
Evaluation list	Suitability					Accuracy					Feasibility						
	5	4	3	2	1	5	4	3	2	1	5	4	3	2	1		
4.1 Self-directed learning																	
4.2 Training																	
4.3 Learning from case studies																	
4.4 Brainstorming																	
4.5 Learning from practical work experience																	
4.6 Teaching tasks																	
5.Measurement and Evaluation																	
5.1 Pre- development assessment																	
5.2 Mid- development assessment																	



5.3 Post-  
development  
assessment

Signature: ..... Evaluator





**Index of Content Validity (IOC) of the Content Validity Assessment  
Form for Enhance the Double-Qualified Teachers Competency  
in Local Applied University**

**Table 1:** Results of Content Validity Assessment (IOC) of the Questionnaire for Research on the Enhancement Program for the Double-Qualified Teachers Competency in Local Applied University.

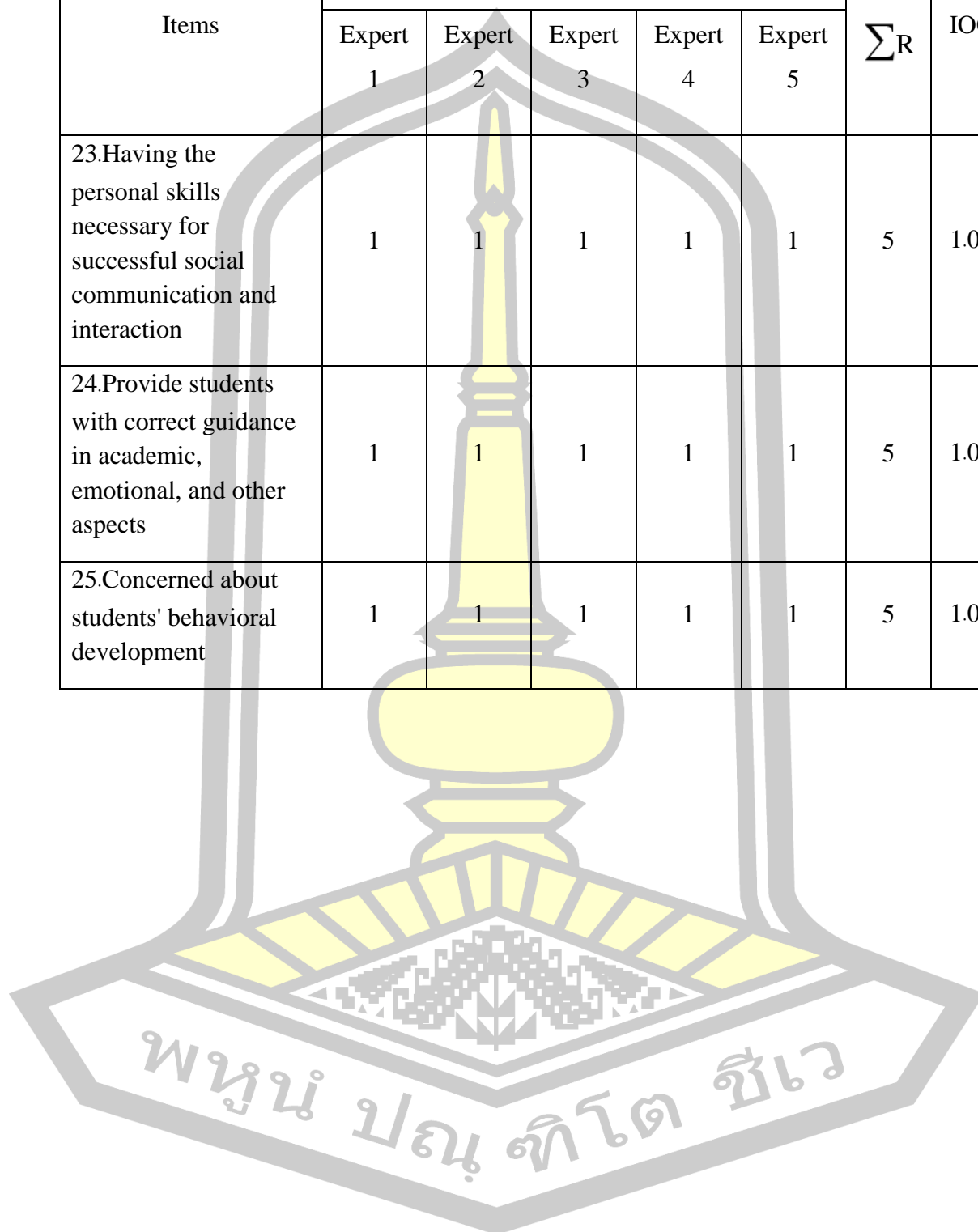
Items	Expert Opinion Levels					$\sum R$	IOC
	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5		
1. Proper ethics							
1.Teachers need to have the qualities of integrity and honesty	1	1	1	1	1	5	1.00
2.Teachers should respect others' privacy	1	1	1	1	1	5	1.00
3.In any circumstance, it is necessary to abide by the law	1	1	1	1	1	5	1.00
4.Teachers should have good teamwork skills	1	1	1	1	1	5	1.00
5.Teachers should learn self-monitoring and also supervise others	1	1	1	1	1	5	1.00

Items	Expert Opinion Levels					$\sum R$	IOC
	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5		
2. Practical ability							
6.Teachers should have more professional technical skills	1	1	1	1	1	5	1.00
7.Teachers should have problem-solving abilities	1	1	1	1	1	5	1.00
8.Teachers should have knowledge or skills acquired through practical experience	1	1	1	1	1	5	1.00
9.Teachers should be proficient in using tools and equipment	1	1	1	1	1	5	1.00
10.Continuously improve through teaching feedback	1	1	1	1	1	5	1.00
3. Teaching ability							
11.Systematic, organized, and targeted design of teaching activities	1	1	1	1	1	5	1.00
12.Have a rich reserve of teaching knowledge	1	1	1	1	1	5	1.00

Items	Expert Opinion Levels					$\sum R$	IOC
	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5		
13.Having good abilities and skills in communication and interaction	1	1	1	1	1	5	1.00
14.Teachers should create a positive learning environment and maintain good classroom discipline	1	1	1	1	1	5	1.00
15.Continuously learn and improve one's own knowledge and skills	1	1	1	1	1	5	1.00
4. Reflection and improvement							
16.Teachers should have a clear understanding of themselves	1	1	1	1	1	5	1.00
17.To continuously learn and consistently monitor one's own growth	1	1	1	1	1	5	1.00

Items	Expert Opinion Levels					$\sum R$	IOC
	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5		
18. Have good judgment and decision-making abilities	1	1	1	1	1	5	1.00
19. Identify the problem through investigation, analysis, etc	1	1	1	1	1	5	1.00
20. Capable of analyzing problems comprehensively from multiple perspectives	1	1	1	1	1	5	1.00
5. Teacher-student relationship							
21. Being able to care about students' academic progress and development	1	1	1	1	1	5	1.00
22. Having the ability to make students with mental health or emotional issues feel calmer and less worried	1	1	1	1	1	5	1.00

Items	Expert Opinion Levels					$\Sigma_R$	IOC
	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5		
23.Having the personal skills necessary for successful social communication and interaction	1	1	1	1	1	5	1.00
24.Provide students with correct guidance in academic, emotional, and other aspects	1	1	1	1	1	5	1.00
25.Concerned about students' behavioral development	1	1	1	1	1	5	1.00



**Table 2:** Reliability analysis of the Existent condition and feasibility of the Double-Qualified teachers competency improvement plan in local applied universities.

Items	Correlation coefficient ( $r_{xy}$ )		Items	Correlation coefficient ( $r_{xy}$ )	
	Existent condition	Desired condition		Existent condition	Desired condition
1	0.985	0.964	14	0.985	0.966
2	0.984	0.965	15	0.985	0.965
3	0.985	0.966	16	0.986	0.965
4	0.985	0.965	17	0.984	0.966
5	0.984	0.965	18	0.985	0.965
6	0.985	0.964	19	0.986	0.964
7	0.984	0.966	20	0.985	0.965
8	0.986	0.965	21	0.985	0.965
9	0.985	0.966	22	0.986	0.965
10	0.986	0.965	23	0.986	0.964
11	0.984	0.965	24	0.985	0.965
12	0.985	0.964	25	0.985	0.965
13	0.985	0.965			

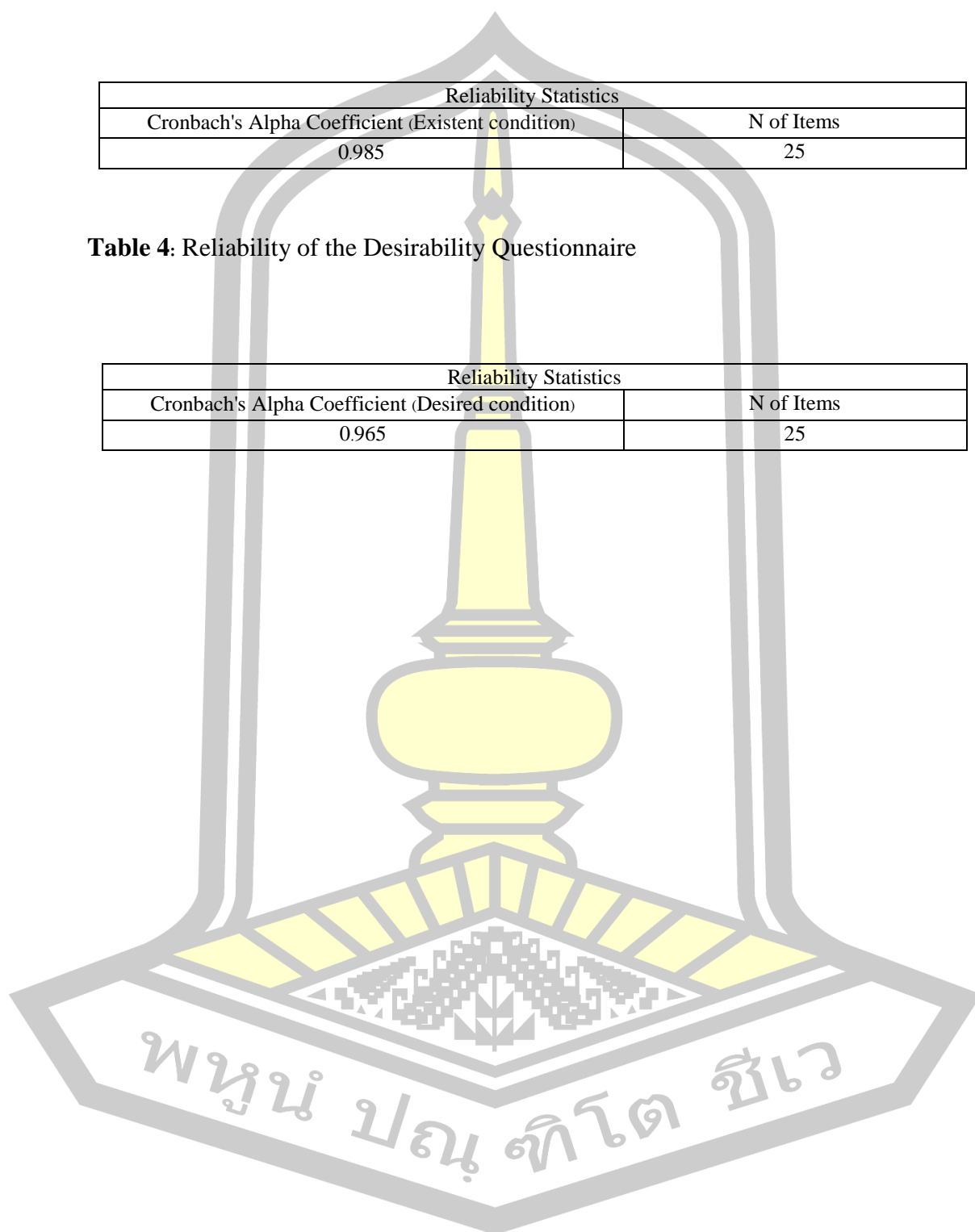


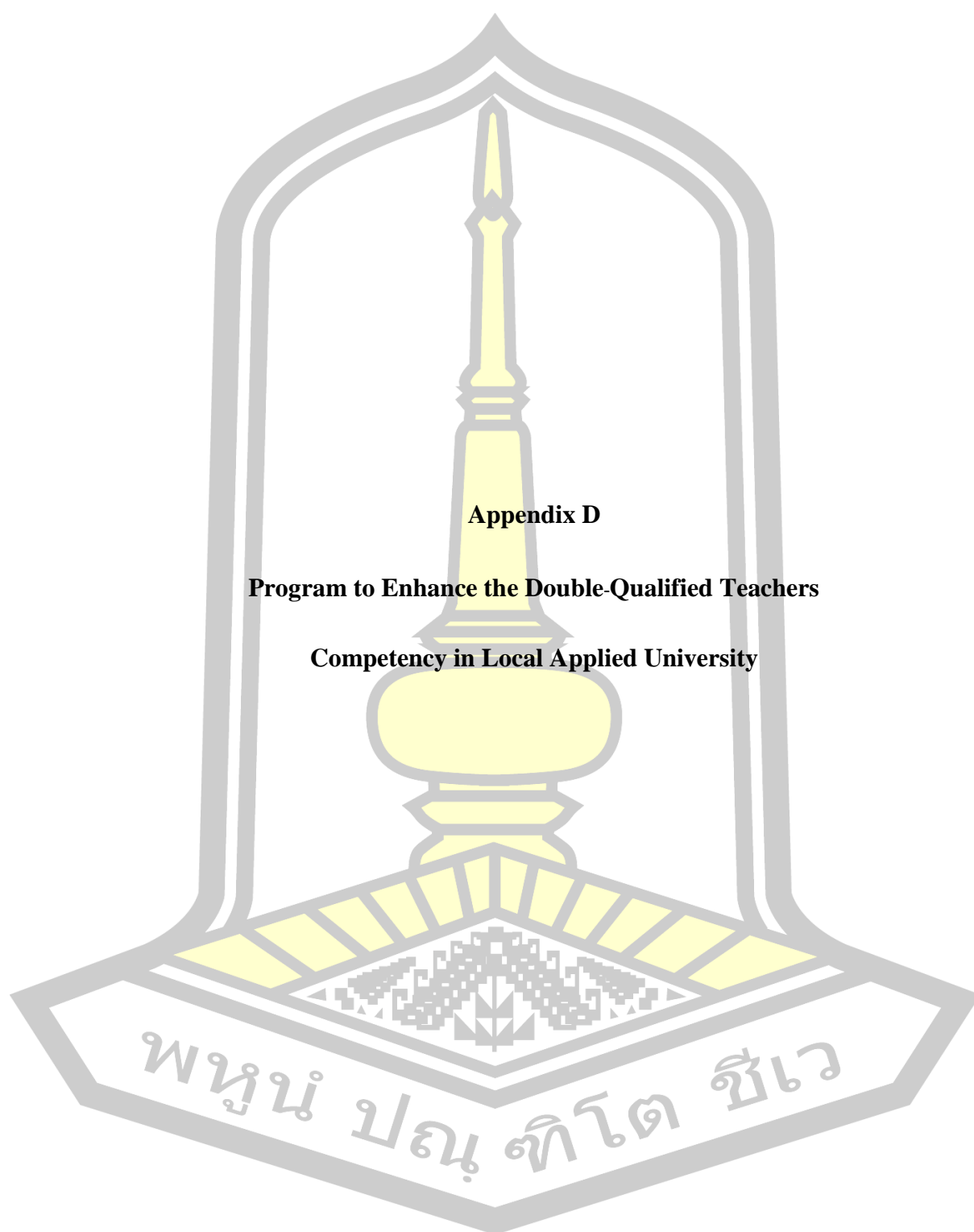
**Table 3:** Reliability of the Existent condition Situation Questionnaire

Reliability Statistics	
Cronbach's Alpha Coefficient (Existent condition)	N of Items
0.985	25

