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DEVELOPING TEACHER PROFESSIONAL COMPETENCE FOR ETHNIC STUDENTS AT THE UNIVERSITIES IN THE NORTHERN MOUNTAINOUS REGION

DISSERTATION SUMMARY

LIST OF PUBLISHED WORKS
RELATED TO THE THESIS

1. Hoang Trung Thang (2015), "Linking forces to develop professional competence for students of pedagogical universities", *Journal of Educational Equipment*, pp.166-167.
2. Hoang Trung Thang, Vu Thi Phuong Thao (2017), "Combining traditional training methods with online training methods to develop professional competence for students of pedagogical universities", *Journal of Education and Society*, pp.209-212.
3. Hoang Trung Thang, Vu Thi Phuong Thao (2018), "Standardizing lectures of lecturers in the direction of developing professional competence for ethnic students in pedagogical universities", *Journal of Education and Society*, pp.192-195.
4. Hoang Trung Thang (2019), "Developing pedagogical competence for Lao students through teaching the module of Education at Pedagogical University - Thai Nguyen University", *Journal of Education and Society*, pp. 344-347.
5. Hoang Trung Thang, Vu Thi Phuong Thao (2021), "Building an educational and cultural environment to improve the quality of teacher training in pedagogical universities in the Northern mountainous region", *Journal of Educational Equipment*, Edition 253- period 2 November 2, 2021, pp.107-109.

INTRODUCTION

1. Reasons for choosing the topic

Human resource development for ethnic minorities (EM) has always got specially concerned by our Communist Party and State. In which, developing education and training and developing ethnic teachers have been considered to be an important solution to develop human resources of EM.

Ethnic teachers are those who deeply understand the language, customs, practices, cultural traditions, living habits, etc. of their own ethnic groups. Deeply understanding the unique characteristics of ethnic students is an indispensable key factor for the good implementation of teaching and educational activities in ethnic areas.

The reality has shown that the teacher training work has been still inadequate, graduates have been still professionally incompetent, there has been no training program that suits ethnic students.

Today, when the general education program in the direction of innovation has been promulgated and implemented, in which local educational contents have been also concerned, the development of teacher professional competence (TPC) for ethnic students (ES) has become even more important because those ethnic would-be teachers are the ones who will directly carry out the educational work in ethnic areas after graduation.

With a high percentage of ethnic students, the teacher training work at the universities in the Northern mountainous region has its own unique characteristics in comparison with that at the teacher training institutions in other regions. That is the cultural diversity of the trained objects and the professional practice environment for students after graduation.

Although there have been many research works on the development of professional competency for teachers and for pedagogical students generally, there has been no research on the development of TPC for ES particularly.

From the above issues, we decided to research the topic on "Developing teacher professional competence (TPC) for ethnic students (ES) at the universities in the Northern mountainous region."

2. Research purposes

Developing TPC for ES at the universities in order to improve the quality of ethnic teachers for meeting the current requirements of

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innovation in general education particularly as well as the requirements of general education in ethnic areas specifically.

3. Research objects and subjects

3.1. Research objects: The process of developing TPC for ES at the universities.

3.2. Research subjects

The measures to develop TPC for ES at the universities in the Northern mountainous region.

4. Scientific hypothesis

The reality has shown that the teacher training work at the universities in the Northern mountainous region has its own characteristics with a high percentage of ethnic students, but there have been still many shortcomings existing in the training program and in the process of implementing the training program to develop TPC for ES. Therefore, if it is possible to build an open training program with elective topics for ethnic students, it will improve the quality of the TPC development for ES.

5. Research mission

5.1. To build a theoretical basis to develop TPC for ES at the universities.

5.2. To assess the reality of the TPC development for ES at the universities in the Northern mountainous region.

5.3. To propose the measures to develop TPC for ES at the universities in the Northern mountainous region.

5.4. To experiment with the measures to develop TPC for ES at the universities in the Northern mountainous region.

6. Limitation and scope of the research

Limit of contents: In this thesis, we studied the TPC development of general education, which focused on developing pedagogical competence (PC) for ES at the universities in the Northern mountainous region.

Limit of survey objects: A survey was conducted on 450 ethnic students, 180 lecturers and managers at 4 universities (Pedagogical University - Thai Nguyen University, Tan Trao University, Hung Vuong University, and Tay Bac University), and 150 teachers and administrators at high schools in the Northern mountainous region.

