MINISTRY OF EDUCATION AND TRAINING
HANOI NATIONAL UNIVERSITY OF EDUCATION

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TEACHING PROFESSIONAL PEDAGOGICAL KNOWLEDGE TO UNIVERSITY STUDENTS OF TECHNICAL TEACHER EDUCATION BASED ON EXPERIENTIAL LEARNING

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INTRODUCTON

1. Rationale

In the 21st century, the world has moved forward to an progressive education, in which the value of freedom is enhanced, and learning should be connected with experience and interests of life. In Vietnam, perspectives and philosophies of such education are consistent with the project " Basic and Comprehensive Innovation of education and training" by Communist Party of Vietnam and the Goverment. Therefore, experiential learning is the basis for educational innovation in the context of Vietnam today.

The research on pedagogical situation of technical teacher shows that teachers' professional pedagogy is weak, failing to meet the development needs of vocational education in the new conditions; furthermore, knowledge and teaching skills also reveal many limitations, especially teaching skills. Therefore, teaching innovation of professional pedagogy for students at the University of Technical Education (UTEs) should be considered as an urgent issue.

Some documents relating to teaching professional pedagogical knowledge based on experiential learning were published to develop teaching skills, but the authors did not clarify the essence, principles, characteristics and the specific teaching methods. Therefore, in my opinion, this is the insufficiency in pedagogical theory.

Teaching professional pedagogical knowledge based on experiential learning emphasizes the active feelings and "cognition" of the students. These are extremely important to develop emotional and moral career, desire and critical thinking while using the best teaching methods, and lifelong learning habits.

On the other hand, the observation of the entire process training helps students obtain the best experience on professional pedagogical knowledge to have the foundation for learning in order to achieve the objective. It is the foundation for teaching professional pedagogical knowledge.

For the reasons above, it can be seen that the research topic: **“Teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning”** is valuable in theory and practice.

2. Purpose of research

To recommend measures to teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning in the pedagogical contents, which are suitable for experiential learning to improve learning outcomes of student.

3. The object and subject of the research

3.1. Object

The process of teaching professional pedagogical knowledge to technical students majoring in Electrical engineering, Electronic engineering, Mechanical Engineering, Automobile Engineering, Information Technology, Garment Technology and Fashion Design at the UTEs.

3.2. Subject

Dialectical relationship between teaching activities of professional pedagogical knowledge based on experiential learning of teacher and learning activities of university students of technical teacher education.

4. Hypothesis

If designs of the practical exercises on professional pedagogical knowledge (academic topics, research projects on students and learning, research lesson...) for the professional pedagogical contents are suitable for experiential learning, combined with teaching techniques in an encouraging way – such as participating and using forms of teaching based on experiential learning, the learning environment will be full of emotions, collaboration and sharing, in which students will have the opportunity to study the experience of the actual work of teaching; as a result, the teaching will have a positive impact on the learning process and outcomes of professional pedagogical knowledge (particularly the development of teaching skills).

5. Research tasks

5.1. Identifying scientific basis of teaching professional pedagogical knowledge university students of technical teacher education based on experiential learning.

5.2. Recommending the measures of teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning.

5.3. Implementing pedagogical experience and methods of experts to evaluate the study results.

6. Scope of the research

The training programs on professional pedagogical knowledge to university students of technical teacher education.

Surveying the situations at: Hung Yen University of Technology and Education, Nam Dinh University of Technology and Education, Ho Chi Minh City of Technology and Education.

Selecting the professional pedagogical contents which are suitable for experiential learning in curriculum of Hung Yen University of Technology and Education.

Carrying out a model pedagogical experience program at Hung Yen university of technical education.

7. Methods

The theoretical research methods, combined with the practical research methods and other methods.

8. Protection perspectives

- Teaching professional pedagogical knowledge based on experiential learning need to rely on a model of learning experiences (Kolb's Model of Experiential Learning) to describe the learning activities that students have to undergo. The design of learning activities should be appropriate with the characteristics of psychological, learning and social features of technical students.