**Table 4:** Reliability of the Desirability Questionnaire

Reliability Statistics	
Cronbach's Alpha Coefficient (Desired condition)	N of Items
0.965	25

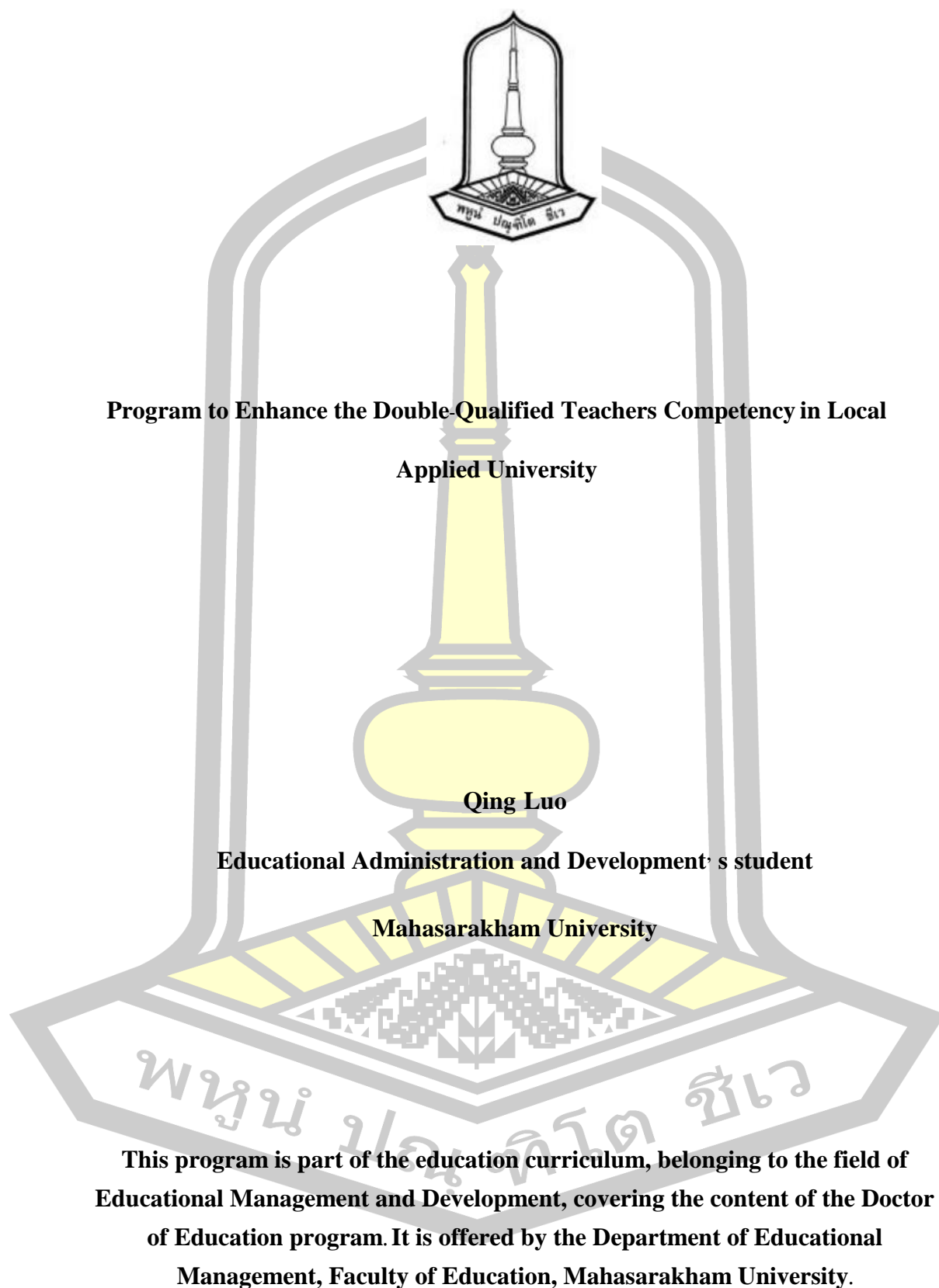




## **Appendix D**

**Program to Enhance the Double-Qualified Teachers**

**Competency in Local Applied University**



## PREFACE

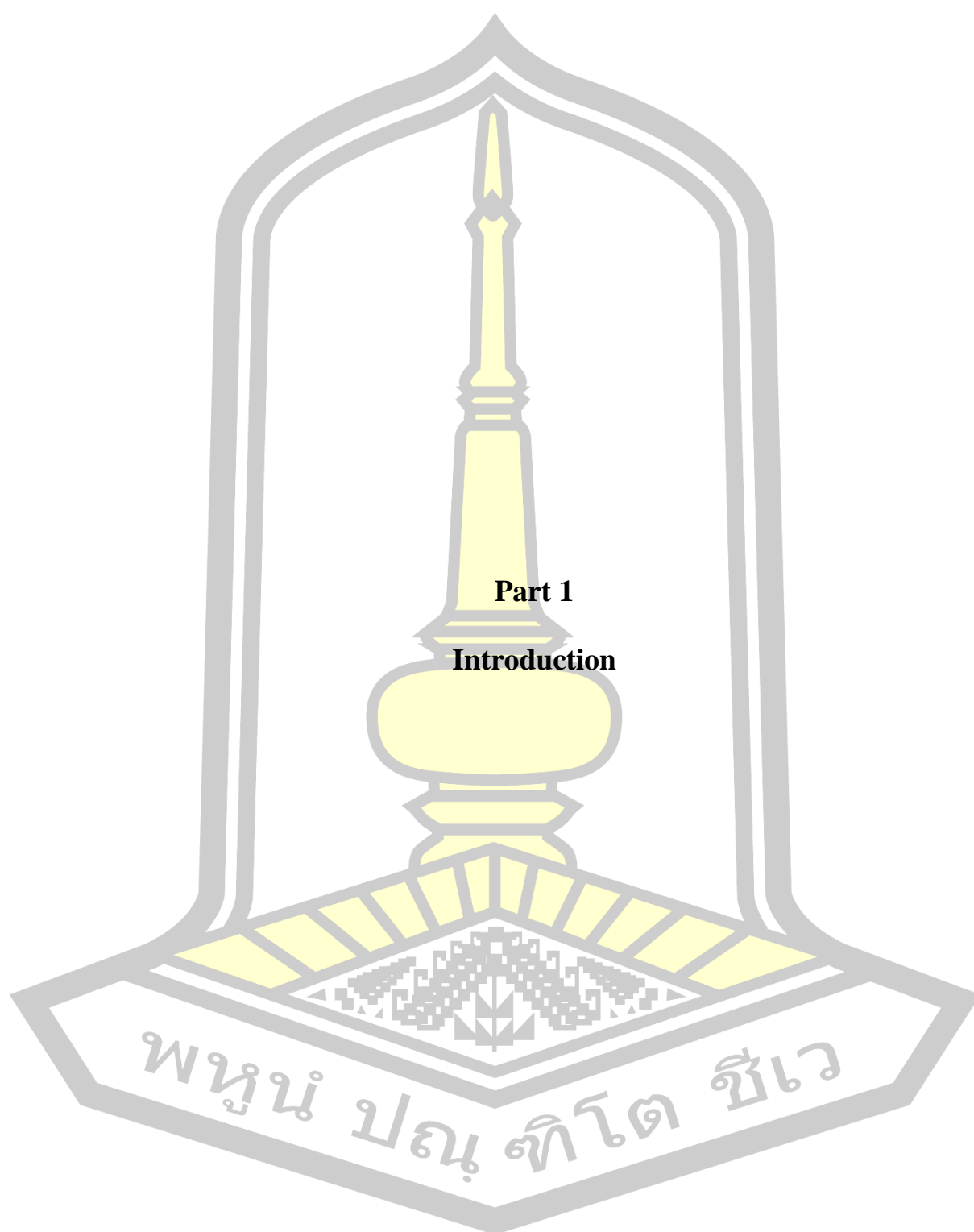
This program is designed to enhance the competency of Double-Qualified teachers in local applied universities. Entitled "Program to Enhance the Double-Qualified Teachers Competency in Local Applied University," it aims to serve as a guide for strengthening the development of Double-Qualified teacher capabilities. The contents of this book are divided into two main parts: the part 1 is the introduction, which includes principles, objectives, content, development principles, as well as assessment and evaluation methods. The part 2 is the program to enhance the competency of Double-Qualified teachers in local applied universities, which will elaborate on each module, including Module 1: Proper Ethics, Module 2: Practical Ability, Module 3: Teaching Ability, Module 4: Reflection and Improvement, and Module 5: Teacher-Student Relationship. This includes a table for the development of Double-Qualified teacher capabilities and an evaluation table for development (before and after development).

This program aims to enhance the competency of Double-Qualified teachers in local applied universities. Interested individuals from schools or educational institutions can use it as a guideline for developing Double-Qualified teachers. This will help them improve their capabilities as Double-Qualified teachers, thus positively impacting the quality of education.

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## Principles

Dual-Qualified teachers play a crucial role in the national education development. They possess not only teaching skills but also in-depth knowledge and rich experience in their professional fields. By collaborating with students and other educators, Dual-Qualified teachers can provide more personalized and diverse learning experiences, fostering the comprehensive development of students. They can also serve as leaders in educational reform and innovation, promoting the improvement of educational quality and the continuous development of the education system. Therefore, cultivating and supporting Dual-Qualified teachers is of great significance to the development of the national education industry. This not only enhances the quality of education by providing richer teaching resources and innovative teaching methods to promote the comprehensive development of students, but also drives educational reform and the continuous improvement and development of the education system. Moreover, high-quality Dual-Qualified teacher teams can enhance the competitiveness of schools, attracting more outstanding students and parents to choose the school, thereby enhancing the reputation and status of the school. Most importantly, in the face of future social changes and challenges, improving the ability of Dual-Qualified teachers can make the education system more flexible and adaptable, cultivating more competitive and adaptable future talents. Therefore, enhancing the ability of Dual-Qualified teachers is not only about the professional development of individual teachers but also about the development of the entire education system and the progress of future society.

## Objectives

4. Enhance understanding of the principles of developing the capabilities of Dual-Qualified teachers in local applied universities.

5. Under the supervision of relevant educational administrators, cultivate the capabilities of Dual-Qualified teachers in local applied universities. This includes 5

areas: 1) Proper ethics, 2) Practical ability, 3) Teaching ability, 4) Reflection and improvement, 5) Teacher-student relationship.

6. To ensure that the Dual-Qualified teachers receiving training improve their abilities and can apply the knowledge and experience gained in school work, thus producing a positive impact on the enhancement of educational quality.

### **Content**

To enhance the capabilities of Dual-Qualified teachers in local applied universities, the program comprises 5 modules, each outlining specific content domains.

#### **Topic 1: Proper Ethics: Module 1**

The content of this module focuses on enhancing teachers' ethical standards to achieve the goals or mission of the school. It includes qualities such as integrity, honesty, respect for others' privacy, adherence to laws, strong teamwork skills, and the ability to self-monitor and supervise others. This is achieved through Self-directed learning, Training, Learning from case studies, Brainstorming, Learning from practical work experience, and Teaching tasks.

#### **Topic 2: Practical Ability: Module 2**

The content of this module focuses on enhancing teachers' practical ability. It includes improving teachers' professional technical skills, enhancing teachers' problem-solving abilities, acquiring knowledge or skills through practical experience, proficiently using tools and equipment, and continuously improving through teaching feedback. This is achieved through self-directed learning, training, learning from case studies, brainstorming, learning from practical work experience, and teaching tasks.

#### **Topic 3: Teaching Ability: Module 3**

The focus of this module is to enhance teachers' pedagogical skills, encompassing the design of effective teaching activities, a comprehensive reservoir of instructional knowledge, proficient communication and interaction abilities, adept classroom management techniques, as well as continuous learning and professional development. These objectives are accomplished through self-directed learning, training programs, analysis of case studies, collaborative brainstorming sessions, experiential learning from real-world scenarios and practical teaching assignments.

#### Topic 4: Reflection and Improvement: Module 4

The primary objective of this module is to augment educators' capacity for introspection and advancement. It encompasses the cultivation of self-awareness, perpetuated learning, vigilant self-assessment of personal development, adeptness in discernment and decision-making, identification of issues through systematic inquiry and analysis, and the ability to conduct thorough problem analysis from various angles. These objectives are realized through avenues such as self-directed learning, structured training sessions, deriving insights from case studies, collaborative brainstorming sessions, experiential learning from practical contexts, and pedagogical responsibilities.

#### Topic 5: Teacher-student Relationship: Module 5

The emphasis of this module lies in enhancing the Teacher-student relationship. It entails the ability to foster students' academic progress and development, provide a sense of calmness and reassurance to students facing psychological or emotional challenges, possess the interpersonal skills necessary for successful social communication and interaction, offer appropriate guidance and care to students in academic, emotional, and behavioral aspects. These objectives are achieved through avenues such as self-directed learning, structured training sessions, deriving insights from case studies, collaborative brainstorming sessions, experiential learning from practical contexts, and pedagogical responsibilities.



## Development Process

### 1. Development Principles

From studying and analyzing academic literature and documents, the concept of learning has been formulated according to the 70:20:10 model. This concept was introduced by Lawson (2008), and further elaborated upon by Phurivat Wannichawasin (2016), Sutham Thammathatsana (2019). It comprises three essential components of learning:

#### 4) 70% Learn by Experience

It pertains to a mode of learning derived from direct experiential engagement within authentic workplace settings or practical fieldwork. This avenue empowers educational administrators with the capacity to expeditiously acquire insightful understandings. The adept acquisition of knowledge from such experiences subsequently culminates in efficacious learning, as administrators internalize these experiences into their cognitive repertoire and behavioral repertoire, effectively serving as a conduit between practical application and theoretical frameworks. This methodological approach fosters the cultivation of novel experiential realms or proficiencies, thereby augmenting the efficacy of educational administrators' professional responsibilities. The tools employed for personnel development underpinned by this learning paradigm transcend conventional classroom-based instructional modalities.

#### 5) 20% Learn by Others

This represents a learning modality known as "Learn by Others," wherein individuals acquire knowledge and skills not exclusively through direct supervision or authority but rather from their peers within or across organizational units. This collaborative learning approach may unfold in informal or structured environments, fostering dialogues, consultations, and the exchange of information. Such interactions hinge upon robust interpersonal relationships, necessitating active engagement,

coordinated discussions, and the sharing of perspectives at opportune junctures among multiple parties. The developmental tools deployed within this framework transcend conventional classroom-based training methodologies.

#### 6) 10% Learn by Courses

It represents a blended learning approach that integrates traditional classroom instruction with non-classroom methods, incorporating diverse learning modalities including e-learning platforms and various instructional materials. This method entails accessing pre-designed programs or courses, which are deemed essential and indispensable for professional development. It stands as a significant developmental format, facilitating learners' active involvement in experiential learning and ensuring the genuine assimilation and application of acquired knowledge.

### 2. Methods/Development Activities

The methods to enhancing the ability of Double-Qualified teachers are as follows:

2.1 70% Learning from Experience utilizing a duration of 63 hours, employing the following development methods:

Self-directed learning, utilizing a duration of 19 hours.

- 6) Learning Teacher Ethical Standards (Module 1)
- 7) Simulate scenarios for practice and practice (Module 2)
- 8) Read education books and literature (Module 3)
- 9) Keep a teaching log (Module 4)
- 10) Learn communication skills (Module 5)

Learning from practical work experience, utilizing a duration of 24 hours.

- 6) Set the right professional example (Module 1)

- 7) Participate in practical projects (Module 2)
- 8) Seminars, workshops and other professional development activities (Module 3)
- 9) Evaluate teaching effect (Module 4)
- 10) Participate in student activities (Module 5)

Teaching tasks, utilizing a duration of 20 hours.