7. Research methods and approaches

7.1. Approaches to the research issues

Competence approach, system-structure approroach, and practical approach etc.

7.2. Research methods
7.2.1. Group of theoretical research methods
7.2.2. Group of practical research methods

Survey method through questionnaires, observations and interviews. The method of analyzing the products of activities; Expertise method; The pedagogical experimental method.

7.2.3. Group of supporting methods

We used statistical formulas with the support of SPSS 26.0 software to process research data.

8. Defensive thesis

TPC was a combination of pedagogical actions in accordance with the requirements of the teaching profession. The process of formation and development of TPC for ES at the universities was conducted based on the structure of TPC and the characteristics of ES, with diverse and rich objectives, contents and paths, and at the same time under the influence of objective and subjective factors.

The actual TPC of EM at the universities in the Northern mountainous region has been still limited. The process of developing TPC for ES at the universities in the Northern mountainous region has still shown a plenty of shortcomings and has been influenced by the universities' pedagogical capacity and other social factors.

The measures to develop TPC for ES at the universities in the Northern mountainous region that need implementing must be started from developing the teaching programs, compiling documents and learning materials with specific supporting characteristics for ES, at the same time, developing a diverse learning environment for ES in the relationship between universities and high schools and exploiting the strengths of science and technology to help students develop TPC in the best way.

9. Research questions

10. New contributions of the thesis

Building a theoretical basis for the TPC development for ES to help the universities that train ethnic teachers to research and apply them in the training process to meet the current professional requirements.

Generalizing the limitations on TPC of EM and the inadequacies in the process of developing TPC for ES at the universities in the Northern mountainous region to help the

universities overcome the above limitations in the process of training the ethnic teachers.

Proposing the measures to develop TPC for ES at the universities in the Northern mountainous area so that the universities can refer to and apply those measues to improve the quality of training the ethnic teachers.

11. Thesis structure

Apart from the introduction, conclusion and recommendations, the thesis consists of 3 chapters.

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Chapter 1

THEORETICAL BASIS ON TEACHER PROFESSIONAL COMPETENCE FOR ETHNIC STUDENTS AT THE UNIVERSITIES

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1.1. Research overview
1.1.1. Studies on the professional competence of teachers
1.1.2. Studies on teacher professional competence development
1.1.3. Studies on teacher professional competence development for ethnic students at the universities
1.1.4. General assessment of the research overview

(1) The researched works are in the following directions

Domestic and foreign research works have identified TPC according to different approaches, such as following the teacher's relationship, the field of activity and duties of the teacher, requirements of social development and specific goals in teacher training, according to the requirements of general education practice, etc.

A number of other works have researched and idicated the solutions for the TPC development, which pay much attention to the practicality associated with the practical environment of general education, and at the same time, pay attention to the roles and responsibilities of the educational institutions, different forces and subjects in the development of TPC.

(2) Unresolved open issues and the issues that the thesis needs to focus on

In the work of training teachers at the universities in the Northern mountainous region, special attention should be paid to

clarifying the specific characteristics of ES, the framework for TPC that needs to be developed, as well as the measures to develop TPC for ES. However, domestic and foreign researches have been still open and not been able to solve this problem.

Therefore, the thesis have focused on researching and clarifying the following issues: characteristics of ES, the framework that needs to develop for ES, the principles, goals, content, and path to develop for ES; the current status of the TPC of EM and that of the TPC development process for ES; developing the measures to develop TPC for ES.

(3) Issues that can be inherited from research works

In order to have a basis to solve the problems that the thesis has focused on researching, we have inherited the concepts and approaches of TPC, inherited the standard of TPC in general education and the theories about the characteristics of teachers in ethnic areas.

1.2. Tool concepts

1.2.1. Profession

We believe that "*profession is a field of labor that arises and exists with the development of society, is recognized by society, and gives individuals and society the means and values to work, to survive and develop.*"

1.2.2. Competence, professional competence and teacher professional competence

1.2.2.1. Competence

We believe that "*Competence is a combination of physical and mental actions formed on the basis of a system of accumulated knowledge and skills along with individual qualities and attitudes that ensure for individuals to effectively perform a certain field of activities.*"

1.2.2.2. Professional competence

From the above bases, we believe that "*Professional competence is a combination of actions in accordance with the requirements of that profession; It is formed on the basis of a system of professional knowledge and skills along with professional qualities that ensure the individuals effectively fulfill the requirements of that professional field.*"