- Teaching professional pedagogical knowledge based on experiential learning will develop pedagogical competence (focused on teaching skills) for students with emotions, cooperation and shared values/experience among students through experiencing the real work of teaching.

- To make sure that teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning feasibly and effectively, three things should be done: (1) Selecting the professional pedagogical content suitable for experiential learning; (2) Designing practical exercises on professional pedagogical knowledge oriented experiential learning; (3) Using forms of teaching based on experiential learning.

9. New contributions of the thesis

- Developing a model of experiential learning in teaching professional pedagogical knowledge, together with clarifying the learning activities that students must undergo in order to go through four stages of experiential learning.

- Clarifying the essence, principles and characteristics of teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning.

- Clarifying the current situation of teaching professional pedagogical knowledge at UTEs today, including limitations regarding the training programs of professional pedagogical knowledge, teaching activities and assessment of learning outcomes for the application of teaching based on experiential learning.

- Recommending measures to teach professional pedagogical knowledge to university students of technical teacher education based on experiential learning: (1) Selecting the professional pedagogical contents which are suitable for experiential learning; (2) Designing practical exercises on professional pedagogical knowledge oriented experiential learning; (3) Using forms of teaching based on experiential learning.

CHAPTER 1: SCIENTIFIC BASIC OF TEACHING PROFESSIONAL PEDAGOGICAL KNOWLEDGE TO UNIVERSITY STUDENTS OF TECHNICAL TEACHER EDUCATION BASED ON EXPERIENTIAL LEARNING

1.1. Overview of the research topic

1.1.1. Some research on teaching professional pedagogical knowledge to university students of technical teacher education

a) In the world

The research on professional pedagogical knowledge and teaching professional pedagogical knowledge in the world has some common points of view as follows:

- Professional pedagogical knowledge is determined based analyzing the tasks / work of the teachers in the context of modern society, focusing on training and development of teaching skills for students.

- The methods and forms of teaching professional pedagogical knowledge are selected thanks to the basis of the creative theory.

The research on teaching professional pedagogical knowledge to university students of technical teacher education emphasizes that students should be allowed to have the opportunity to understand and apply the knowledge, skills and feelings in a direct context technical education, not simply a process of thinking about learning objects through the active participation of students.

Thus, teaching professional pedagogical knowledge is always associated with "practical experience", associated with the tasks of the teachers in practice.

b) In Vietnam

The studies discussing directly or relating to teaching professional pedagogical knowledge to university students of technical teacher education have emphasized teaching based on competency. The authors Nguyen Minh Chau, Ho Thi Dung, Dao Hai, Nguyen Thi Thuy Huong... consider teaching skills as a primary task of teaching professional pedagogical knowledge. The study by Phan Duc Duy, Cao Cu Giac, Nguyen Thi Phuong Hoa, Do Thi Thu Huong, Nguyen Thi Tinh... considers the use of practical exercises as an effective solution to develop teaching skills.

1.1.2. Some research on experiential learning and teaching based on experiential learning

a) In the world

Experiential learning is the realization of the perspectives of pragmatism in philosophy applied in education, a modern educational theory, prominent in the 20th century. Experiential learning has played a central role in the progressive education, becoming the trend and the foundation of education in the 21st century.

There are many studies on experiential learning, but the most prominent is Kolb's research published in 1984, having a lot of support from educators, and applied on teaching.

b) In Vietnam

The views of teaching based on experiential learning are derived from original research use creative theory in education. The authors such as Nguyen Thi Huong (2012), Pham Sy Nam (2012) believe that organizing activities to experience learning is the key to apply creative theory.

These study of teaching based on experiential learning in Vietnam showed that Kolb’s experiential learning theory is enormously potential in the application of teaching for each specific field of education.

In summary, the analysis of all aspects about teaching professional pedagogical knowledge to university students of technical teacher education and teaching based on experiential learning in all the studies above show that there have not been any projects addressing the issue of teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning.