- 6) Learn from great teachers (Module 1)
- 7) Classroom observation activities of fellow teachers (Module 2 and Module 3)
- 8) Seeking feedback on teaching (Module 4)
- 9) Exchange activities between teachers and students (Module 5)

2.2 20% Learning by Others utilizing a duration of 18 hours, employing the following development methods:

Learning from case studies, utilizing a duration of 10 hours.

- 1) Technical skills exchange activities (Module 2)
- 2) Instructional design improvement activities (Module 3)
- 3) Excellent experience exchange activities (Module 4)

Brainstorming, utilizing a duration of 8 hours.

- 1) Innovation workshop (Module 1)
- 2) Team building activity (Module 5)

2.3 10% Learning by Courses utilizing a duration of 9 hours, employing the following development methods:

Training, utilizing a duration of 9 hours.

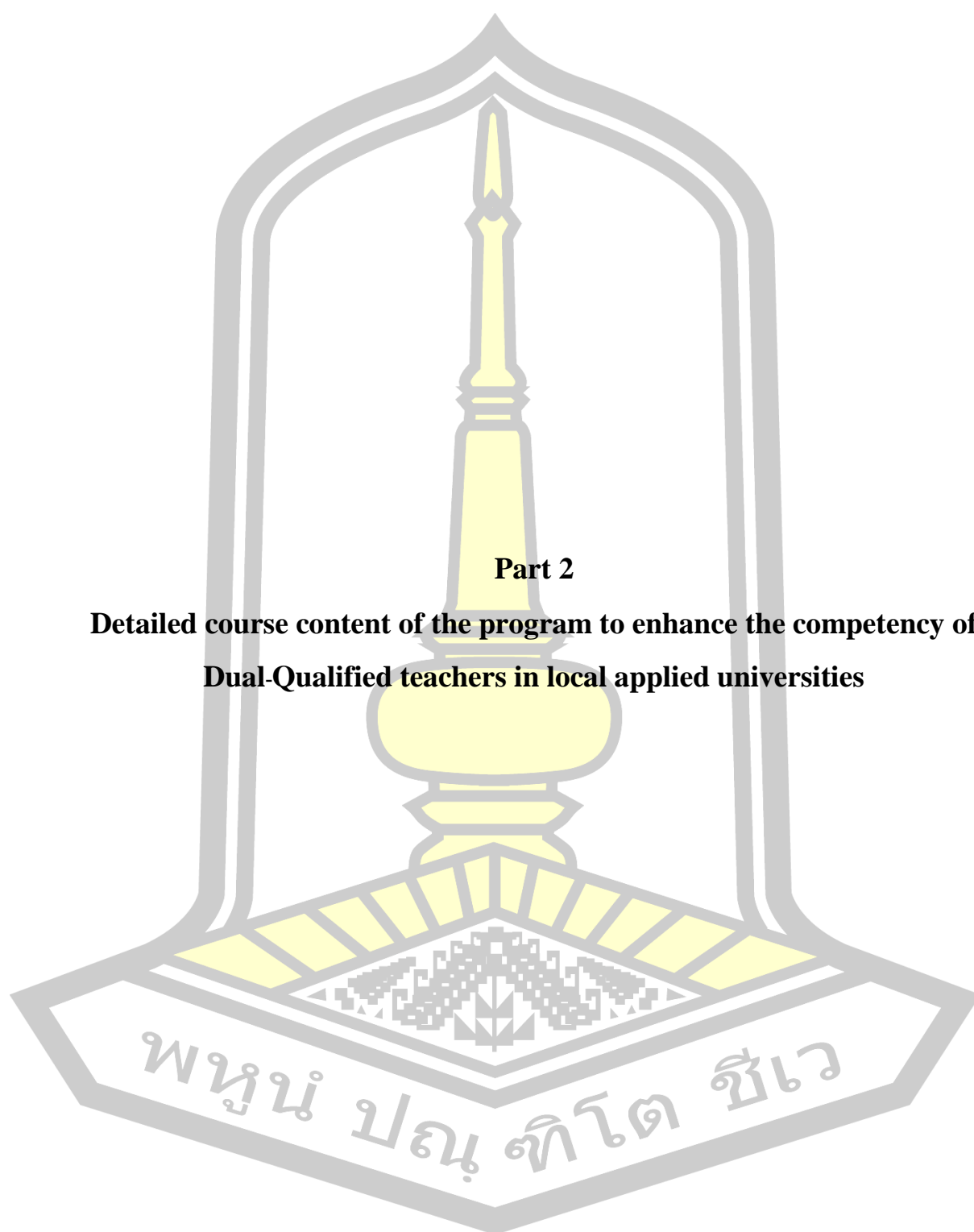
- 1) Teacher ethics training activities (Module 1)
- 2) Teachers' practical ability training activities (Module 2)
- 3) Teaching skills training activities for teachers (Module 3)
- 4) Teachers' reflective ability enhancement activities  
(Module 4)
- 10) How to be a good friend of students Training activities  
(Module 5)

### **Measurement and Evaluation**

1. Pre-development evaluation: Analyzing the constituent elements of Double-Qualified teacher competence via a comprehensive literature review and conducting an evaluation of the existing dual-teacher competence prior to further development.

2. Evaluation during development: During the development phase, the evaluation activities encompass group activities, learning exchange assessments, and satisfaction assessments of the development activities, utilizing satisfaction evaluation forms.

3. Post-development evaluation: Following the development phase, it is imperative to evaluate the present status and anticipated standards of Double-Qualified teacher proficiency within local applied universities.



## **Part 2**

**Detailed course content of the program to enhance the competency of  
Dual-Qualified teachers in local applied universities**

## Module 1

### Proper ethics Duration of 20 hours

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#### Principles

The ethical code of teachers refers to the behavioral guidelines and moral standards that teachers should adhere to in their educational work. These standards include but are not limited to integrity, responsibility, fairness, respect, care, and professionalism. They guide teachers to maintain good character and behavior in interactions with students, parents, colleagues, and the wider community, promoting the normal conduct of education and the comprehensive development of students. The ethical code of teachers is of utmost importance in education. It not only guides teachers' performance in teaching and behavior but also plays a crucial role in shaping students' character, values, and sense of social responsibility. Teachers' ethical behavior influences students' attitudes towards learning and behavior patterns, serving as a positive example for them. The integrity, fairness, and respect demonstrated by teachers not only serve as a model during the teaching process but also cultivate students' moral awareness and sense of social responsibility as they grow, facilitating the comprehensive development of education.

#### Objectives

The goal of enhancing teacher ethical standards is to cultivate an educator workforce with high professional integrity and social responsibility. By emphasizing values such as honesty, responsibility, fairness, and respect, it encourages teachers to demonstrate good moral qualities and behaviors in educational practice. This not only helps ensure the smooth operation of educational work but also sets a good example for students, fostering their positive outlook and values, thereby promoting comprehensive development in education and enhancing students' overall quality.

## Content

1. The meaning and importance of learning teacher ethical standards
2. Steps in the teacher ethical management process
3. Components of ethical standards
4. Implementation of ethical management in school administration

## Development process

Learning by Experience: 14 hours

Development methods	Development activities (20 hours)
Self-directed learning (6 hours)	Learning teacher ethical standards covers aspects such as integrity, responsibility, fairness, and respect.
Learning from practical work experience (4 hours)	Observing and emulating the behavior standards of experienced teachers.
Teaching tasks (4 hours)	Participate in classroom observation activities of fellow teachers and learn from the experience and teaching of other teachers.

Learning by Others: 4 hours

Development methods	Development activities (20 hours)
Brainstorming (4 hours)	Use brainstorming to interact with fellow teachers to generate new ideas, solve problems, or develop plans.

Learning by Courses takes 2 hours

Development methods	Development activities (20 hours)
<p>Training (2 hours)</p>	<p>Teacher ethics training activities sequence of steps as follows:</p> <ol style="list-style-type: none"> <li>1. Lecture to provide knowledge by lecturers including: <ul style="list-style-type: none"> <li>-The significance and importance of teacher morality.</li> <li>-Teacher moral management process.</li> <li>-Explain the components of ethical standards</li> </ul> </li> <li>2. Join a group to discuss the problems encountered in the process of teacher ethics management and how to solve them.</li> <li>3. Discuss and present the results of the activities.</li> </ol>
<p>Measurement and evaluation</p>	<ol style="list-style-type: none"> <li>1. Evaluate the results of ethical guideline communication.</li> <li>2. Assess the project's ethical management plan.</li> <li>3. Evaluate the results of ethical management operational monitoring.</li> <li>4. Assess the results presented by ethical management activities.</li> </ol>



## Proper ethics

The Proper Ethics of teachers is the code of conduct and necessary moral quality that teachers follow in their educational work. It includes not only the norms and standards that teachers should follow in their professional activities, but also the beliefs and pursuits that teachers should hold for the cause of education. The Ethics of teachers include respect for students, educational faith, professionalism, honesty and trustworthiness, fairness and incorruptibility, leading by example and cooperative spirit.

### Component and Indicator

The key features of Proper Ethics are described in 5 aspects as follows.

1. Teachers need to have the qualities of integrity and honesty. Teachers are entrusted with the responsibility of educating young minds, and maintaining these qualities upholds the standards of the profession. Integrity and honesty form the foundation of these relationships, fostering open communication and mutual respect.
2. Teachers should respect others' privacy. Respecting privacy demonstrates that teachers value their students as individuals and respect their personal boundaries. Respecting privacy means keeping this information confidential unless there is a legitimate need to share it (such as ensuring the student's well-being).
3. In any circumstance, it is necessary to abide by the law. Demonstrating adherence to the law upholds the standards of professionalism and integrity expected of educators. Compliance with the law helps to maintain trust and credibility with students, parents, colleagues, and the broader community.
4. Teachers should have good teamwork skills. Good teamwork skills are essential for teachers to thrive both professionally and personally. By collaborating effectively with colleagues, teachers can enhance their teaching practices, support each other's growth, and ultimately improve outcomes for their students.
5. Teachers should learn self-monitoring and also supervise others. By

cultivating self-monitoring skills and developing the ability to supervise others, teachers can enhance their effectiveness in the classroom, contribute to a culture of continuous improvement within their schools, and support the professional growth of their colleagues.

Proper ethics refer to the principles and standards of conduct that guide individuals and organizations in their interactions and decision-making processes. These ethical principles typically include honesty, integrity, fairness, respect, and responsibility. Adhering to proper ethics involves behaving in a morally upright and responsible manner, considering the impact of one's actions on others and society as a whole.

The purpose of enhancing teacher ethical standards is to:

1. Safeguard Students' Rights
2. Maintain Educational Equity
3. Build Trusting Relationships
4. Enhance Educational Quality
5. Uphold Teacher Image

8 ways to enhance teacher ethical standards:

1. Education and Training: Provide teachers with ethics education and training to help them understand the importance of ethical standards and how to apply them in their teaching practices.

2. Exemplary Role Models: School leaders and experienced teachers can serve as role models of ethical behavior, influencing other teachers through their actions and encouraging them to adhere to good ethical standards.

3. Professional Development: Offer professional development opportunities for teachers to learn and discuss ethical issues, enhancing their ability to think ethically and raise their awareness of ethical considerations.

4. Establish Support Systems: Provide support and counseling for teachers so they can seek help and guidance in ethical dilemmas, promoting decision-

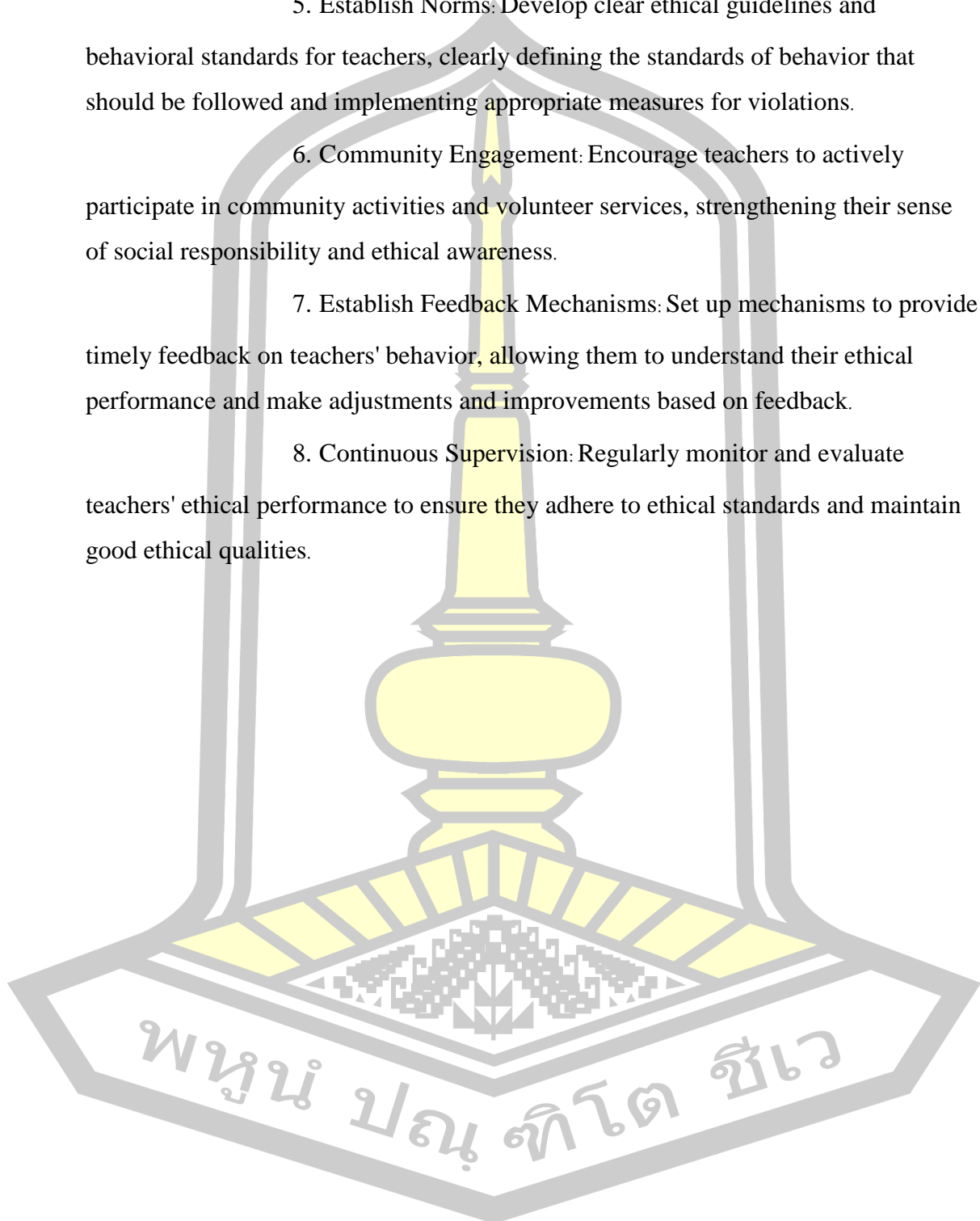
making in line with ethical standards.

5. Establish Norms: Develop clear ethical guidelines and behavioral standards for teachers, clearly defining the standards of behavior that should be followed and implementing appropriate measures for violations.

6. Community Engagement: Encourage teachers to actively participate in community activities and volunteer services, strengthening their sense of social responsibility and ethical awareness.

7. Establish Feedback Mechanisms: Set up mechanisms to provide timely feedback on teachers' behavior, allowing them to understand their ethical performance and make adjustments and improvements based on feedback.

8. Continuous Supervision: Regularly monitor and evaluate teachers' ethical performance to ensure they adhere to ethical standards and maintain good ethical qualities.



## Activity 1: Proper Ethics

Instructions: Gather everyone to discuss each topic as specified and summarize the learning exchange.

1. Why is teacher ethics so important in the educational process?

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2. How should school administrators enhance teachers' ethics?

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3. Explain what problems and obstacles may arise and propose solutions.