1.2.2.3. Teacher professional competence

On the basis of the concepts of competence, professional competence and the above issues, we believe that "*teacher professional competence is a combination of pedagogical actions of teachers to ensure that they can perform effectively the requirements of the teaching profession; It is formed on the basis of a system of knowledge, professional skills and pedagogical skills along with the values and professional qualities of teachers.*"

1.2.3. Professional competence development and teacher professional competence development for ethnic students

1.2.3.1. Professional competence development

From the above issues, we have conceived that "*professional competence development is a process of organizing and planning specific activities in order to transform the knowledge, skills and professional values of society into the professional competence of individuals."*

1.2.3.2. Teacher professional competence development for ethnic students

With the above research approaches, we believe that "*TPC development for EM is the process of organizing and planning different types of training activities in accordance with the characteristics of ES and the requirements of education in ethnic areas in order to transform the knowledge, skills and professional values of teachers into the TPC of ES."*

1.2.4. Ethnic students

From the above issues, it can be defined that "Ethnic students are those who originate from ethnic minorities compared to the largest ethnic group in a country that has many diferent groups."

In Vietnam, students who are not from the Kinh group (from one of the other remaining 53 ethnic groups) are considered to be ES.

1.3. Teacher professional competence of ethnic students at the universities

1.3.1. Some characteristics of ethnic students

Ethnic students not only have a deep understanding of their own culture but also are multiculturally colorful in their own identity.

Ethnic students not only deeply understand their own culture but also bring in multicultural colors.

In the North, most of the ethnic minorities live in mountainous and highland areas where exist the natural conditions which are unfavorable for commutation and production, and the socio-economic conditions which are difficult for developement. These factors also influence and create unique features in the personality of ethnic minorities including being industrious, strong-will, brave to face difficulties, mutual helpful and supportive as well as other rustic features etc. These are also unique characteristics in the personality of ethnic students.

1.3.2. Framework for teacher professional competence of ethnic students at the universities

1.3.2.1. Basis of defination

1.3.2.2. Framework for teacher professional competence of ethnic students

The framework for the TPC of the ES is defined as follows:

Professional qualities and values: Love for the profession and for students, pedagogical belief, professional conscience and responsibility, tolerance, optimisticness, fairness, etc.

Group of specialized scientific competence: Specialized scientific indepth competency, competency to master the knowledge of the teaching subjects, competence for specialized research in the faculty, competence to apply and relate specialized scientific knowledge in educational practice in ethnic areas, competence to integrate interdisciplinary scientific knowledge.

Group of pedagogical competence: Suitable teaching competence for ES, suitable educational competence for the educational subjects who are ethnic, competence to build the educational environment in ethnic areas, personal development competence, competence to use ethnic or foreign languages and competence to apply information technology (IT) in teaching and education, competence for social working in ethnic areas.

1.4. The issue of developing teacher professional competence for ethnic students at the university

1.4.1. Significance and importance of developing teacher professional competence for ethnic students

Helping ES implement learning and training contents in order to meet the requirements of teacher professional standards after graduation; Implementing the policy of equity in education and training to ensure the ethnic policy of our Communist Party and State

in training teachers; Contributing to improving the quality of training the teachers who are ethnic, thereby improving the training quality of the universities; Helping ES, after graduation, confidently enter the professional world and adapt to the requirements of the profession.

1.4.2. Objectives, principles, content and paths to develop teacher professional competence for ethnic students

1.4.2.1. Objectives of developing teacher professional competence for ethnic students

The objective of professional competence development for ethnic students is inseparable from the goal of comprehensive development of the would-be teachers' personality, and at the same time, to improve the quality of the standard output competence of ES, to meet the requirements of general education in ethnic areas.

1.4.2.2. Principles of developing teacher professional competence for ethnic students

To ensure that it is suitable for the unique characteristics of ethnic students; To meet the requirements of education in ethnic areas; To ensure the coordination with educational forces in ethnic areas.

1.4.2.3. Contents of developing teacher professional competency for ethnic students

Developing the values and professional qualities of teachers: Developing the teacher values and professional qualities for students is an important content in the process of developing TPC for students.

Developing professional/scientific competence: Developing the knowledge system of specialized science, developing the corresponding skill system in the field of specialized science, developing qualities and attitudes towards specialized scientific fields.

Developing pedagogical competence: Developing a system of pedagogical knowledge as a basis and tool, developing skills and competencies in order to be able to carry out pedagogical activities.