1.2. Basic concepts

1.2.1. Experiential learning

Experiential learning in teaching professional pedagogical knowledge to university students of technical teacher education is to learn by feelings, in which students are experiencing the actual simulation jobs of teaching activities, practicing and applying in their careers through case studies, project learning, lesson design exercise ... and the proactive participation, working together, sharing experiences in work among members. That will help each individual student assess their own experience, reflect and conclude a new experience (knowledge and teaching skills), then comprehend the pedagogical knowledge.

1.2.2. Professional pedagogical knowledge and teaching professional pedagogical knowledge

(1) Professional pedagogical knowledge is the training contents that include all the basic pedagogical competence and practical experience that teachers need to implement the work of the teaching profession effectively.

(2) Teaching professional pedagogical knowledge is to teach students to develop the basic pedagogical competence and practical experience in order to carry out effective work of the teaching profession.

There are three main skill teaching groups: student and learning research skills; design teaching skills; direct teaching skills.

1.2.3. Teaching professional pedagogical knowledge based on experiential learning

Teaching professional pedagogical knowledge based on experiential learning is to turn the professional pedagogical knowledge into the tasks or problems associated with the practical work of teachers and the

design of practical exercises (case studies, project learning, teaching design ...) for students to experience. Thereby, teachers use methods of motivational teaching to encourage students to participate, combined with the use of forms of teaching based on experiential learning such as thematic teaching, project-based learning, teaching based on lesson study... to help students achieve learning objectives.

1.2.4. University students of technical teacher education

University students of technical teacher education is are the students who are studying and researching in the field of technical teacher education aimed at effective implementation of the work during the technical / vocational traning in the future.

1.3. Experiential learning in teaching professional pedagogical knowledge

1.3.1. Essence of experiential learning

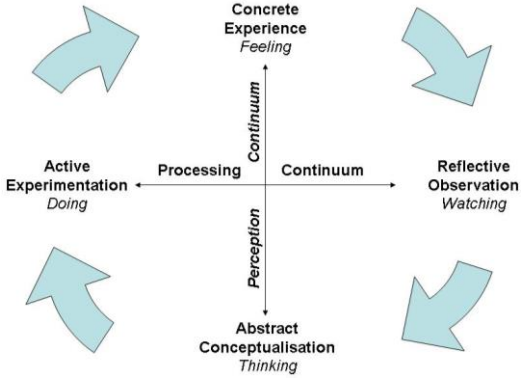


Figure 1.1: Kolb's Model of Experiential Learing

Kolb's Model of Experiential Learing describes two dialectically related modes of grasping experience - Concrete Experience and Abstract Conceptualization; and two dialectically related modes of

transforming experience - Reflective Observation and Active Experimentation (Figure 1.1).

1.3.2. Model of experiential learning in teaching professional pedagogical knowledge

Model of Experiential learning in teaching professional pedagogical knowledge to university students of technical teacher education (Figure 1.2).

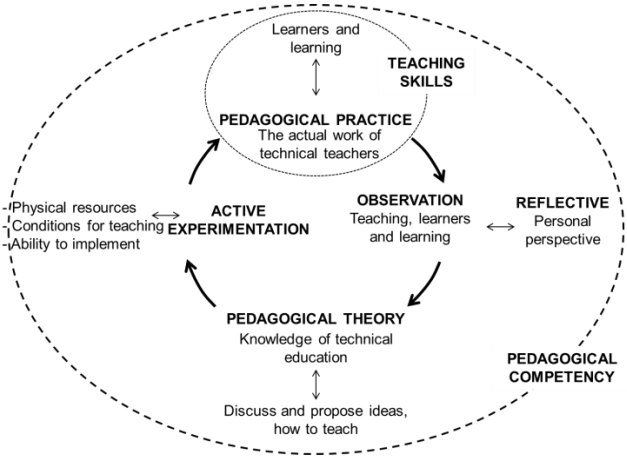


Figure 1.2: Model of experiential learing in teaching professional pedagogical knowledge

1.3.3. Learning activities

There are 4 basic learning activities that students must complete in order to go through four stages of experiential learing: (1) inquiry – detect activities; (2) changing, processing and developing activities for events or issues; (3) applying and strengthening activities; (4) evaluating and adjusting activities

1.4. Teaching professional pedagogical knowledge based on experiential learning

1.4.1. Essence

The essence of teaching professional pedagogical knowledge based on experiential learning is the teaching style with functional organization of activities and cooperation among students in the learning process, stimulating learning motivation, creating a favorable feeling background for students to experience, evaluate, share ideas and experiences, and assert himself.