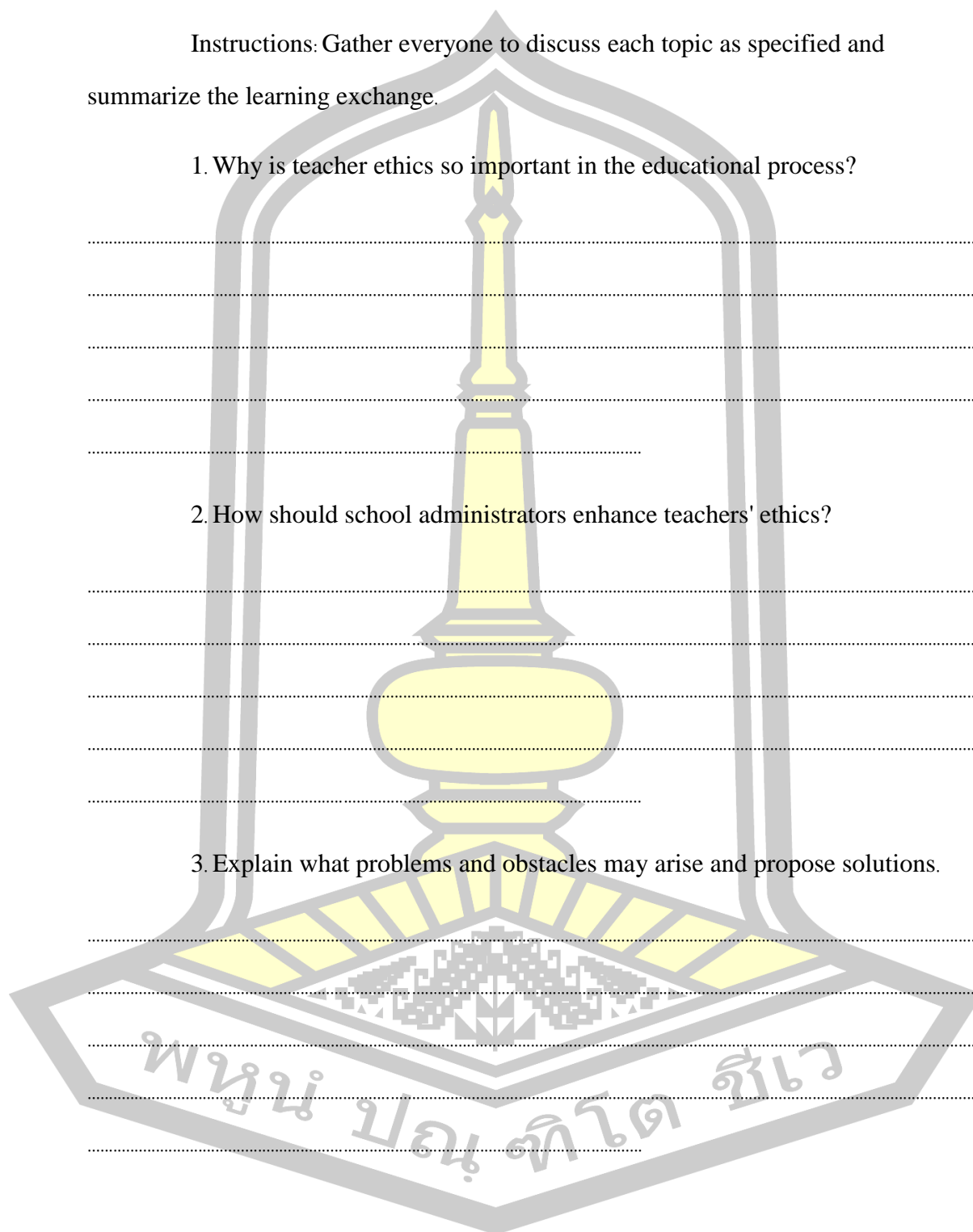
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## Module 2

### Practical ability Duration of 20 hours

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#### Principles

The importance of teachers' practical abilities in teaching work is self-evident, as they directly impact teaching effectiveness and student learning outcomes. Enhancing teachers' practical abilities means they can more flexibly adapt to various teaching situations and challenges, continuously optimize teaching methods and strategies, and improve teaching quality. This not only helps to stimulate students' interest and enthusiasm for learning but also shapes their lifelong learning abilities and independent learning awareness, laying a solid foundation for their future development.

#### Objectives

The purpose of enhancing teachers' practical abilities is to optimize teaching quality and promote student development. By strengthening teachers' practical skills, they can better integrate theoretical knowledge with practical application, innovate teaching methods, and improve teaching effectiveness. This not only helps to stimulate students' interest and potential for learning, cultivate their comprehensive qualities, but also fosters more talent with practical abilities and innovative spirit for society, thereby advancing overall progress in education and societal development.

#### Content

1. Significance and importance of practical ability
2. Components of practical ability
3. Establishing practical ability evaluation

## 4. Practical ability learning atmosphere

**Development process**

Learning by Experience: 14 hours

<b>Development methods</b>	<b>Development activities (20 hours)</b>
Self-directed learning (4 hours)	Simulate scenarios for practice and practice
Learning from practical work experience(6hours)	Actively participate in the school's practical projects or extracurricular activities, and improve my practical ability through practical exercise and experience accumulation
Teaching tasks (4 hours)	Teachers' classroom observation activities, learn from other teachers' experience and methods, expand their own vision, improve their own level

Learning by Others: 4 hours

<b>Development methods</b>	<b>Development activities (20 hours)</b>
Learning from case studies (4 hours)	Actively share teaching experience and teaching methods with fellow teachers and learn from their successful experience.

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Learning by Courses takes 2 hours.

Development methods	Development activities (20 hours)
Training (2 hours)	<p>Teachers' practical ability training activities sequence of steps as follows:</p> <ol style="list-style-type: none"> <li>1. Lecture to provide knowledge by lecturers including:               <ul style="list-style-type: none"> <li>-The significance and importance of teachers' practical ability.</li> <li>-The process of improving teachers' practical ability.</li> <li>-Explain the components of practical competence.</li> </ul> </li> <li>2. Participate in group activities to exchange learning experiences, share findings, and discuss practical experiences.</li> <li>3. Discuss and present the outcomes of the activities, including exchanging learning experiences and sharing insights.</li> </ol>

#### Measurement and evaluation

1. Evaluate the results of practical ability communication.
2. Assess the project's practical ability management plan.
3. Evaluate the results of practical ability management operational monitoring.
4. Assess the results presented by practical ability management activities.

## Practical ability

Practical ability refers to the capacity to apply knowledge and skills to real-world situations or tasks effectively. It goes beyond theoretical understanding and encompasses the hands-on skills and competencies needed to perform specific activities or solve particular problems. Practical ability is often developed through hands-on experience, training, and practice.

### Component and Indicator

The key features of Practical ability are described in 5 aspects as follows.

1. Teachers should have more professional technical skills. Teachers with technical skills are better equipped to engage in ongoing professional development opportunities related to educational technology. They can stay updated on emerging trends, tools, and best practices, ultimately enhancing their teaching effectiveness.
2. Teachers should have problem-solving abilities. Teachers with strong problem-solving skills can identify individual student needs and tailor their instructional strategies to address them effectively. Teachers with problem-solving abilities can identify gaps in curriculum content, modify instructional materials, and develop creative solutions to engage students and achieve learning objectives.
3. Teachers should have knowledge or skills acquired through practical experience. By actively engaging in practical experiences and continuously seeking opportunities for professional development, teachers model the importance of lifelong learning to their students.
4. Teachers should be proficient in using tools and equipment. In addition to traditional tools and equipment, modern classrooms may incorporate digital tools and technology-based equipment. Teachers who are proficient in using these technologies can leverage them to enhance teaching and learning, engage students, and keep pace with advancements in their respective fields.
5. Continuously improve through teaching feedback. Constructive feedback



allows teachers to reflect on their teaching practices, recognize effective strategies, and pinpoint areas that may require adjustment or further development. By reflecting on feedback from students, colleagues, administrators, and self-assessment, teachers can identify areas for growth and pursue targeted professional development opportunities to enhance their teaching skills and knowledge.

Practical ability is a multifaceted skill set that enables individuals to effectively apply their knowledge and skills in real-world contexts. It plays a vital role in problem-solving, innovation, and achieving success in various personal, academic, and professional endeavors.

The aim of improving teachers' practical ability is to:

1. Enhancing Teaching Effectiveness
2. Enriching Teaching Content
3. Increasing Student Engagement
4. Promoting Teachers' Professional Development
5. Fostering Students' Comprehensive Abilities

7 ways to improve teachers' Practical ability:

1. Accumulating practical experience: Actively participating in practical teaching activities such as internships, training sessions, extracurricular tutoring, etc., to enhance teaching skills and confidence through practical operation and experience accumulation.

2. Collaborating with colleagues: Sharing teaching experiences, discussing teaching issues, and jointly designing teaching activities with other teachers, learning from each other, inspiring one another, and promoting the improvement of teaching standards.

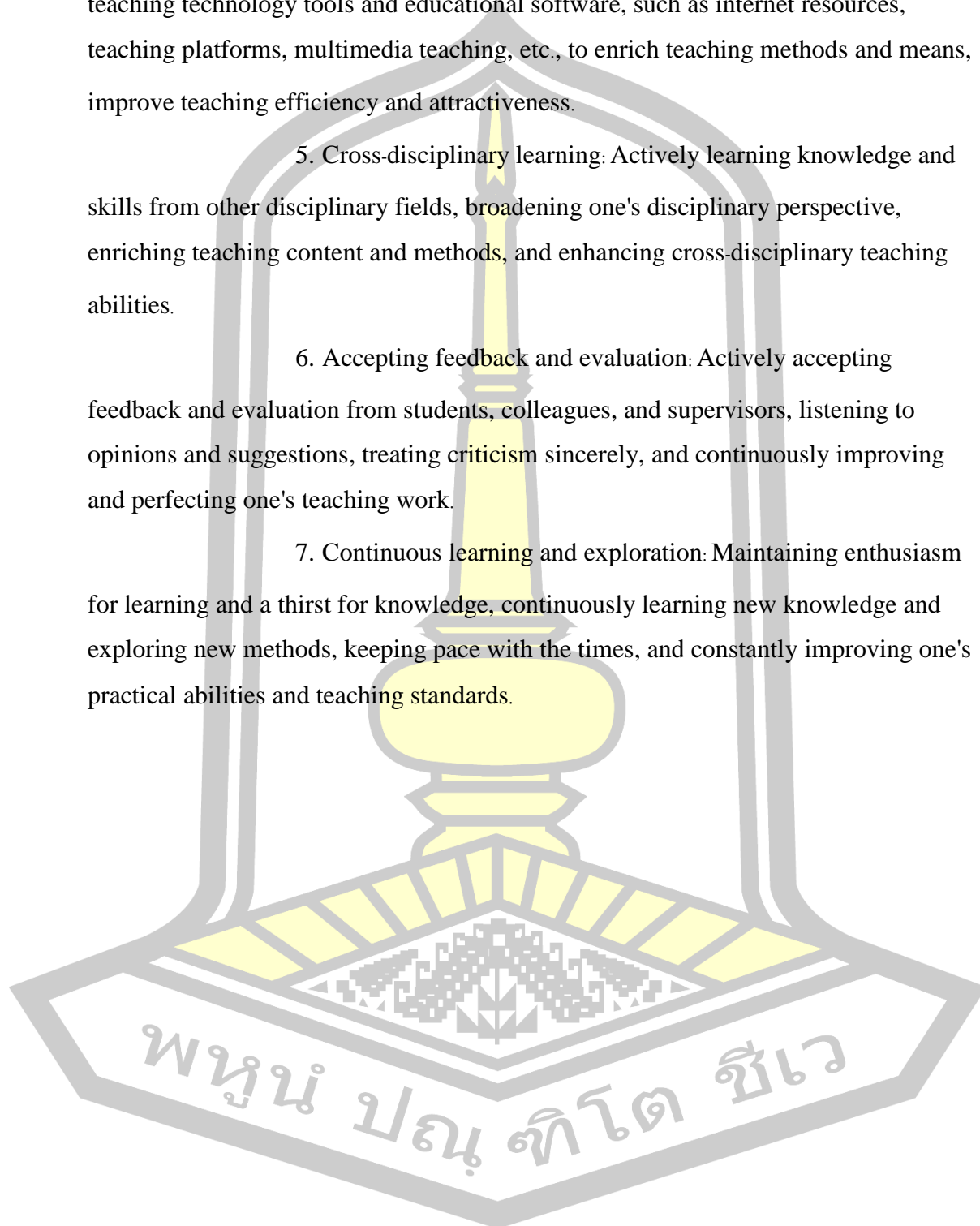
3. Reflecting and adjusting: Regularly reflecting on teaching practices, summarizing experiences and lessons learned, identifying problems and shortcomings, promptly adjusting teaching strategies and methods, continuously improving and enhancing teaching effectiveness.

4. Utilizing technological tools: Learning and flexibly utilizing teaching technology tools and educational software, such as internet resources, teaching platforms, multimedia teaching, etc., to enrich teaching methods and means, improve teaching efficiency and attractiveness.

5. Cross-disciplinary learning: Actively learning knowledge and skills from other disciplinary fields, broadening one's disciplinary perspective, enriching teaching content and methods, and enhancing cross-disciplinary teaching abilities.

6. Accepting feedback and evaluation: Actively accepting feedback and evaluation from students, colleagues, and supervisors, listening to opinions and suggestions, treating criticism sincerely, and continuously improving and perfecting one's teaching work.

7. Continuous learning and exploration: Maintaining enthusiasm for learning and a thirst for knowledge, continuously learning new knowledge and exploring new methods, keeping pace with the times, and constantly improving one's practical abilities and teaching standards.



## Activity 2: Practical ability

Instructions: Gather everyone to discuss each topic as specified and summarize the learning exchange.

1. Why is teacher Practical ability so important in the educational process?

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2. How should school administrators enhance teachers' Practical ability?

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3. Explain what problems and obstacles may arise and propose solutions.

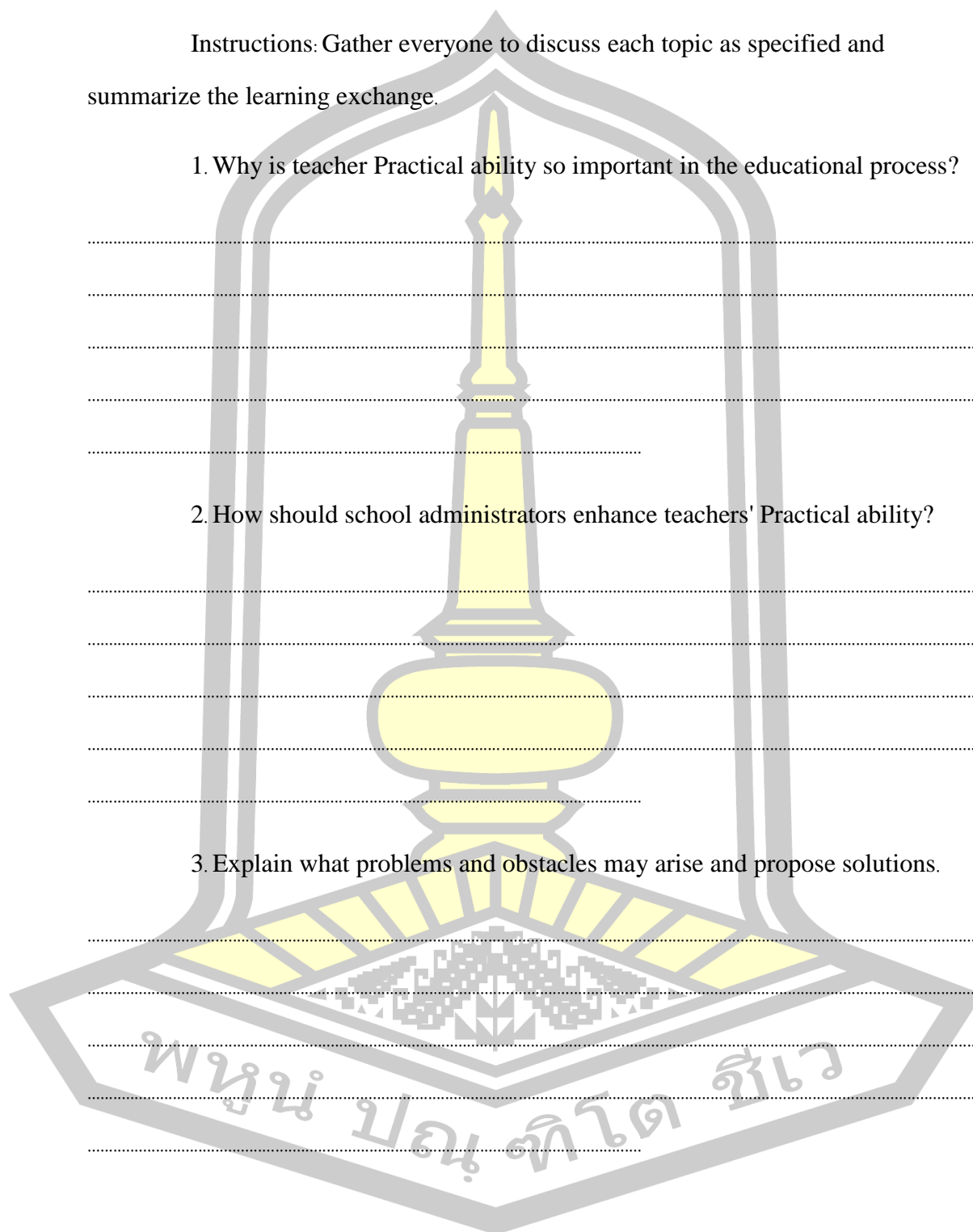
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## Module 3

### Teaching ability Duration of 15 hours

#### Principles

The importance of teachers' teaching ability in education is self-evident, as their teaching level directly determines students' learning outcomes and potential for development. Enhancing teachers' teaching ability means they can more effectively impart knowledge, stimulate students' interest in learning, guide students' thinking development, and personalize teaching according to students' characteristics and needs. This not only enhances the quality of education but also cultivates students' comprehensive qualities and innovation abilities, laying a solid foundation for their future growth and success.