1.4.2.4. The path of teacher professional competence development for ethnic students

Developing TPC for ES through organizing teaching activities, through organizing practically professional activities in high schools, through organizing practice activities and regular pedagogical training activities, through organizing internship activities, through organizing the activities of the Unions and Associations.

1.4.3. Factors affecting the process of developing teacher professional competence for ethnic students

1.4.3.1. Objective factors

The training program is the factor that governs the entire training process and influences the activities of lecturers and students.

Conditions of facilities and training support services are an indispensable factor and that affect all aspects of the training process, learning, training and development activities of TPC.

1.4.3.2. Subjective factors

The professional qualifications, ethics, manners and style of lecturers when performing in class, or their habits in performing intellectual work etc. will have a profound and long-lasting influence on the entire process of learning and training TPC of students in general and of ES in particular.

Managers and their awareness of the TPC development are also one of the subjective factors that have an indirect influence on the TPC development process for ES.

Awareness, activeness, learning methods and specific characteristics of ES are the factors that directly affect the TPC development process of ES.

Conclusion of chapter 1

TPC and TPC development have been studied by scientists with different angles and approaches, the research works on this issue have left scientific and humanistic values and are of theoretical and practical significance. However, studies on the characteristics of ES; the structure of TPC that needs developing for ES; the objectives, contents, principles and the path to develop TPC for ES; and the factors affecting the development of TPC for students are an important theoretical basis for studying the current situation and building measures to develop TPC for ES.

Chapter 2

THE REALITY OF TEACHER PROFESSIONAL COMPETENCE DEVELOPMENT FOR ETHNIC STUDENTS AT THE UNIVERSITIES IN THE NORTHERN MOUNTAINOUS REGION

2.1. General issues of surveying the current situation

2.1.1. Overview of the universities in the Northern mountainous region

In the Northern mountainous region, there are 4 universities of teacher training: Pedagogical University - Thai Nguyen University, Tan Trao University, Hung Vuong University, Tay Bac University. All universities have been accredited and achieved the quality of higher education accreditation. These are the universities of a high percentage of ethnic students.

2.1.2. Organizing to survey the situation

2.2. The reality of teacher professional competence of ethnic students at the universities in the Northern mountainous region

2.2.1. The reality of teaching competence of ethnic students

2.2.2. The reality of educational competence of ethnic students

2.2.3. The reality of other pedagogical competencies of ethnic students

2.2.4. General assessment of teacher professional competence of ethnic students at the universities in the Northern mountainous region

Table 2.4. The reality of TPC of ES

Groups of teacher professional competence	Percentage (%) of self-assessment according to level				Total score	average score
	Below average	Average	Good	Exellent		
Professional qualities and values	0.00	0.94	6.61	92.44	4423.5	2.46
Specialized scientific competence	0.00	7.56	77.22	15.22	3669	2.04
Teaching competence	16.79	35.62	26.69	20.91	8705	1.76
Educational competence	19.98	37.88	28.12	14.02	6808	1.68
Competence to build an educational environment	27.78	36.74	22.22	13.26	2166.5	1.60

Groups of teacher professional competence	Percentage (%) of self-assessment according to level				Total score	average score
	Below average	Average	Good	Exellent		
Personal development competence	5.72	51.94	34.17	8.17	3103	1.72
Competence to use ethnic or foreign languages and to apply IT in teaching and education	0.00	46.15	46.96	6.89	2435	1.80
Social work competence	13.44	70.56	10.89	5.11	1384.5	1.54
Summary					32,694.5	1.82

The summary results in the above table showed that, in addition to the group of teacher professional qualities and values had a nearly good average score (2.46/2.50), the group of specialized scientific competence had an average score of good (2.04), the groups of pedagogical competence had the average score in the upper average degree (ranging 1.54 to 1.80); The summary average score was also nearly upper the average (1.82).

2.3. The reality of developing teacher professional competence for ethnic students at the universities in the Northern mountainous region

2.3.1. Students, lecturers and high school teachers' actual awareness of developing teacher professional competence for ethnic students

2.3.1.1. Students' awareness

The content of teacher professional development ranked 1st by students - the most important ranking in the process of being trained to become a teacher, but only 27.3% of students have been correctly and completely aware of the general structure of TPC and most students only mentioned some outstanding competencies.

2.3.1.2. Lecturers and administratorss awareness of the significance of developing teacher professional competence for ethnic students.