1.4.2. Principle

Teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning should be based on the basic principles:

(1) Be able to design practical exercises on professional pedagogical knowledge which are appropriate to the learning objectives and the experience of students.

(2) Provide an opportunity for students to practice and act to develop teaching skills associated with the actual context of technical education.

(3) To build a learning environment which is rich in values, interactive and engaging for students to experience.

(4) Teacher-student relationship is collaborative.

1.4.3. Characteristics

(1) Characteristics of teaching contents: They must be consistent with the contents on practice / action (rather than the academic contents, students only need to understand and remember) and closely connected to reality events.

(2) Characteristics of teaching methods: These are the methods of motivational teaching to encourage students to participate in organized activities to experience and strengthen the social relationships among students.

(3) Characteristics of teaching forms: They help students have opportunities to discover, research, experiment, practice and labour.

(4) Characteristics of learning facilities and learning materials.

1.4.4. A number of teaching techniques

(1) Socratic Method (suggestive dialogue)

(2) Conversation Heuristic (conversational discovery)

(3) The debate on the dilemma direction

(4) Brainstorming

1.5. Characteristics of university students of technical teacher education

1.5.1. Psychological characteristics

(1) The development of of self-consciousness about the technical teacher's career is an important psychological characteristics of university students of technical teacher education.

(2) The development of both pedagogical thinking and technical thinking is a prominent psychological characteristic of university students of technical teacher education.

(3) Passion for the technical teacher's career of university students of technical teacher education is a motivation for them to study hard, creatively, and develop love for selected occupations.

1.5.2. Learning characteristics

(1) Learning motivation is the feelings and assessment regarding the potential to address new issues of capital based on personal experience.

(2) Learning activities focus on the professionalism of the technical teacher's career, and personality development of teachers and technical experts in the corresponding career fields.

(3) Learning is both highly independent and collaborative.

1.5.3. Social characteristics

(1) Social relations of teachers affect the pedagogical relationship of university students of technical teacher education.

(2) Students are interested in the value of technical teacher's career in society that they have chosen to learn.

(3) Friend relationships dominate in social activities.

1.6. The reality of teaching professional pedagogical knowledge based on experiential learning at UTEs

The survey was done with the participation of 350 students and 50 teachers at UTEs including Hung Yen, Nam Dinh, Ho Chi Minh City showed that:

- Structure contents of professional pedagogical training program for university students of technical teacher education have been built towards academic and heavy theory with little practice, so it is necessary to choose the appropriate lesson for experiential learning.

- Teachers have not focused on teaching professional pedagogical knowledge towards the organization of learning activities for students to experience. The learning activities of the students are mainly the simple experience; for example, watching movies and videos, reading materials or homework, ... Therefore, it is necessary to propose measures to guide how to guide and apply teaching professional pedagogical knowledge based on experiential learning towards improving the initiative and the responsibility of students in the learning process.

Conclusion

The overview of the research topic shows that teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning has never been addressed in any papers by national or foreign authors.

Teaching professional pedagogical knowledge based on experiential learning is based on the Kolb's model of experiential learning, must be based on the principles, characteristics and methods of motivational teaching to encourage students to participate.