#### Objectives

The purpose of enhancing teachers' teaching abilities is to optimize the quality of education and foster student development. By strengthening teachers' instructional skills, they can better integrate theoretical knowledge with practical applications, innovate teaching methods, and improve teaching effectiveness. This not only helps to stimulate students' interest and potential for learning and develop their comprehensive abilities but also cultivates more talented individuals with practical skills and innovative spirits for society, thereby driving overall progress in education and societal development.

#### Content

1. The significance and importance of teaching ability
2. Components of teaching ability
3. Establishment of teaching ability evaluation

## 4. Teaching ability learning atmosphere

**Development process**

Learning by Experience: 10.5 hours

<b>Development methods</b>	<b>Development activities (15 hours)</b>
Self-directed learning (2.5 hours)	Read education books and literature.
Learning from practical work experience(4hours)	Participate in teaching seminars and discussion activities organized by schools or disciplines, learn from others' teaching methods and experience, and promote their own growth and improvement.
Teaching tasks (4 hours)	Teachers' classroom observation activities, learn from other teachers' experience and methods, expand their own vision, improve their own level

Learning by Others: 3 hours

<b>Development methods</b>	<b>Development activities (15 hours)</b>
Learning from case studies (3 hours)	Teaching design improvement activities, communicate with fellow teachers

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Learning by Courses takes 1.5 hours.

Development methods	Development activities (15 hours)
<p>Training (1.5 hours)</p>	<p>Teaching skills training activities for teachers sequence of steps as follows:</p> <ol style="list-style-type: none"> <li>1. Lecture to provide knowledge by lecturers including: <ul style="list-style-type: none"> <li>-The significance and importance of teachers' teaching ability.</li> <li>-The process of improving teachers' teaching ability.</li> <li>-Explain the components of teaching competence.</li> </ul> </li> <li>2. Participate in group activities to exchange learning experiences, share findings, and discuss practical experiences.</li> <li>3. Discuss and present the outcomes of the activities, including exchanging learning experiences and sharing insights.</li> </ol>

#### Measurement and evaluation

1. Evaluate the results of teaching ability communication.
2. Assess the project's teaching ability management plan.
3. Evaluate the results of teaching ability management operational monitoring.
4. Assess the results presented by teaching ability management activities.

## Teaching ability

Teaching ability refers to the set of skills, knowledge, and attributes that enable an individual to effectively facilitate learning and impart knowledge or skills to others. It encompasses a wide range of competencies that go beyond just subject matter expertise.

### Component and Indicator

The key features of Teaching ability are described in 5 aspects as follows.

1. Systematic, organized, and targeted design of teaching activities.

systematic, organized, and targeted design of teaching activities is essential for promoting effective teaching and optimizing student learning outcomes. By carefully planning and structuring teaching activities, teachers can create engaging, meaningful, and impactful learning experiences for their students.

2. Have a rich reserve of teaching knowledge. A rich reserve of teaching

knowledge equips educators with the tools and strategies needed to identify and solve problems effectively. Educators with a wealth of teaching knowledge can differentiate instruction to accommodate students with diverse abilities, interests, and backgrounds.

3. Having good abilities and skills in communication and interaction. Clear

and effective communication skills enable teachers to establish and maintain a positive and orderly learning environment. Strong communication skills help teachers build positive relationships with students, parents, colleagues, and administrators.

4. Teachers should create a positive learning environment and maintain

good classroom discipline. Creating a positive learning environment and maintaining good classroom discipline are fundamental responsibilities of teachers. By establishing clear expectations, fostering a supportive atmosphere, and addressing behavior issues promptly and fairly, teachers can create an optimal learning environment where all students can thrive academically, socially, and emotionally.

### 5. Continuously learn and improve one's own knowledge and skills.

Education is an evolving field with new research, technologies, and teaching methods emerging regularly. By staying updated and continuously learning, teachers can adapt to changes in curriculum standards, student needs, and educational trends.

Teaching ability encompasses a combination of subject knowledge, pedagogical skills, interpersonal abilities, and a commitment to ongoing professional growth. Effective teachers continually strive to develop and refine these abilities to create positive learning experiences and support student success.

The purpose of improving teachers' Teaching ability:

1. Enhanced Student Learning
2. Optimized Instructional Practices
3. Increased Student Motivation
4. Better Classroom Management
5. Professional Growth and Satisfaction
6. Preparation for Future Challenges

8 ways to improve teachers' Teaching ability:

1. Participating in professional development activities: Engage in teacher training, seminars, workshops, and professional conferences to acquire the latest teaching methods, techniques, and knowledge, continuously expanding one's teaching perspective and abilities.

2. Reflecting and improving: Regularly reflect on teaching practices, summarize experiences and lessons learned, identify problems and areas for improvement, adjust teaching strategies and methods promptly, continuously improving and enhancing teaching effectiveness.

3. Observing other teachers: Observe the classroom teaching of excellent teachers, learn from their teaching methods, techniques, and experiences, borrow their successful practices, and innovate and improve upon them.

4. Collaborating with colleagues: Share teaching experiences,



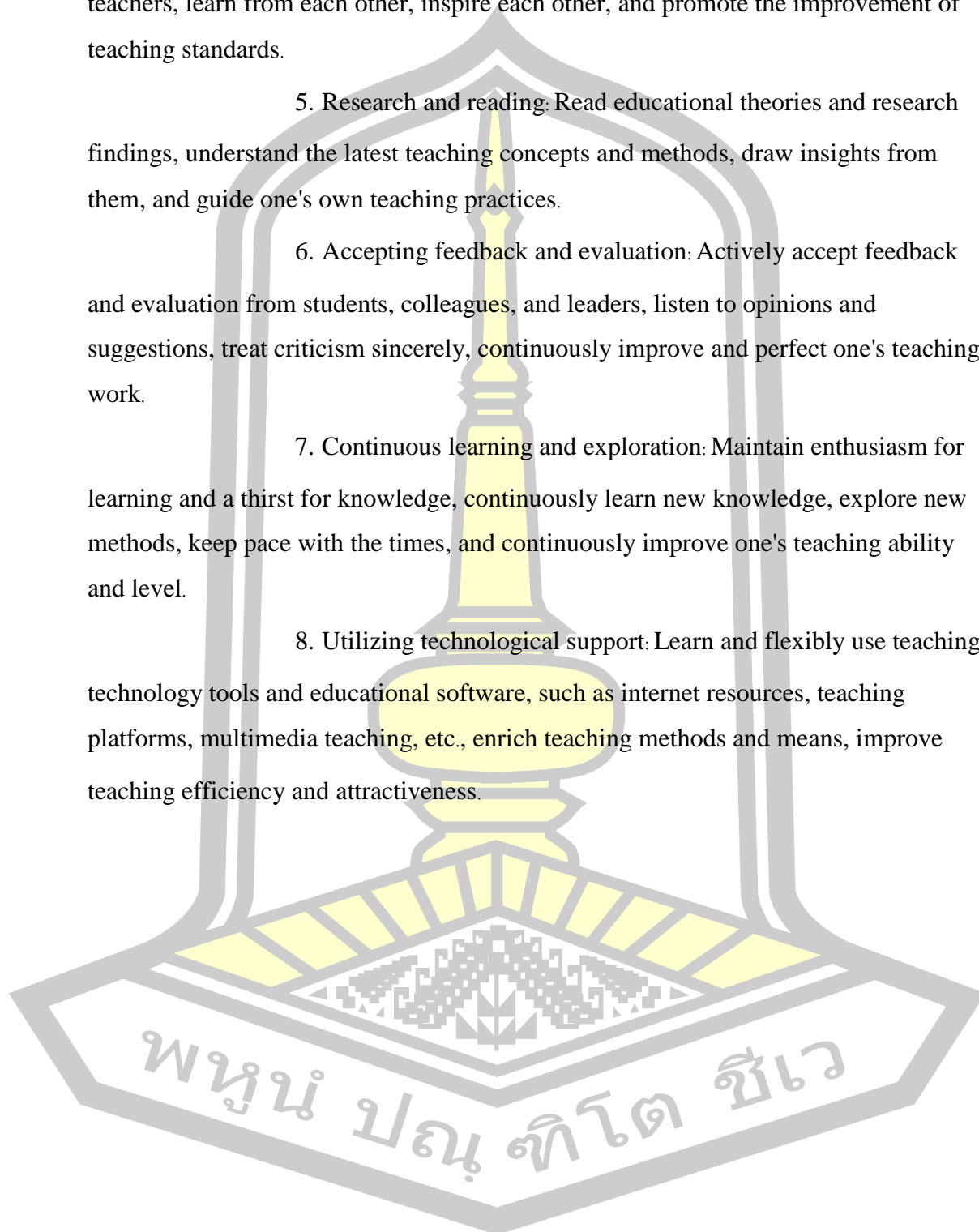
discuss teaching issues, and design teaching activities collaboratively with other teachers, learn from each other, inspire each other, and promote the improvement of teaching standards.

5. Research and reading: Read educational theories and research findings, understand the latest teaching concepts and methods, draw insights from them, and guide one's own teaching practices.

6. Accepting feedback and evaluation: Actively accept feedback and evaluation from students, colleagues, and leaders, listen to opinions and suggestions, treat criticism sincerely, continuously improve and perfect one's teaching work.

7. Continuous learning and exploration: Maintain enthusiasm for learning and a thirst for knowledge, continuously learn new knowledge, explore new methods, keep pace with the times, and continuously improve one's teaching ability and level.

8. Utilizing technological support: Learn and flexibly use teaching technology tools and educational software, such as internet resources, teaching platforms, multimedia teaching, etc., enrich teaching methods and means, improve teaching efficiency and attractiveness.



### Activity 3: Teaching ability

Instructions: Gather everyone to discuss each topic as specified and summarize the learning exchange.

1. Why is teacher Teaching ability so important in the educational process?

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2. How should school administrators enhance teachers' Teaching ability?

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3. Explain what problems and obstacles may arise and propose solutions.

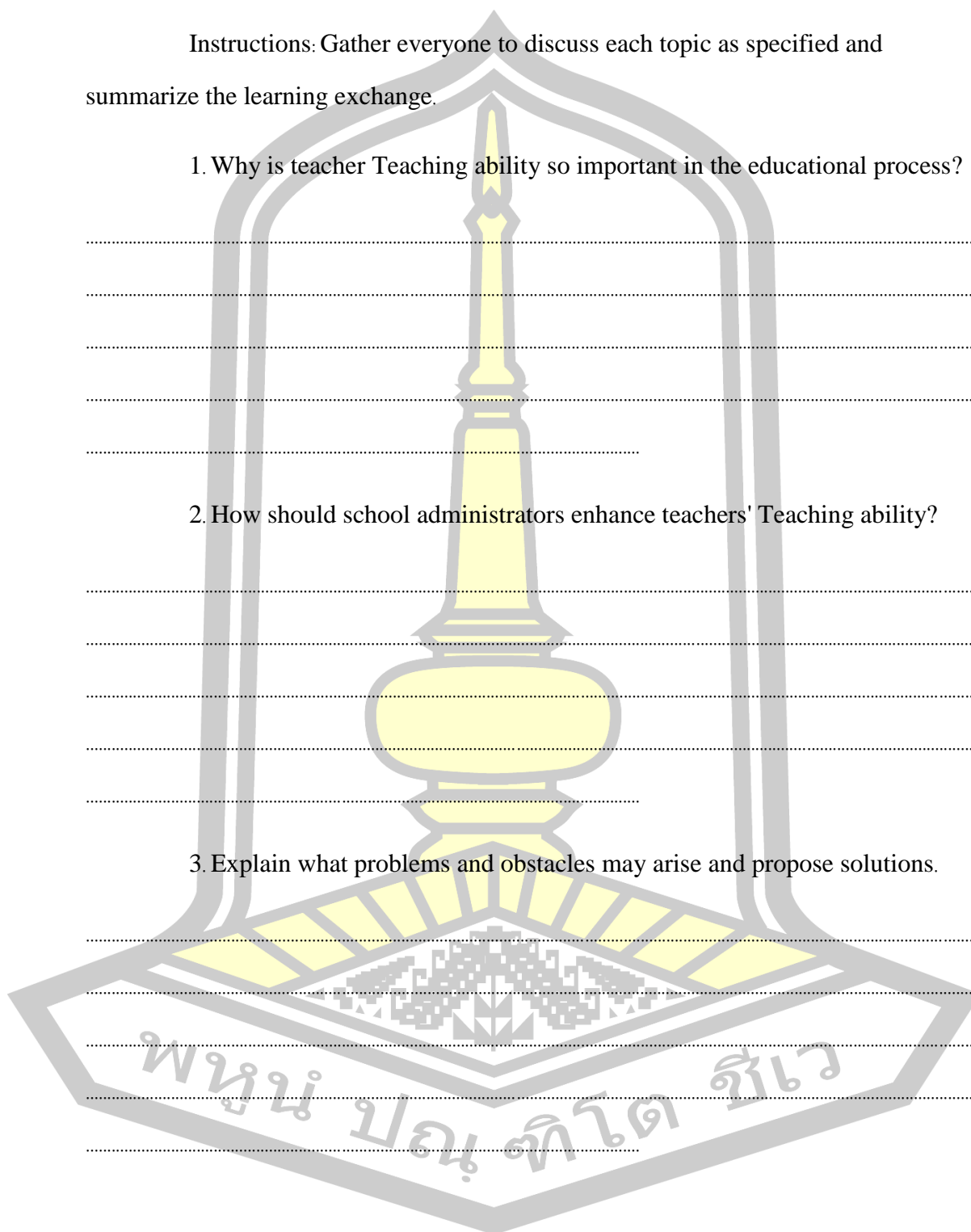
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## Module 4

### Reflection and improvement Duration of 15 hours

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#### Principles

Improvement and reflection are crucial for teachers because they prompt continuous reflection and refinement of teaching practices, thereby enhancing teaching quality and effectiveness. Improving teachers' ability to reflect and improve means they can gain deeper insights into the challenges and opportunities in the teaching process, allowing them to promptly adjust teaching methods and strategies to better meet students' learning needs. This not only contributes to teachers' professional growth but also fosters students' interest and creativity in learning, promoting comprehensive development in education.