Lecturers and administrators at the universities have a high consensus in being aware and have been properly aware of the

significance of developing TPC for ES. That is a favorable factor to organize the activities to develop TPC for ES.

2.3.1.3. Teachers and administratorss awareness at high schools in the Northern mountainous region

Teachers and administrators at high schools in the Northern mountainous region have recognized the need to develop specific professional competencies for ethnic students and the need for linkages between the high schools in ethnic areas and universities in developing TPC for ES.

2.3.2. The reality of developing teacher professional competence for ethnic students at the universities in the Northern mountainous region

2.3.2.1. Pedagogical impact of training programs and facilities

The survey results in Table 2.8a (detailed in the thesis) showed that there were almost no specific objectives and standard outputs suitable for ethnic students in the training program as well as in the subject outline; Respectively, there were no elective courses and topics or integrated contents for ethnic students. Other contents had quite similar results to the product research results, for example, there were very few subjects with professional practical contents, even some programs did not have professional practical contents at high schools.

The survey results showed that the conditions of learning materials and facilities were highly appreciated, but the support in terms of environment and facilities for ethnic students was not really good (assessed score of 2.87).

2.3.2.2. Impact of training activities

Table 2.9a. Relevance of pedagogical activities to the development process of TPC for ES

Training activities	Assessment	
	$\overline{X}$	Ranking
Teaching activities		
1. The objectives, contents, forms and teaching methods of lecturers are designed and implemented according to the approach of forming and developing TPC for students.	2.80	1
2. Methods and forms of testing and assessing students' learning and training results are suitable for assessment of professional competence.	2.78	2

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Training activities	Assessment	
	$\overline{X}$	Ranking
3. There is a cooperation of ethnic high school teachers in the process of teaching ethnic students	1.23	7
Professional practice and pedagogical internship activities		
4. Ethnic students get professional practice and pedagogical internship at high schools in ethnic areas	2.15	4
5. Ethnic students can practice many times at high schools (or in the localities) in ethnic areas	1.17	9
Activities for regular practice and training of pedagogical skills		
6. The participation of high school teachers in the process of developing plans and programs to guide students in practice and regular pedagogical training	1.2	8
7. The participation of high school teachers in ethnic areas in the process of guiding students to practice and regular pedagogical training	1.14	10
8. Ethnic students are trained with specific competencies which are suitable to the educational requirements of ethnic areas	2.04	6
Union and Association activities		
9. Ethnic students are allowed to participate in volunteer activities at high schools (or in the localities) in ethnic areas.	2.10	5
10. There are specific clubs for ethnic students (ethnic language clubs, ethnic cultural clubs, ethnic games clubs, etc.)	2.18	3

Note: The highest score = 5, the lowest score = 1, the high average score indicates a high degree of agreement with the influencing factor.

The results in table 2.9a (detailed in the thesis) showed the content "There is a collaboration of ethnic high school teachers in the teaching process; building plans, programs and guiding students to practice and train pedagogical skills regularly" had an important meaning in the process of developing TPC for ES, but it was hardly concernedd in the training process.

Other contents also had a rather low average score, which meant that the specificity of the professional competence of ethnic teachers as well as the requirements of education in ethnic areas have not been adequately concerned in the process of developing TPC for ES at the universities.

However, some other opinions from the lecturers stated that although the training program has not paid attention to building elective courses and topics for ethnic students, in recent years, some universities have developed a program to support knowledge and skills for ES like Pedogogical University - Thai Nguyen University, or there have been knowledge support clubs for ES like at Tay Bac University.

2.3.2.3. Activities to develop teacher professional competence of ethnic students

There are certain differences in the activities to develop TPC for ES between 2nd-year students and 4th-year students, but in general, there have been certain limitations in objectives and contents, methods and forms of learning in all activities. Scientific research and practical professional activities at high schools have not been properly concened by ethnic students. Through practice activities and regular pedagogical training, ethnic students have actively practiced basic pedagogical skills, but they have not paid attention to the comprehensiveness of the structure of TPC. Although students have actively participated in Union and Association activities, most ethnic students have not been able to develop their competence to organize activities, but just able to support and participate in the activities.

2.3.2.4. General assessment of the reality of the teacher professional development for ethnic students at the universities in the Northern mountainous region

Conclusion of chapter 2

The universities in the Northern mountainous region have a high percentage of ES, the teaching staff and management staff have been corectly aware of the significance of developing TPC for ES, but the training program have lacked the typical specificity and been unsuitable for the development of TPC for ES. From the development of objectives, standard outputs, and course outlines to training activities, there has been a lack of attention to ethnic students. Academic, scientific research and practice activities of students have not been scientific. Therefore, the reality of TPC of ES has only reached the upper average level.