There are 4 basic learning activities that students must complete in the learning process: : (1) inquiry – detect activities; (2) changing, processing and developing activities for events or issues; (3) applying and strengthening activities; (4) evaluating and adjusting activities

CHAPTER 2: THE MEASURES OF TEACHING PROFESSIONAL PEDAGOGICAL KNOWLEDGE TO UNIVERSITY STUDENTS OF TECHNICAL TEACHER EDUCATION BASED ON EXPERIENTIAL LEARNING

2.1. Overview of professional pedagogical training program at UTEs

Currently, there are differences among UTEs in terms of professional pedagogical training program. To achieve practical background for teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning, the dissertation studied professional pedagogical training program at Hung Yen university of Technical Education.

2.2. Selecting suitable professional pedagogical contents for experiential learning

2.2.1. Principles of selection

(1) Associated with technical learning content

(2) Focus on pedagogical practice

(3) Focus on teaching skills in technical education

2.2.2. Selection professional pedagogical contents

Based on the professional pedagogical training program at Hung Yen University of Technical Education, and principles of selection, the thesis chose suitable professional pedagogical contents for experiential learning.

2.3. Designing the relevant practical exercises on professional pedagogical knowledge for experiential learning

2.3.1. General criteria of the practical exercises on professional pedagogical knowledge

(1) Be closely related to the key points of professional pedagogical contents of the lessons / learning topics.

(2) Provide opportunities for students to learn through working and studying.

(3) Develop the basic teching skills for students.

(4) Require individual efforts from students.

(5) Require collaborative working.

2.3.2. Process of designing practical exercises on professional pedagogical knowledge

Step 1: Identify objectives and contents of the lessons.

Step 2: Find out the experience of students about the lessons.

Step 3: Determine the ideas for designing.

Step 4: Collect information to design.

Step 5: Write practical exercises.

Step 6: Establish a data system needed to support students perform.

Step 7: Develop criteria for evaluating learning outcomes.

2.3.3. Illustration of designing practical exercises on professional pedagogical knowledge

2.3.3.1. Illustration: practical exercises on professional pedagogical knowledge as learning topic “performing vocational skills”

Group Activity: Performing vocational skills

Each group selected a vocational skill in the vocational training program that they can perform in the classroom during about 15 minutes and do the following tasks:

- Preparing for the performance: Making teaching plans, compiling documents guiding skills, wall charts, materials and supplies needed to perform.

- A representative of the group demonstrated vocational skills, the other members of the group played the role of students. Lecturers and other groups observed and gathered evidence to give feedback.

2.3.3.2. Illustration: practical exercises on professional pedagogical knowledge as research topics on students and learning in lesson “technical thinking”

Some illustration topics such as:

(1) Measures to develop technical thinking through the use of technical design problem for vocational students.

(2) Measures to develop technical thinking through the use of technical diagnostics problem for vocational students.

(3) Measures to develop technical thinking through the use of technical analysis problem for vocational students.

(4) Measures to develop technical thinking through the use of technical control problem for vocational students.

Selecting a topic and performing the following tasks:

- Designing technical problems for a specific technical subject;

- Proposing measures to develop the technical thinking through the use of "technical design problems";

- “Impacting – researching” to assess the effectiveness of the suggested measures;

- Writing scientific reports for the topic;

- Representatives of the group reported the research results to the class. Lecturers and other groups observed and gathered evidence to give feedback.

2.3.3.3. Illustration: practical exercises on professional pedagogical knowledge in the lesson "Designing integrated lessons"

Each group selected a typical integrated lesson in vocational training programs, having the duration of 45 minutes and discussed based on studying the lesson to perform the following tasks:

(1) Identifying research objectives

(2) Designing the lesson

(3) Demo teaching and observing

(4) Having thoughts and disussing the lessons

(5) Adjusting the design and applying lessons.

Expected result: lesson designing documents (lesson plans) for integrated lessons to students make students have positive attitudes.

2.4. Using forms of teaching professional pedagogical knowledge based on experiential learning

2.4.1. Thematic teaching to develop direct teaching skills

2.4.1.1. The process of thematic teaching

Thematic teaching is usually conducted based on the perspective of problem-solving model, with the following process:

Phase 1: Suggesting the problem

Phase 2: Problem Solving

(1) Inquiry – detect activities;

(2) Changing, processing and developing activities for events or issues;

(3) Applying and strengthening activities;

(4) Evaluating and adjusting activities.