#### Objectives

The purpose of enhancing teachers' reflection and improvement abilities is to promote their professional growth and elevate the quality of education. Through reflection, teachers can examine their teaching practices, identify issues, and seek ways for improvement, thus continually refining teaching strategies and enhancing teaching effectiveness. This capability not only fosters the deepening of teachers' individual career development but also provides students with higher-quality, more targeted educational services, thereby driving progress and development within the entire education system. Its significance lies in serving as a crucial cornerstone for teachers' continuous learning and adaptation to educational reforms.

#### Content

1. Significance and importance of improvement and reflection
2. Components of improvement and reflection

3. Cultivate behavior habits of personal improvement and reflection

4. Refining and rethinking processes to achieve success goals

### Development process

Learning by Experience: 10.5 hours

Development methods	Development activities (15 hours)
Self-directed learning (2.5 hours)	Write a teaching journal, and summarize the experience from the journal.
Learning from practical work experience(4hours)	A variety of evaluation methods and means are used to evaluate the teaching effect, including students' test scores, homework completion, classroom performance, etc
Teaching tasks (4 hours)	Invite colleagues or leaders to comment on your teaching and accept their advice and guidance.

Learning by Others: 3 hours

Development methods	Development activities (15 hours)
Learning from case studies (3 hours)	At every step of the teaching process, reflect and communicate with fellow teachers.

Learning by Courses takes 1.5 hours.

Development methods	Development activities (15 hours)
<p>Training (1.5 hours)</p>	<p>Teachers' reflective ability enhancement activities sequence of steps as follows:</p> <ol style="list-style-type: none"> <li>1. Lecture to provide knowledge by lecturers including: <ul style="list-style-type: none"> <li>-The significance and importance of teachers' ability to improve and reflect.</li> <li>-The process of improving teachers' ability to improve and reflect.</li> <li>-Explain the components of improvement and reflection.</li> </ul> </li> <li>2. Participate in group activities to exchange learning experiences, share findings, and discuss practical experiences.</li> <li>3. Discuss and present the outcomes of the activities, including exchanging learning experiences and sharing insights.</li> </ol>

#### Measurement and evaluation

1. Evaluate the results of reflection and improvement communication.
2. Assess the project's reflection and improvement management plan.
3. Evaluate the results of reflection and improvement management operational monitoring.
4. Assess the results presented by reflection and improvement management activities.

## Reflection and improvement

Reflection is the process of introspection, analyzing, and evaluating experiences, decisions, and actions. It's about looking back and understanding the reasons behind certain actions and their outcomes. Improvement refers to the process of becoming better, enhancing skills, knowledge, behaviors, or processes.

### Component and Indicator

The key features of Reflection and improvement are described in 5 aspects as follows.

1. Teachers should have a clear understanding of themselves. Understanding one's strengths, weaknesses, values, and beliefs allows teachers to reflect on their teaching practices and make informed decisions to improve their effectiveness in the classroom. By understanding their own communication style and preferences, teachers can adapt their approach to better connect with others and build positive relationships.
2. To continuously learn and consistently monitor one's own growth. The field of education is dynamic, with new research, technologies, and teaching methods emerging regularly. Continuous learning allows teachers to stay updated on best practices, innovative strategies, and advancements in their subject areas, enhancing their effectiveness in the classroom.
3. Have good judgment and decision-making abilities. Teachers need to make quick and effective decisions to maintain a positive and productive learning environment. This includes addressing behavioral issues, resolving conflicts, and managing classroom dynamics to ensure that all students can focus on learning.
4. Identify the problem through investigation, analysis, etc. Identifying problems through investigation and analysis is essential for teachers to effectively meet the needs of their students, align instruction with curriculum standards, assess student learning, manage the classroom environment, engage in professional

development, and make data-informed decisions. By honing their skills in problem identification, teachers can create supportive and inclusive learning environments where all students can succeed.

5. Capable of analyzing problems comprehensively from multiple perspectives. Teachers encounter a diverse range of learners in their classrooms, each with unique backgrounds, abilities, and learning styles. By analyzing problems from multiple perspectives, teachers can gain a deeper understanding of students' individual needs and tailor their instruction to support diverse learners effectively.

Reflection and improvement are essential components of effective teaching practice. By engaging in regular reflection, setting goals for improvement, and implementing changes based on feedback and evidence, teachers can enhance their teaching effectiveness, promote student learning, and create a positive and supportive classroom environment.

The purpose of improving teachers' Reflection and improvement:

1. Enhanced Teaching Effectiveness
2. Professional Growth
3. Student Learning Outcomes
4. Personal Satisfaction and Fulfillment
5. Creating a Culture of Continuous Improvement
6. Adaptation to Change

8 ways to improve teachers' Reflection and improvement:

1. Personal Reflection: Teachers can examine their teaching practices through personal reflection. This includes regularly reviewing classroom teaching situations, student performance and feedback, reflecting on successes and challenges in teaching, and considering how to improve teaching strategies and methods.

2. Colleague Collaboration: Sharing teaching experiences, perspectives, and methods with colleagues is an important way to enhance reflection

and improvement skills. Through communication with colleagues, teachers can gain new ideas and perspectives, learn from others' experiences, and borrow successful practices.

3. Learning Groups: Joining teaching study groups or professional development teams can promote cooperation and shared learning among teachers. In learning groups, teachers can discuss teaching issues, share resources and experiences, support and motivate each other, and grow and improve together.

4. Classroom Observation: Observing other teachers' classroom teaching is an effective way to enhance reflection and improvement skills. By observing the teaching practices of excellent teachers, teachers can gain new inspiration and ideas, identify their own blind spots, and learn from others' successful experiences.

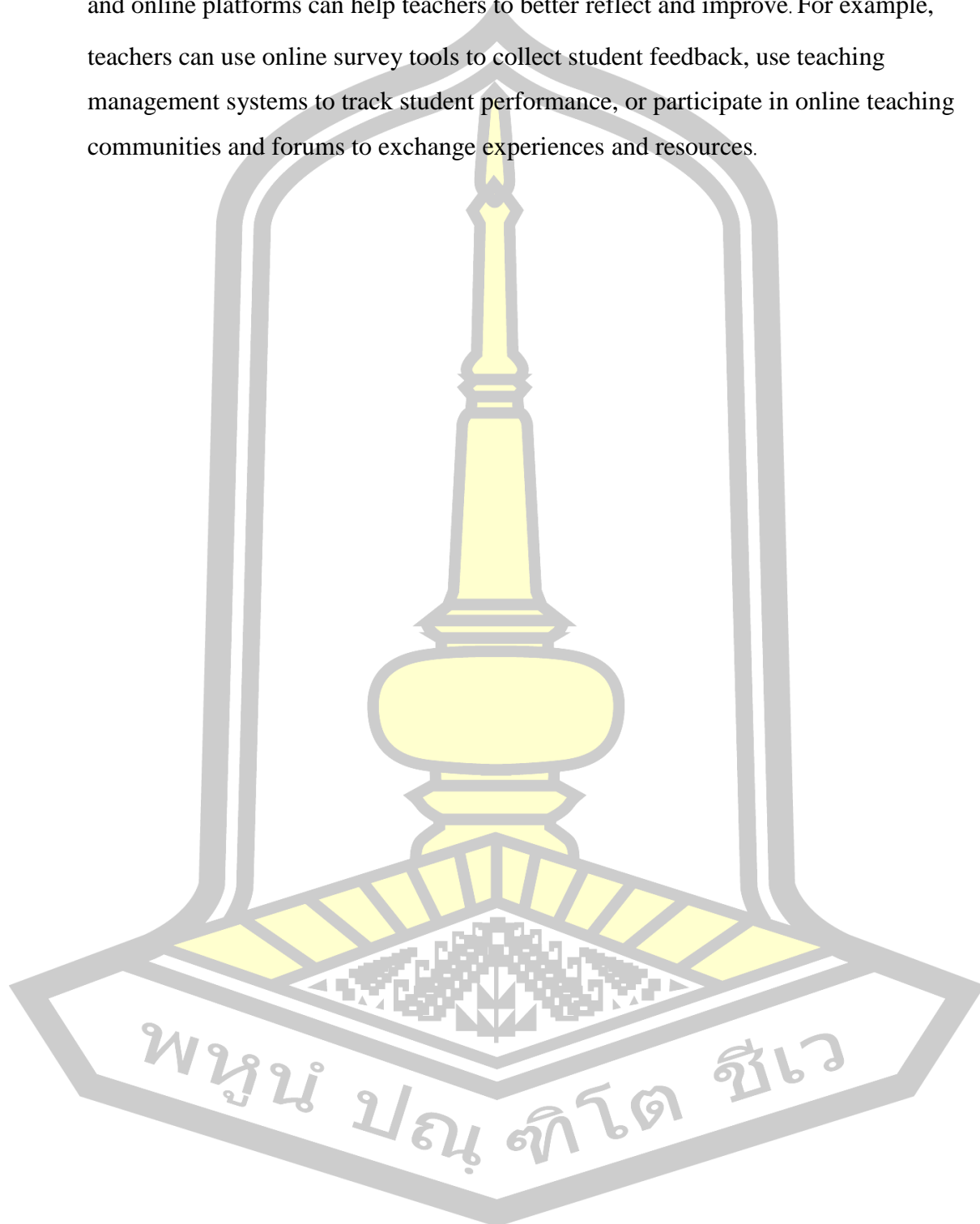
5. Teaching Journal: Keeping a teaching journal is a useful tool to help teachers reflect and improve. Teachers can record the teaching process, student performance, observations, and thoughts for each class in the teaching journal, for later analysis and reflection to identify problems and directions for improvement.

6. Professional Training: Participating in professional training and workshops is an important way to enhance teachers' reflection and improvement skills. During training and workshops, teachers can access the latest teaching theories, research results, and practical experiences, broaden their teaching horizons and abilities.

7. Student Feedback: Seeking feedback from students is an important way to help teachers understand the effectiveness of their teaching. Teachers can collect students' opinions and suggestions through surveys, group discussions, or one-on-one communication, to understand their views and expectations on teaching, and then make targeted improvements.



8. Use of Technological Tools: Utilizing teaching technology tools and online platforms can help teachers to better reflect and improve. For example, teachers can use online survey tools to collect student feedback, use teaching management systems to track student performance, or participate in online teaching communities and forums to exchange experiences and resources.



### Activity 4: Reflection and improvement

Instructions: Gather everyone to discuss each topic as specified and summarize the learning exchange.

1. Why is teacher Reflection and improvement so important in the educational process?

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2. How should school administrators enhance teachers' Reflection and improvement?

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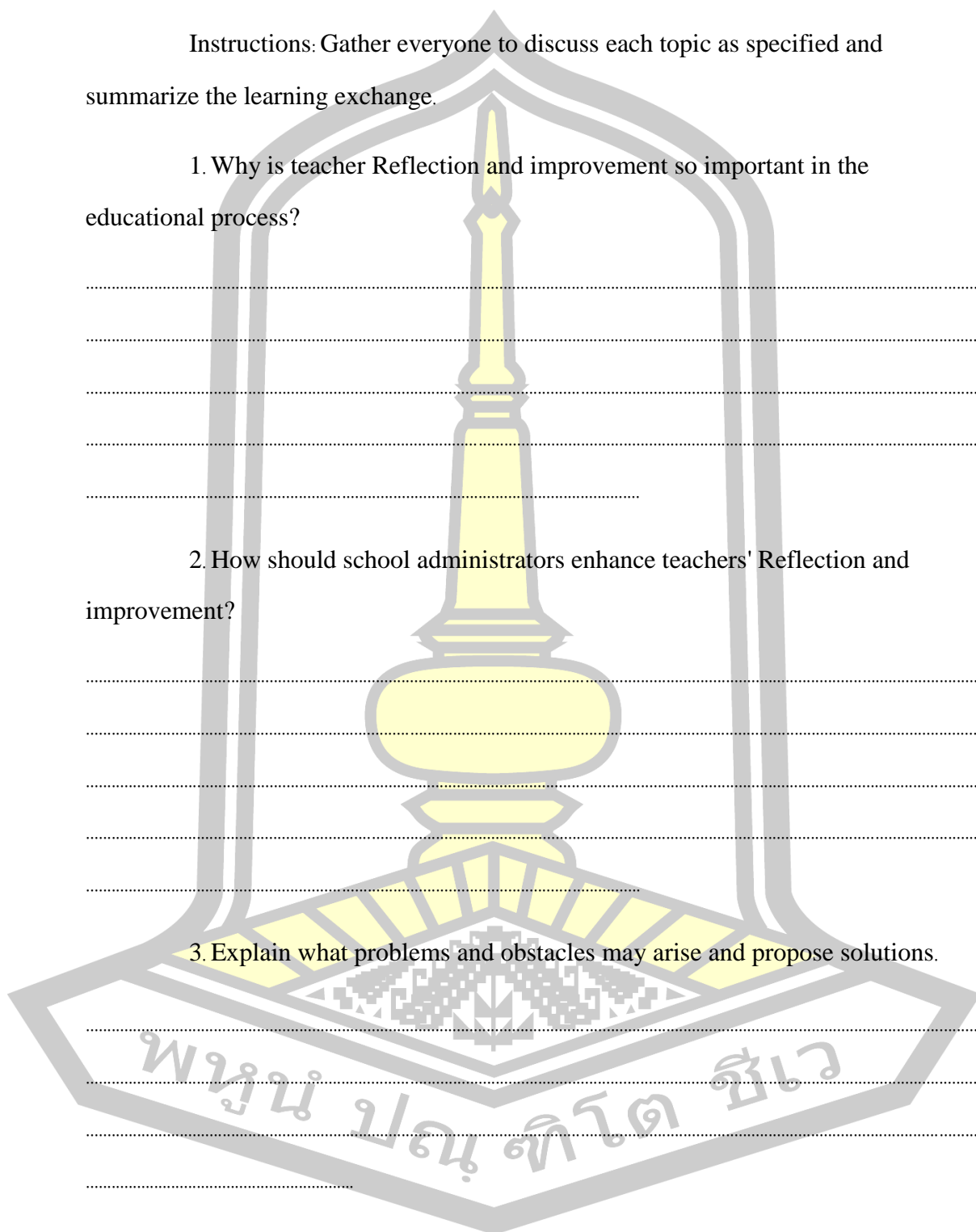
3. Explain what problems and obstacles may arise and propose solutions.

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## Module 5

### Teacher-student relationship Duration of 20 hours

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#### Principles

The teacher-student relationship is crucial in teaching as it directly influences students' learning experiences and outcomes. A positive teacher-student relationship is built on a foundation of respect, trust, and understanding, fostering a conducive learning environment that enhances students' motivation and engagement. This relationship facilitates close communication and interaction, enabling teachers to better understand students' needs and potential, thus providing personalized guidance and support for their learning. Ultimately, a good teacher-student relationship not only promotes students' academic development but also cultivates their social and emotional skills, laying a solid foundation for their future growth and success.

#### Objectives

The purpose of improving teacher-student relationships is to create a positive, harmonious, and interactive educational environment, enhancing teaching effectiveness and fostering students' comprehensive development. Optimizing this relationship helps to foster mutual understanding, trust, and respect between teachers and students, inspiring students' learning motivation and creativity, while also enhancing teachers' job satisfaction and sense of accomplishment. Its significance extends beyond education and teaching itself, as it positively influences students' personality development, social adaptation skills, and future interpersonal abilities, making it a crucial factor in achieving comprehensive educational goals.