Chapter 3

MESURES TO DEVELOP TEACHER PROFESSIONAL COMPETENCE FOR ETHNIC STUDENTS AT THE UNIVERSITIES IN THE NORTHERN MOUNTAINOUS REGION

3.1. Principles of proposing measures to develop teacher professional competence for ethnic students

Must ensure the goal of higher education; Ensure objectivity, practicality, systematicity, inheritance and development, feasibility and efficiency.

3.2. Measures to develop teacher professional competence for ethnic students

3.2.1. Measure 1: Developing an open curriculum for ethnic students based on the program's standard outputs

i) Objectives of the measure

To create opportunities for ethnic students to study according to their ability and needs to meet the professional standards of teachers and the standard outputs of the teacher training program, and especially help students have the competence to adapt to the professional working environment after graduation.

ii) Contents and implementation of the measure

For each module, it is necessary to define the standard outputs of the course or the system of competencies to be aimed at by ethnic students.

Supplementing the curriculum with elective course which are suitable to the characteristics of ES and the requirements of education in ethnic areas; organizing teaching activities to meet the learning needs of ethnic students.

Lecturers need to effectively design and organize elective courses for ES according to defined competence standards to be achieved by ES.

Organizing professional practical experiential activities associated with the practical working environment after graduation.

iii) Conditions for implementation of the measure

The faculty managing the training program should discuss the building of outcome standards for ES, and identify elective courses for ES.

The group of lecturers must do research to master the characteristics of ES and socio-cultural characteristics of ethnic areas.

ES need to actively learn and respond to teachers during the interactive teaching-learning process.

3.2.2. Measure 2: Compiling a system of learning materials, teaching materials for the topics and elective terms for ES in the direction of professional competence development

i) Objectives of the measure

Compiling a system of learning materials and the materials for teaching the topics and elective courses to ES according to competence approach to help the activities of teaching and learning to be in conformity with the objectives and contents of the curriculum development for ES; Helping ES self-study under the guidance of lecturers to achieve the standard outputs of the elective courses to perfect the personality of teachers in mountainous and ethnic areas.

ii) Contents and methods of implementing the measure

Based on the elective teaching program for ES, lecturers collaborate with colleagues to compile and design a list of documents and learning materials to serve the teaching of the elective subjects.

Organizing seminars on elective topics to build a framework of documents and learning materials for the teaching activities of lecturers and learning activities of ES. When organizing seminars on these topics, professional groups and faculties should invite teachers

in mountainous and ethnic areas to participate so that they can have practical contributions to make the documents more meaningful.

Selecting qualified lecturers to develop learning materials and teaching materials to serve the elective courses for ES.

Way of implementation of the measure:

Lecturers must make a diagram between the detailed outline of the documents and the learning standard outcomes of the course in order to compile the curriculum and the lecture outline correctly and properly, and attract learners to self-learn and self-study.

It is necessary to base on the learning standard outcomes (SO) to compile materials in order to present the units of knowledge and skills to meet the S.O for ES. Lecturers can concretize S.O of the elective modules into component competencies and design learning activities for students according to component competencies.

iii) Conditions for implemetation of the measure

Lecturers who develop learning materials must be capable of designing and preparing learning materials and documents, be experienced in penetrating the practice of general education in ethnic areas, have an approach method and understand the characteristics of students and E.S.

When compiling teaching materials, teachers need to master the S.O of the subjects during the process of compiling documents as well as designing a system of testing questions and evaluation of students' results.

3.2.3. Measure 3: Diversifying a learning environment to develop teacher professional competence for ethnic students at universities

i) Objectives of the measure

Diversifying the learning environments to develop TPC for students at universities in order to help students have more opportunities to study and practice to develop PC according to defined standards.

ii) Contents and implementation of the measure

Organizing the PTC development for students through classroom activities, through practically professional activities in high schools, through practical activities at universities and regular pedagogical training, through pedagogical internship activities, through student volunteering activities in high schools, through club activities of the Unions and Associations.

iii) Conditions for implementation of the measure

Lecturers must be professionally competent and pedagogically skillful, and be knowledgeable about ES psychology; High school teachers who guide students to practice must be professionally competent and pedagogically skillfull as well; There should be a coordination mechanism between universities and high schools in organizing experiential, practical and real activities for students; Officers of the Unions and Associations of the schools need to diversify students' activities in the direction of forging PC; Students need to be self-disciplined, actively self-practice, train and participate in various activities to develop PC.