Phase 3: Results of the problem

2.4.1.2. Illustration: Thematic teaching in the lesson *"performing vocational skills"*

2.4.2. Project-based learning to develop student and learning research skills

2.4.2.1. The process of project-based learning

The process of project-based teaching includes 3 stages:

Phase 1: Suggesting the project

Phase 2: Project Implementation

(1) Inquiry – detect activities;

(2) Changing, processing and developing activities for events or issues;

(3) Applying and strengthening activities;

(4) Evaluating and adjusting activities.

Phase 3: Results of the project

2.4.2.2. Illustration: Project-based learning in the lesson *"Technical thinking"*

2.4.3. Teaching based on lesson study to develop teaching design skills

2.4.3.1. The process of teaching based on lesson study

The process of teaching based on lesson study as follows:

Phase 1: Find out the direction of the research

Phase 2: Lesson study

(1) Inquiry – detect activities;

(2) Changing, processing and developing activities for events or issues;

(3) Applying and strengthening activities;

(4) Evaluating and adjusting activities.

Phase 3: Results of the lesson study

2.4.2.2. Illustration: Teaching based on lesson study in the lesson "Designing integrated lessons"

Conclusion Chapter 2

Not any professional pedagogical content in the subject well suits experiential learning; therefore, selecting appropriate professional pedagogical content for experiential learning will create favorable conditions for teachers to organize teaching. It must be based on fundamental principles.

There are three types of the practical exercises on professional pedagogical knowledge which are relevant to experiential learning: (1) Practical exercises as learning topics; (2) Practical exercises as research topics on students and learning; (3) Practical exercises as lesson study.

Using forms of teaching professional pedagogical knowledge based on experiential learning will directly have an impact on developing teaching skills of the students through the process of making the practical exercises.

CHAPTER 3: TESTING AND EVALUATION

3.1. Organization of pedagogical experience

3.1.1. Purpose and scope

(1) Purpose

Assessing the impact of measures of teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning.

(2) Scope

Including 180 students of the Hung Yen University of Technical Education.

3.1.2. Experimental content

(1) Direct teaching skills: Teaching the lesson *"performing vocational skills".*

(2) Student and learning research skills: Teaching the lesson *"Technical thinking"*.

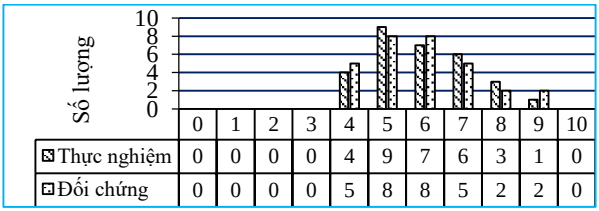
(3) Teaching designing skills: Teaching the lesson *"Designing integrated lessons".*

3.2. Experimental result analysis

3.2.1. Direct teaching skills

(1) Results before experimentation

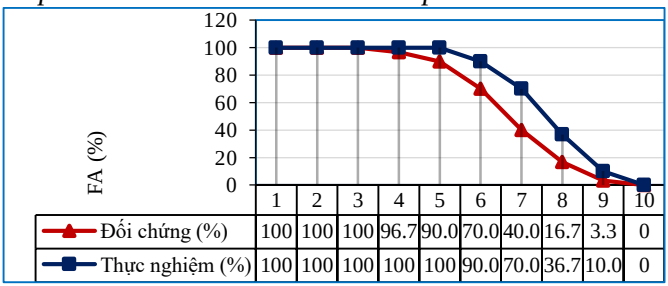
Input survey results (Figure 3.1).Test results by z-test and ANOVA in MS.Excel show that the quality of learning outcome input in the control class and the experimental class is the same without any difference.