## Content

1. The significance and importance of a good teacher-student relationship
2. Elements of improving teacher-student relationship
3. Develop communication skills
4. Establish and organize communication and interaction between teachers and students

## Development process

Learning by Experience: 14 hours

Development methods	Development activities (20 hours)
Self-directed learning (4 hours)	Consult relevant books to learn effective communication skills
Learning from practical work experience (6 hours)	Participate in student activities and understand the individual needs of students
Teaching tasks (4 hours)	Exchange activities between teachers and students

Learning by Others: 4 hours

Development methods	Development activities (20 hours)
Brainstorming (4 hours)	Brainstorm with students to encourage creative thinking and collective collaboration to spark new ideas and problem-solving approaches

Learning by Courses takes 2 hours.

Development methods	Development activities (20 hours)
Training (2 hours)	<p>How to be a good friend of students Training activities sequence of steps as follows:</p> <ol style="list-style-type: none"> <li>1. Lecture to provide knowledge by lecturers including: <ul style="list-style-type: none"> <li>- The significance and importance of teacher-student relationship.</li> <li>- The process of maintaining teacher-student relationship.</li> <li>- Explain the components of the teacher-student relationship</li> </ul> </li> <li>2. Participate in group activities to exchange learning experiences, share findings, and discuss practical experiences.</li> <li>3. Discuss and present the results of the activities.</li> </ol>

#### Measurement and evaluation

1. Evaluate the results of teacher-student relationship communication.
2. Assess the project's teacher-student relationship management plan.
3. Evaluate the results of teacher-student relationship management operational monitoring.
4. Assess the results presented by teacher-student relationship management activities.

## Teacher-student relationship

The teacher-student relationship is a foundational element in the educational process and plays a crucial role in shaping a student's academic and personal development. This relationship is multifaceted and can influence not only academic achievement but also the emotional and social growth of students.

### Component and Indicator

The key features of teacher-student relationship are described in 5 aspects as follows.

1. Being able to care about students' academic progress and development. When teachers demonstrate genuine concern for their students' academic growth, students are more likely to feel valued and motivated to engage in learning activities. This positive relationship between teacher and student fosters a supportive classroom environment conducive to learning.
2. Having the ability to make students with mental health or emotional issues feel calmer and less worried. When teachers demonstrate empathy and understanding towards students' mental health and emotional well-being, it creates a safe and supportive classroom environment where students feel comfortable expressing their feelings and seeking help when needed.
3. Having the personal skills necessary for successful social communication and interaction. Effective social communication skills enable teachers to build positive relationships with students, colleagues, parents, and other stakeholders. By fostering trust, respect, and rapport, teachers can create a supportive and collaborative learning environment.
4. Provide students with correct guidance in academic, emotional, and other aspects. Teachers provide students with clear instructions, resources, and strategies to help them achieve their academic goals and fulfill their potential.

5. Concerned about students' behavioral development. being concerned about students' behavioral development is essential for creating a positive learning environment, supporting social and emotional growth, addressing individual needs, promoting positive relationships, preventing and managing challenges, collaborating with families and support services, and fostering responsible citizenship.

The teacher-student relationship is a cornerstone of effective teaching and learning. By fostering positive relationships based on respect, trust, and support, teachers create a nurturing and inclusive learning environment where all students can thrive academically, socially, and emotionally.

The purpose of improving Teacher-student relationship:

1. Enhanced Learning Outcomes
2. Social and Emotional Development
3. Behavioral Management
4. Increased Engagement and Participation
5. Personalized Support
6. Positive School Climate

8 ways to improve Teacher-student relationship:

1. Establishing Positive Communication Channels: Establishing open and transparent communication channels is key to improving the teacher-student relationship. Teachers should encourage students to share their thoughts, feelings, and concerns, and listen to their opinions and suggestions. Timely and effective communication can enhance mutual understanding and respect.

2. Expressing Care and Support: Expressing care and support for students helps build a close teacher-student relationship. Teachers can demonstrate their concern by paying attention to students' personal growth, carefully listening to their questions and concerns, and providing positive feedback and encouragement.

3. Respect and Recognition: Respect is the foundation of a good teacher-student relationship. Teachers should respect each student's individuality,

cultural background, and viewpoints, and give them sufficient recognition and appreciation. This respect can enhance students' self-esteem and confidence.

4. Building Trusting Relationships: Establishing trusting relationships between teachers and students is crucial. Teachers need to demonstrate honesty, reliability, and consistency, making students believe they can rely on and trust their teachers.

5. Personalized Care: Understanding each student's personality traits, interests, and learning needs, and providing them with personalized care and support. This can be achieved through communication with students, observing and understanding their behaviors and performances.

6. Actively Resolving Issues: Promptly addressing any conflicts or issues between teachers and students, and finding solutions. Valuing students' feedback, taking their opinions and suggestions seriously, to resolve potential issues and improve the teacher-student relationship.

7. Creating a Cooperative and Participatory Atmosphere: Encouraging students to participate in classroom activities, discussions, and decision-making processes, fostering a cooperative and sharing atmosphere. By participating in projects, group work, and extracurricular activities together, the interaction and collaboration between teachers and students can be enhanced.

8. Providing Support and Guidance: Offering students support and guidance in their learning and personal aspects. Teachers can provide academic assistance to students, guide them in problem-solving, and encourage them to develop their potential.



### Activity 5: Teacher-student relationship

Instructions: Gather everyone to discuss each topic as specified and summarize the learning exchange.

1. Why is teacher-student relationship so important in the educational process?

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2. How should school administrators enhance teacher-student relationship?

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3. Explain what problems and obstacles may arise and propose solutions.

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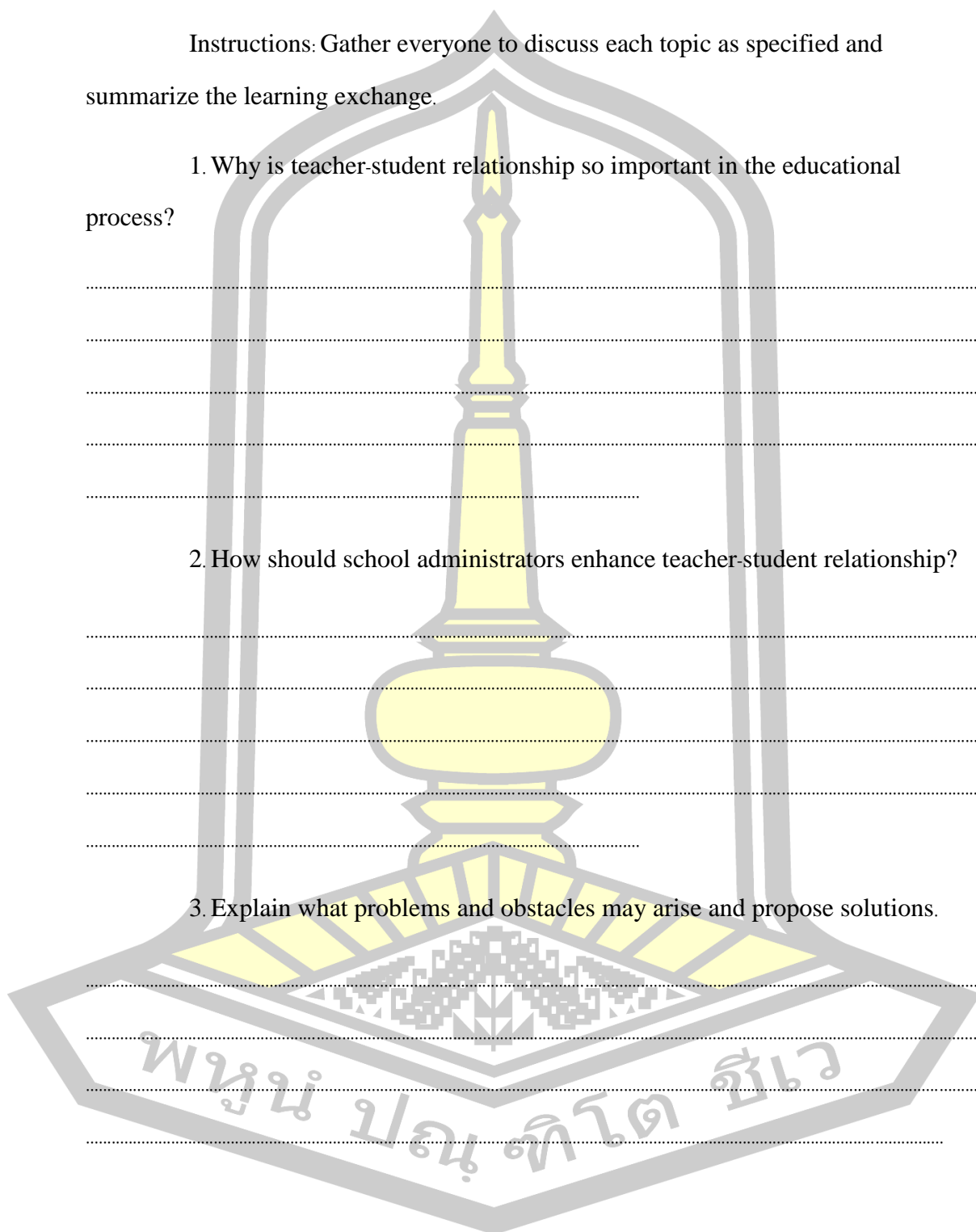
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## Assessment form of Double-Qualified teachers competency improvement program of local applied university

Assessment form of Double-Qualified teachers competency improvement program of local applied university, this is an assessment tool, The aim is to improve the competency of Double-Qualified teachers in local applied universities. This evaluation form is designed to assess the suitability, accuracy and feasibility of the developed project. This evaluation form is divided into the following 2 parts:

**Part 1:** General Information of Qualified Personnel

**Part 2:** Evaluation of the suitability, accuracy and feasibility evaluation of the dual teacher ability training project in local applied university

**Instructions:** Please read each statement carefully, then tick the box (☐) as to whether you think the program is suitable for developing dual qualified teachers in local applied universities, using the following evaluation criteria, divided into the following 5 levels:

4.51 - 5.00 refers to suitability, accuracy and feasibility as very high

3.51 - 4.50 refers to suitability, accuracy and feasibility as high

2.51 - 3.50 refers to suitability, accuracy and feasibility as a medium

1.51 - 2.50 refers to suitability, accuracy and feasibility as low

1.00 - 1.50 refers to suitability, accuracy and feasibility as very low

## Part 1: General Information of Qualified Personnel

Name of the respondent completing the assessment form: .....

Existent condition position title: .....

Existent condition position held: .....

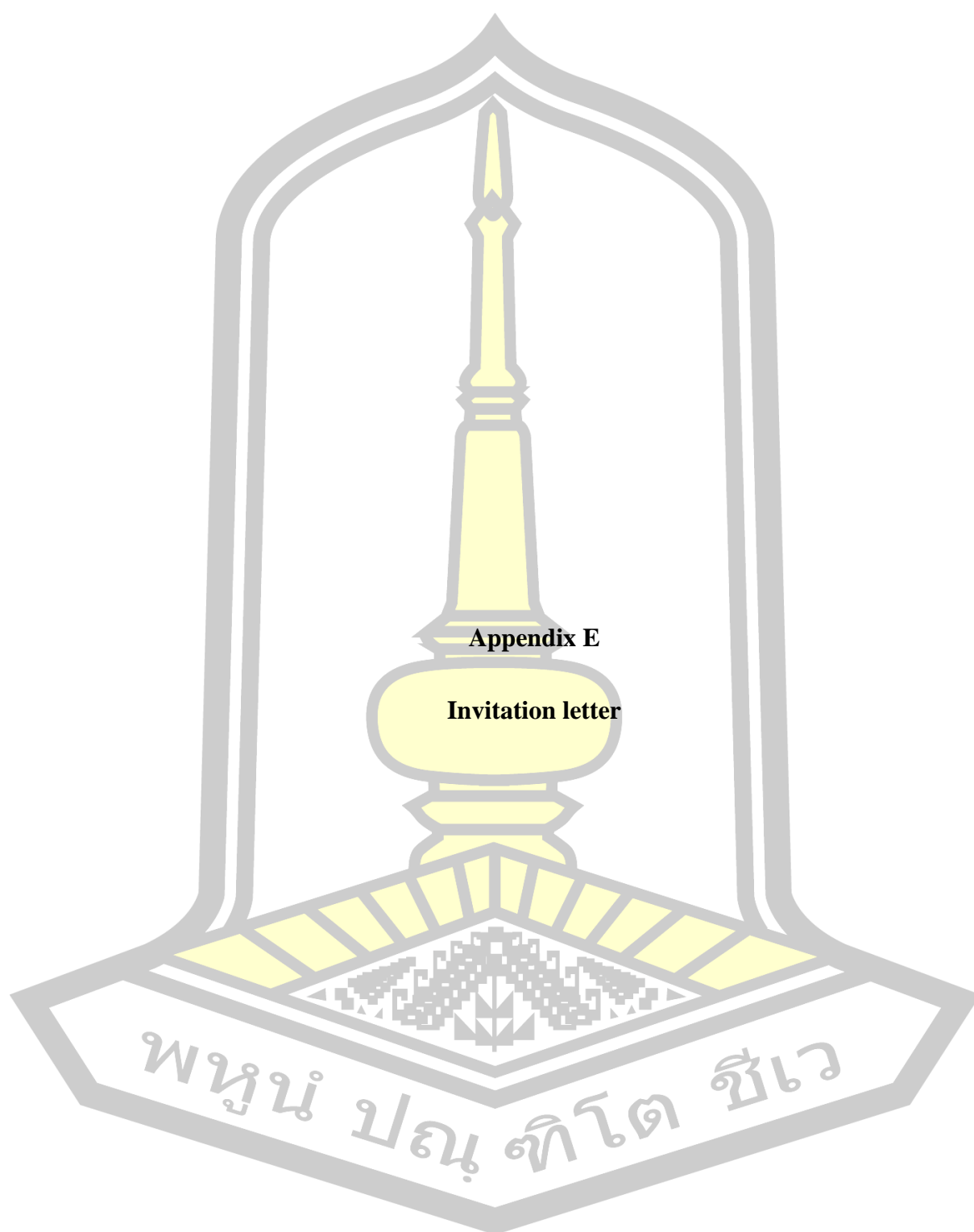
Workplace location: .....

## Part 2: Evaluation of the suitability and feasibility evaluation of the dual teacher ability training project in local applied university

**Instructions:** Please mark (☐) the appropriate score in the box that you believe is suitable.

Evaluation list	Suitability					Accuracy					Feasibility				
	5	4	3	2	1	5	4	3	2	1	5	4	3	2	1
1. Principles															
2. Objectives															
3. Contents															
3.1 Module 1: Proper ethics															
3.2 Module 2: Practical ability															
3.3 Module 3: Teaching ability															
3.4 Module 4: Reflection and Improvement															







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Center for International Affairs

MHERSI No. 0605.5 (1) / 496

Date: February 28, 2024

**To: Whom it May Concern**

Baise University, Baise City, Guangxi Province, China

**Subject: Data Collection Permission Request**

Our student, **Ms. Luo Qing**, student number **64010561025**, majoring in the Ed.D. Educational Administration and Development program is currently undertaking a research project under the guidance of **Asst. Prof. Thatchai Chittranun**.

To ensure the success and quality of this project, we are seeking your permission to allow our student to process data collection within your institution.

The details of the data collection are as follows:

Thesis title: **"Program to Enhance the Double-Qualified Teachers Competency in Local Applied University"**

The period of data collection: **March, 2024 to July, 2024.**

We believe that your institution provides a valuable environment and resources that are essential for the successful execution of this research. The data collection process will be carried out diligently and with the utmost respect for your institution's policies and procedures. We acknowledge that the student has made the necessary preparations, including obtaining the Thesis title approval from our institution.

Should you require any further information or clarification regarding this permission, please feel free to contact us by email.