3.2.4. Measure 4. Coordination between universities, schools and other stakeholders in developing teacher professional competence for ethnic students

i) Objectives of the measure

Coordinating between pedagogical schools, high schools and other stakeholders in the TPC development for ES in order to create an environment for learning and training professional development for students, and promoting their potential and resources in student training meeting the S.O of the training program, exploiting the high schools as the second lecture halls to train students.

ii) Contents and implementation of the measure

Coordinating between pedagogical schools, schools and other stakeholders in developing TPC for ES through classroom activities,

through practically professional activities in high schools, through practical activities at the pedagogical schools and regularly practice pedagogical skills, through pedagogical internship activities, through student volunteering activities in high schools.

iii) Conditions for implementation of the measure

For universities: Building a network of sustainable links and coordination mechanisms, friendly cooperating with schools and stakeholders.

For schools and stakeholders: Seriously considering the collaboration work with universities as a professional mission.

Students need to play an active and proactive role in the process of practice, internship, and need to practice and approach to help ES study and practice to experience the knowledge and professional skills which have been learned at university.

3.2.5. Measure 5: Combining a form of direct training with digital transformation in developing teacher professional competence for ethnic students

i) Objectives of the measure

Combining face-to-face training with digital transformation to maximize the benefits of digital technology, differentiating students' qualifications and characteristics during the training process, and at the same time support students' research and development of PC.

ii) Contents and implementation of the measure

The content that combines face-to-face training with digital transformation to develop PC for students includes the following steps:

Step 1. Determining the goal of PC development corresponding to the specific contents in the terms/themes, and at the same time specifying the tasks that learners must perform to achieve the goal.

Step 2. Defining directly interactive contents in class and digital transformation contents

Step 3. Identifying and preparing the digital technology platform and facilities

Step 4. Developing a plan for face-to-face teaching in combination with digital transformation

Step 5. Digitizing information - building digital learning materials

Step 6. Process digitization: Process digitization is the process of using appropriate technology platforms (zoom, teams, zalo, meet, padlet, quizizz, etc.) to interact with students.

Step 7. Implementing a plan for face-to-face teaching combined with digital transformation

Step 8. Summarizing and evaluating the training process

iii) Conditions for implementation of the measure

The school must prepare the technology infrastructure well; Instructors must develop their own digital technology skills; Students must constantly improve their capacity to exploit and use digital technology; prepare the necessary minimum technological equipment to meet the requirements of the school.

3.2.6. *The relationship between measures*

These measures are closely related and complementary to one another; Therefore, it is necessary to implement all measures synchronously.

3.3. Exploring the feasibility of the measures to develop PC for ES

3.3.1. *Polls*

3.3.2. *Poll results*

The data in Table 3.1 (detailed in the thesis) has shown that the proposed measures have ensured feasibility and effectiveness.

3.4. Experimental application of some proposed measures

3.4.1. *Overview of the experiment*

3.4.2. *Results of pedagogical experiments*

3.4.2.1. *Quantitative assessment*

Table 3.5. Correlation of average scores of the PC standard outcomes of the education courses between the experiment group and the control group

Competence groups	Groups	Correlation of ES group		General correlation	
		Average scores	Average score deviation	Average scores	Average score deviation
Teaching	experiment	7.05	0.714	7.24	0.547
	control	6.33		6.70	
Education	experiment	6.67	0.571	6.96	0.421
	control	6.10		6.53	
Educational environment	experiment	6.90	0.619	7.31	0.660
	control	6.29		6.65	
Individual development	experiment	6.67	0.762	6.96	0.490
	control	5.90		6.47	
Languages - IT	experiment	7.48	0.762	7.84	0.914
	control	6.71		6.93	
Social work	experiment	6.29	0.762	6.53	0.533
	control	5.52		6.00	

The data in the table above showed that the general expression of the average scores deviation between the experimental group and the control group achieved the lowest score in the group of educational competence (0.421), the highest was in the competence group of language and information technology (0.914). That meant, the measure had an effective impact in all competence groups corresponding to the standard outputs of the education courses, but the strongest impact was in the group of language and information technology competencies. However, with the ES group, the impacts were somewhat more equal and effective with the average deviation of 0.698 compared to the general deviation of 0.594.