	0	1	2	3	4	5	6	7	8	9	10
Thực nghiệm	0	0	0	0	4	9	7	6	3	1	0
Đối chứng	0	0	0	0	5	8	8	5	2	2	0

Figure 3.1: Input survey results

(2) Compare the control class and the experimental class

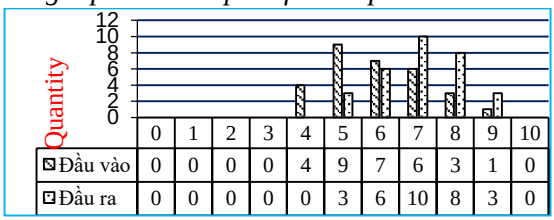


	1	2	3	4	5	6	7	8	9	10
Đối chứng (%)	100	100	100	96.7	90.0	70.0	40.0	16.7	3.3	0
Thực nghiệm (%)	100	100	100	100	100	90.0	70.0	36.7	10.0	0

Figure 3.3: The graph of frequency convergence

Test results with z-test and ANOVA in MS. Excel confirm that measures of thematic teaching and practical exercises as learning topic have a positive impact on the development of direct teaching skills than traditional teaching.

(3) Comparing input and output of the experimental class



	0	1	2	3	4	5	6	7	8	9	10
Đầu vào	0	0	0	0	4	9	7	6	3	1	0
Đầu ra	0	0	0	0	0	3	6	10	8	3	0

Figure 3.4: Comparison of inputs and outputs in experimental class

Results tested by t-test confirm the differences in the average score at the input and output of the experimental classes is statistically significant.

3.2.2. Student and learning research skills

(1) Result before experimentation

(2) Comparing the control class and the experimental class

(3) Comparing the input and output of the experimental class

3.2.3. Teaching design skills

(1) Result before experimentation

(2) Comparing the control class and the experimental class

(3) Comparing the input and output of the experimental class

3.3. Evaluating the research results by expert methods

3.3.1. The purpose and number of experts

Evaluating the necessity and feasibility of measures of teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning.

The number of experts: 30 experts in the field of experimential learning and professional pedagogical knowledge.

3.3.2. Contents for assessment

Selecting professional relevant pedagogical contents for experiential learning.

Using forms of teaching professional pedagogical knowledge based on experiential learning.

Designing practical exercises on professional pedagogical knowledge suitable for experiential learning.

3.3.3. Methods and techniques to conduct

Transfering the main contents of the thesis and the questionnaire for experts by Email or in person.

Having face-to-face conversations with some experts on the issues related to the answers in the questionnaire.

3.3.4. Results given by experts

Test results of Cronbach Alpha and EFA reliability of data given by experts show that the assessment criteria and scales are statistically crucial.

Most experts believe that the measures of teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning are very necessary, feasible and highly practical.

According to experts, the designed illustrations have good or excellent quality, which has confirmed the objectivity of the lessons conducted in pedagogical experimental program.

Conclusion of Chapter 3

Results of the pedagogical experiment show that the measures of pedagogical teaching based on experiential learning has had a positive impact on learning outcomes and learning process of university students of technical teacher education.

Results evaluated by expert method shows the effectiveness and feasibility of the measures of teaching. Most experts are optimistic about the quality of designing illustrated lessons in pedagogical experimental program.

CONCLUSIONS AND RECOMMENDATIONS

1. Conclusions

1.1. Some basic theories of teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning are synthesized and developed. The concept: experiential learning, professional pedagogical knowledge and teaching professional pedagogical knowledge, teaching professional pedagogical

knowledge based on experiential learning is clarified. The essence, principles and characteristics of teaching professional pedagogical knowledge based on experiential learning are carefully analyzed. Also, some appropriate teaching techniques for the learning experience are given. In addition, the characteristics of psychological, learning and social of university students of technical teacher education to propose measures of teaching professional pedagogical knowledge based on experiential learning are clarified.