Yours sincerely,

**Assoc. Prof. Chowwalit Chookhampaeng**

Dean, Faculty of Education,  
Mahasarakham University



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**MAHASARAKHAM UNIVERSITY**

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44000, THAILAND  
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Center for International Affairs

MHERSI No. 0605.5 (1) /CL495

Date: February 28, 2024

**To:** **Assoc. Prof. Pacharawit Chansirisira**  
Faculty of Education, MSU

**Subject:** **Thesis Reviewer Invitation**

Our student, **Ms. Luo Qing**, student ID **64010561025**, majoring in the Ed. D. Educational Administration and Development program is currently undertaking a research project titled **"Program to Enhance the Double-Qualified Teachers Competency in Local Applied University"** under the guidance of **Asst. Prof. Thatchai Chittranun**.

To ensure the successful execution and the highest quality of this research project, we are seeking your valuable expertise and experience. Therefore, I am delighted to extend a formal invitation to you to serve as a reviewer for the research instrument designed for this thesis project.

Your participation in this academic endeavor is highly valued and appreciated. Should you require any further information or have questions regarding this invitation, please do not hesitate to contact us by email.

Yours sincerely,

**Assoc. Prof. Chowwalit Chookhampaeng**

Dean, Faculty of Education,  
Mahasarakham University



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Center for International Affairs

MHERSI No. 0605.5 (1) /CL495

Date: February 28, 2024

**To:** **Assoc. Prof. Suwat Julsuwan**  
Faculty of Education, MSU

**Subject:** **Thesis Reviewer Invitation**

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Yours sincerely,

**Assoc. Prof. Chowwalit Chookhampaeng**

Dean, Faculty of Education,  
Mahasarakham University





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Center for International Affairs

MHERSI No. 0605.5 (1) /CL495

Date: February 28, 2024

**To: Prof. Liu Fang**  
Vice President of Baise University,  
Baise University, China

**Subject: Thesis Reviewer Invitation**

Our student, **Ms. Luo Qing**, student ID **64010561025**, majoring in the Ed. D. Educational Administration and Development program is currently undertaking a research project titled "**Program to Enhance the Double-Qualified Teachers Competency in Local Applied University**" under the guidance of **Asst. Prof. Thatchai Chittranun**.

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**Assoc. Prof. Chowwalit Chookhampaeng**  
Dean, Faculty of Education,  
Mahasarakham University



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Center for International Affairs

MHERSI No. 0605.5 (1) /CL495

Date: February 28, 2024

**To: Prof. Huang Jianxiong**  
Dean of Faculty of Continuing Education  
Baise University, China

**Subject: Thesis Reviewer Invitation**

Our student, **Ms. Luo Qing**, student ID **64010561025**, majoring in the Ed. D. Educational Administration and Development program is currently undertaking a research project titled "**Program to Enhance the Double-Qualified Teachers Competency in Local Applied University**" under the guidance of **Asst. Prof. Thatchai Chittranun**.

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Yours sincerely,

**Assoc. Prof. Chowwalit Chookhampaeng**  
Dean, Faculty of Education,  
Mahasarakham University



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Center for International Affairs

MHERSI No. 0605.5 (1) /CL495

Date: February 28, 2024

**To: Prof. Zhou Dingbo**  
Vice President of Science and technology Normal University  
Science and technology Normal University, China

**Subject: Thesis Reviewer Invitation**

Our student, **Ms. Luo Qing**, student ID **64010561025**, majoring in the Ed. D. Educational Administration and Development program is currently undertaking a research project titled "**Program to Enhance the Double-Qualified Teachers Competency in Local Applied University**" under the guidance of **Asst. Prof. Thatchai Chittranun**.

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**Assoc. Prof. Chowwalit Chookhampaeng**  
Dean, Faculty of Education,  
Mahasarakham University



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Center for International Affairs

MHERSI No. 0605.5 (1) /CL495

Date: February 28, 2024

**To: Prof. Cao Alin**  
Director of Teaching Management,  
Baise University, China

**Subject: Thesis Reviewer Invitation**

Our student, **Ms. Luo Qing**, student ID **64010561025**, majoring in the Ed. D. Educational Administration and Development program is currently undertaking a research project titled "**Program to Enhance the Double-Qualified Teachers Competency in Local Applied University**" under the guidance of **Asst. Prof. Thatchai Chittranun**.

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Yours sincerely,

**Assoc. Prof. Chowwalit Chookhampaeng**  
Dean, Faculty of Education,  
Mahasarakham University



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Center for International Affairs

MHERSI No. 0605.5 (1) /CL495

Date: February 28, 2024

**To: Prof. Jiang Hongxing**  
Vice President of Hezhou University  
Hezhou University, China

**Subject: Thesis Reviewer Invitation**

Our student, **Ms. Luo Qing**, student ID **64010561025**, majoring in the Ed. D. Educational Administration and Development program is currently undertaking a research project titled "**Program to Enhance the Double-Qualified Teachers Competency in Local Applied University**" under the guidance of **Asst. Prof. Thatchai Chittranun**.

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Dean, Faculty of Education,  
Mahasarakham University





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Center for International Affairs

MHERSI No. 0605.5 (1) /CL495

Date: February 28, 2024

**To: Prof. Wen Fengping**  
Dean of Faculty of Civil Engineering and Architecture  
Baise University, China

**Subject: Thesis Reviewer Invitation**

Our student, **Ms. Luo Qing**, student ID **64010561025**, majoring in the Ed. D. Educational Administration and Development program is currently undertaking a research project titled "**Program to Enhance the Double-Qualified Teachers Competency in Local Applied University**" under the guidance of **Asst. Prof. Thatchai Chittranun**.

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Dean, Faculty of Education,  
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Center for International Affairs

MHERSI No. 0605.5 (1) /CL495

Date: February 28, 2024

**To: Prof. Wang Fang**  
Director of Faculty Development Center,  
Baise University, China

**Subject: Thesis Reviewer Invitation**

Our student, **Ms. Luo Qing**, student ID **64010561025**, majoring in the Ed. D. Educational Administration and Development program is currently undertaking a research project titled "**Program to Enhance the Double-Qualified Teachers Competency in Local Applied University**" under the guidance of **Asst. Prof. Thatchai Chittranun**.

To ensure the successful execution and the highest quality of this research project, we are seeking your valuable expertise and experience. Therefore, I am delighted to extend a formal invitation to you to serve as a reviewer for the research instrument designed for this thesis project.

Your participation in this academic endeavor is highly valued and appreciated. Should you require any further information or have questions regarding this invitation, please do not hesitate to contact us by email.

Yours sincerely,

**Assoc. Prof. Chowwalit Chookhampaeng**  
Dean, Faculty of Education,  
Mahasarakham University



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Center for International Affairs

MHERSI No. 0605.5 (1) /CL495

Date: February 28, 2024

**To: Prof. Wu Xianyong**  
Dean of Faculty of International exchange  
Baise University, China

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Center for International Affairs

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Date: February 28, 2024

**To: Prof. Yang Wengui**  
Dean of Faculty of Faculty of teacher education  
Baise University, China

**Subject: Thesis Reviewer Invitation**

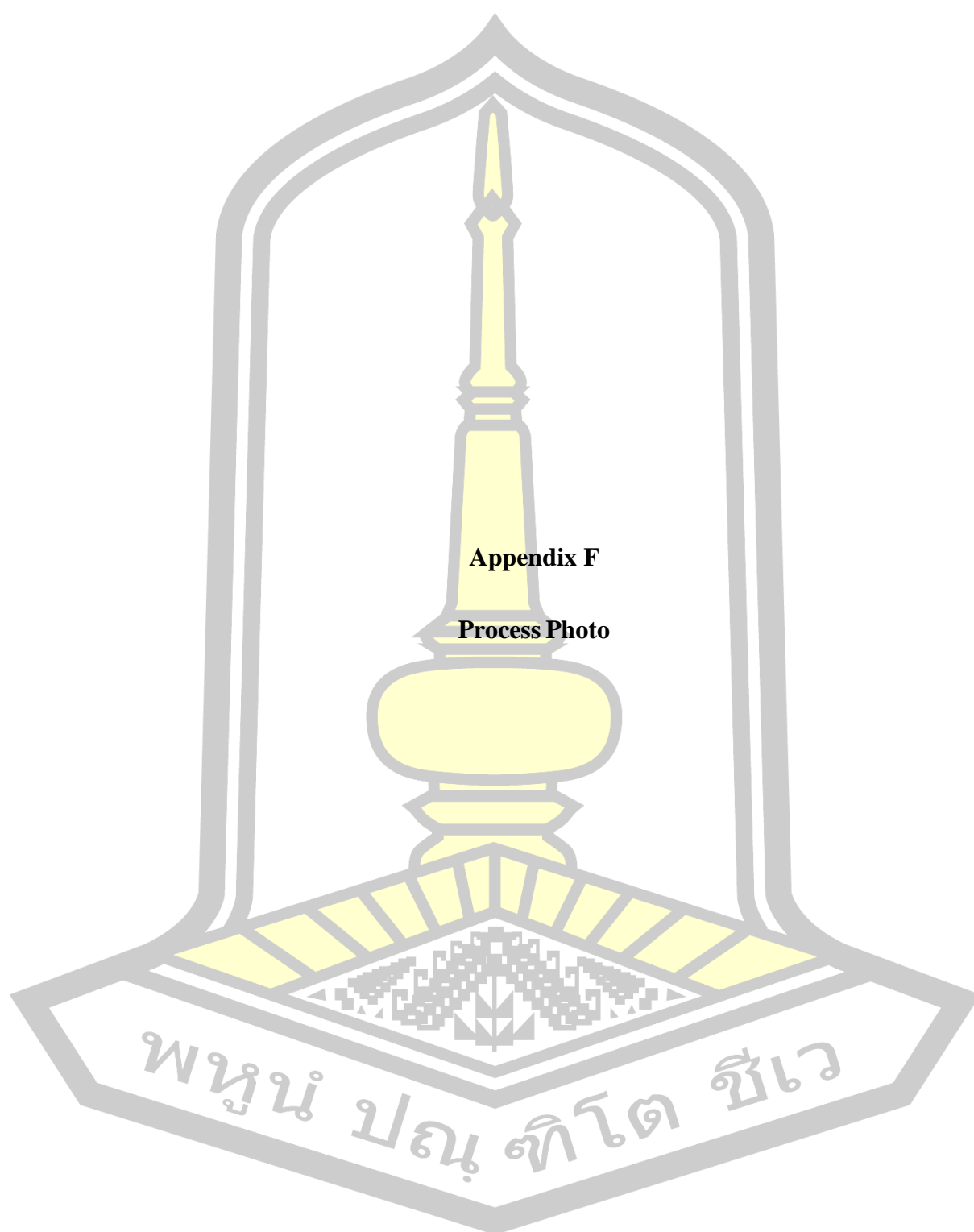
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Mahasarakham University





Collect early data and listen to expert opinions



Conducting research activities at Baise University

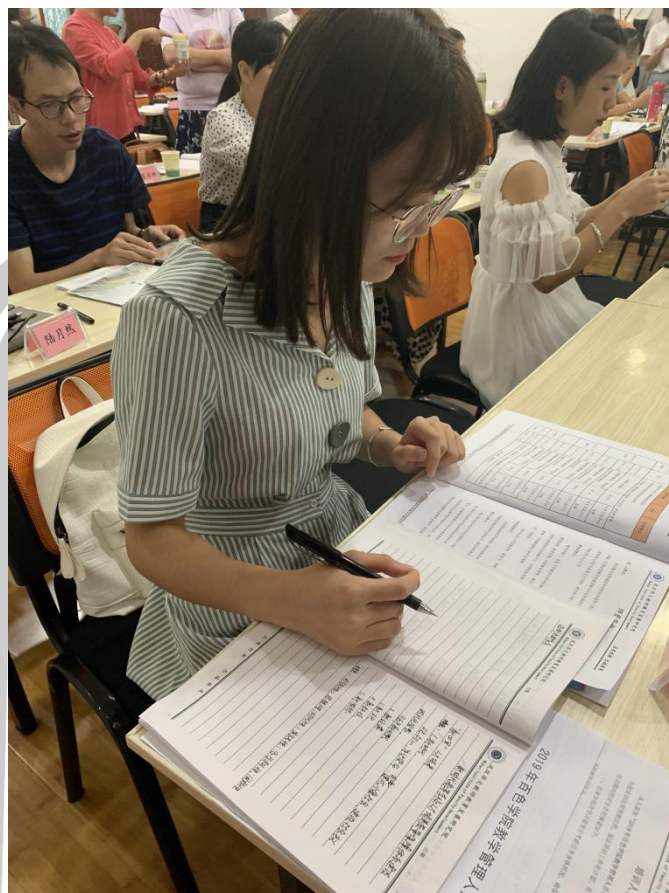




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The components and indicators are tested by experts and the effectiveness of each component and indicator is tested by the project Consistency Index (IOC).



Organize teachers to fill out questionnaires



Experts review research and development tools to give their opinion on the consistency of the problem



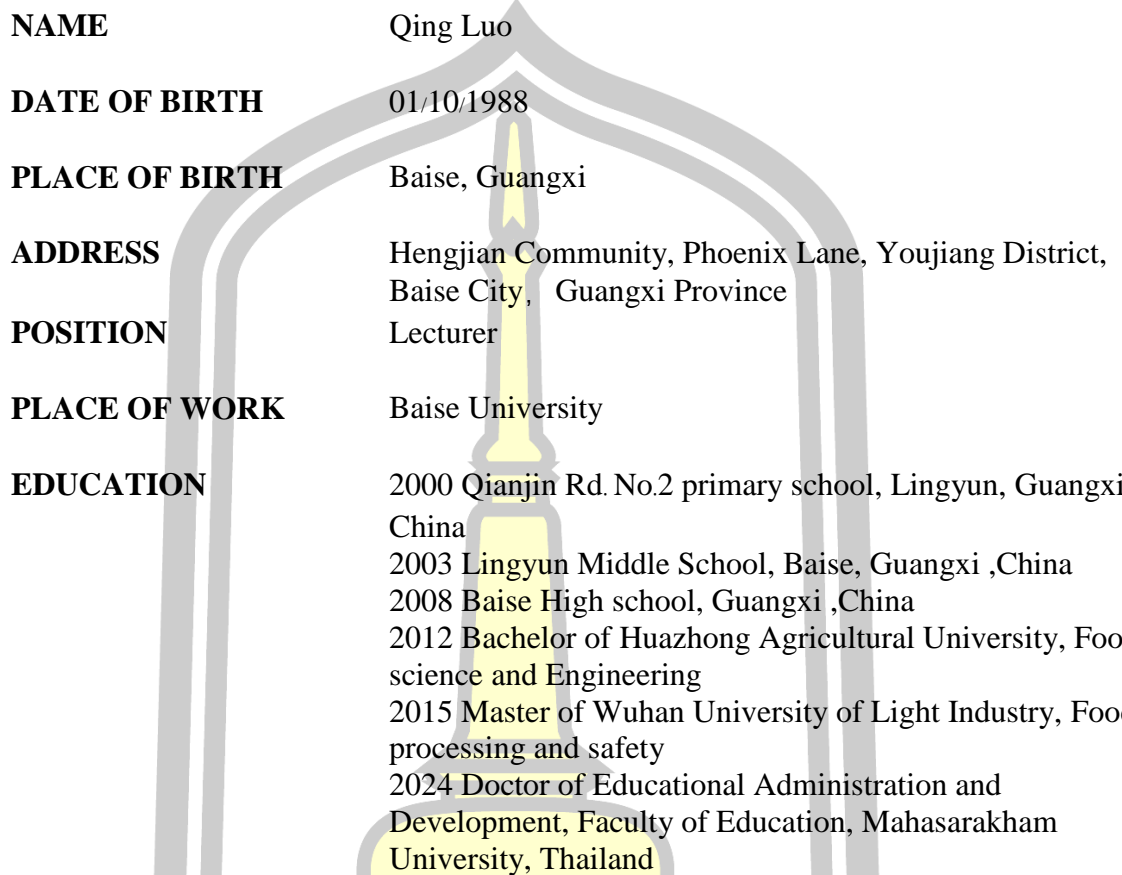


Experts review the procedures of the research program and give their opinion on the consistency of the problem



Experts assess the suitability, accuracy and feasibility of the project to enhance the dual qualification

## BIOGRAPHY



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