Correlation of course average scores between ES and Kinh students in experiment and control groups:

Table 3.6. Correlation of course average scores between ethnic students and Kinh students

Groups		Quantity	Average scores	Average score deviation
experiment	Kinh students	24	7.21	0.542
	Ethnic students	21	6.67	
control	Kinh students	22	7.0	1.095
	Ethnic students	21	5.9	

The results in table 3.5 showed that the average score deviation on the whole scale between ES and Kinh students in the experimental group had a smaller deviation than in the control group. This means, the measure has shortened the gap of the difference in learning outcomes between ES and Kinh students.

3.4.2.2. Qualitative assessment

Through observing learning activities and professional practice over the subject, we found out that:

In the control class, students faced many difficulties in the learning process; especially ethnic students with timidity, fear of mistakes, fear of interacting with lecturers, this leads to tyhe fact that they did not understand the nature of so many contents deeply; lecturers also did not have much feedback on students' cognitive ability and practical skills. With limited class time, it was difficult for lecturers to guide, organize tests as well as assess students' practice competence.

In the experimental class, many problems of the form of direct instructing in class were solved. The limitations of shyness of ES have been solved through diverse learning groups managed by the zalo app - contents and active interaction in the group was an evaluation criterion, therefore it stimulated the active sharing and cooperation between ethnic students and other students. Through digital learning resources and online group interactions (online, offline), difficulties in students' perception have been solved. Also with the support of technology, it has solved the problem of guiding

practice, and testing and evaluating students' practice activities through offline lecture videos and students' practice videos.

3.4.2.3. General evaluation of experimental results

The experimental results showed that the application of combining measure 1 and measure 5 (Measure 1: Developing a teaching program for ethnic students in an open direction based on the program's standard outputs; Measure 5: Combining direct training with digital transformation in developing teacher professional competence for ethnic students) has been effective, proving the scientific validity of the hypothesis and the feasibility of the measures in the TPC development for ES.

Conclusion of chapter 3

Based on the theoretical and analytical framework to solve practical problems, we built 5 measures to develop TPC for ES at the universities in the Northern mountainous region. The measures got commented by experts to confirm the effectiveness and feasibility, and through the experimental results, some measures have increased the scientificity, feasibility and proven the hypothesis of improving the quality of the TPC development for ES.

The measures have got a close relationship with each other and complemented each other in the process of developing TPC for ES. Therefore, the synchronous application of all measures will maximize the effectiveness of the measures' impact on the TPC development for ES.

CONCLUSION AND RECOMMENDATION

1. CONCLUSIONS

1.1. TPC is an issue studied by many scientists with different perspectives and approaches, having left a lot of scientific values for the work of researcing and training teachers. However, our researches on the TPC development for ES in the thesis work is a new issue of theoretical and practical significance.

1.2. Research results showed that not only students' learning and research activities have limitations, but also both the program and the teacher training activities also have limitations that need to be solved such as the approach perceptive to developing the training program;

standarrd outputs; subject program; teaching methods; methods of testing and assessing students' learning outcomes.

1.3. On the basis of theoretical and practical research, we have proposed certain measures to develop TPC for ES and have been confirmed in terms of effectiveness and feasibility. For mass application of the measures, it is necessary to apply a combination of the measures flexibly and creatively in accordance with actual situations.

2. RECOMMENDATIONS

2.1. As for the Ministry of Education and Training

It is necessary to develop a legal mechanism with binding responsibilities between teacher training schools and general schools in order to create a favorable environment not only for educators but also students and pupils.

2.2. As for the universities in the Northern mountainous region

It is essential to focus on developing teacher training programs in an open direction, orienting the TPC development and meeting the diverse learning needs of students in general and ethnic students in particular.

Additionally, it is necessary to regularly pay attention to the development of teaching staff, closely associate with high schools, and invest in facilities and equipment in order to serve training activities of lecturers, learning and training activities of students in the best way.

2.3. As for high schools

It is important to link with universities in the teacher training work, actively collaborate with lecturers during the teacher training process at unisversity, and create a favorable environment for students to practice their professional skills and pedagogical internship.

2.4. As for lecturers and researchers

Actively self-educating and researching to improve qualifications, studying the practice of general education in ethnic areas, actively renewing the program, innovating the forms and methods of teaching, innovate the forms and methods of testing - assessing learning outcomes, and paying attention to students who are ethnic.