1.2. After doing research on the reality of teaching professional pedagogical knowledge based on experiential learning at UTEs, it can be seen that professional pedagogical contents are heavier on theory with less practice, so giving the criteria for selecting the suitable lessons for experiential learning is necessary; the positive learning activities of the students have not paid enough attention. Furthermore, the teaching activities of teachers remains focusing on the role of the teacher, and the learning activities of students are mainly simple experiences as listening to lectures, watching movies and videos, reading documents, doing homework ...; Additionally, test and evaluation are much dependent on the essay exam at the end of the course, less focused evaluation process, rather than focusing on the development of teaching skills of students.

1.3. Three measures of teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning are recommended: (1) Selecting relevant professional pedagogical contents for experiential learning; (2) Designing the practical exercises on professional pedagogical knowledge suitable for experiential learning; (3) Using forms of teaching professional pedagogical knowledge based on experiential learning.

Thanks to that, teachers can select professional pedagogical contents in professional pedagogical training program at Hung Yen university of Technical Education, design illustrations of the practical exercises and illustrations teaching professional pedagogical knowledge based on experiential learning for specific lessons as a foundation to conduct scientific experiments.

1.4. The impacts of measures of teaching professional pedagogical knowledge to university students of technical teacher education based on experiential learning through pedagogical experimentation and expert method are evaluated. The pedagogical experimentation conducted Hung Yen university of Technical Education confirms the positive effects of the measures of teaching to the development teaching skills, confirming the correctness of scientific theories. The results of method experts have confirmed the necessity and feasibility of the recommended measures of teaching. These results is consistent with the purposes, tasks and hypotheses proposed.

2. Recommendations

2.1. For UTEs

Professional pedagogical training program towards integration should be reconsidered, linking theory with practice to be able to apply modern forms of teaching to develop teaching skills for students.

They should connect with the vocational education institutions such as vocational colleges, vocational secondary, professional secondary... to jointly organize activities for students to experience.

It is necessary to create democratic mechanisms and learning environment and empower teachers to be flexible about time, and space to design and use the forms of teaching based on experiential learning.

2.2. For lecturers

Teachers should actively do research on experiential learning and teaching professional pedagogical knowledge based on experiential learning, then have comprehensive understanding of the significance of teaching professional pedagogical knowledge based on experiential learning.

Forms of teaching professional pedagogical knowledge based on experiential learning, such as thematic teaching; project-based learning; teaching based on lesson study should be actively used.

Practical exercises on professional pedagogical knowledge corresponding to the lessons are utilised and developed in order to develop teaching skills for students.

2.3. For university students of technical teacher education

Students should have a full awareness of the importance about developing teaching skills at the university in order to meet future career.

Students should self-evaluate and reflect their own progress, then seek the support to complete the task of learning.

In addition, students should participate actively in the activities of the group or class to search for information in order to solve the given task of learning and practical experience

LIST OF PUBLISHED PAPERS RELATED TO THE THESIS

1. Nguyen Van Hanh (2015), "Lessons to Improve Pedagogy Skills based on Experiential Learning Theory", *Journal of Science of HNUE,* Vol. 60, No. 8D, pp. 151-158.

2. Nguyen Van Hanh (2015), "Assessment in Experiential Learning", *Journal of Science of HNUE,* Vol. 60, No. 8D, pp. 93-98.

3. Nguyen Van Hanh (2015), "The reatily of experiential learning operation in pedagogic profession training at Universities of Technical Education", *Journal of Science and Technology – The University of Danang,* No. 10(95), pp. 6-9.

4. Nguyen Van Hanh (2016), "The process of designing and using practical exercises in pedagogic profession teaching for University students of Pedagogical Techniques", *Journal of Science and Technology – The University of Danang,* No. 4(101), pp. 5-10.

5. Nguyen Van Hanh (2016), "Teaching based on Lesson Study on Develop Lesson Design Skills for Student at the University of Technical Education", *VNU Journal of Science,* Vol. 32, No. 2, pp. 1-8.

6. Nguyen Van Hanh (2016), "Thematic teaching in the pedagogy profession for students at the University of Technical Education", *Journal of Science of HNUE,* Vol. 61, No. 6B, pp. 229-238.