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TEACHING STATISTIC AT PEOPLE'S POLICE UNIVERSITY IN A CAREER - BASED APPROACH

Major: Theory and Methods of Teaching Mathematics

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SUMMARY OF DOCTOR'S THESIS IN EDUCATION

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INTRODUCTION

1. Rationale

In the era of knowledge-based economy and international integration, the demand for competitive human resources is becoming increasingly urgent. Human resources determine the success or failure of a country. Being aware of this context, Article 40 Law of Education (2005) stated that: "*Training methods in higher education must put an emphasis on building student's autonomy, self-study, develop creative skill, practicing skills, create favorable conditions for students to join research, experiment and application".* Besides, development strategies presented at the 19th Party's Assembly stated that: "*Improving Education is priority National Policy. Comprehensive and fundamental renovation in a standardized, modernized and socialized, democratic and international integration, among which, renovating education managing policy, improving teachers' and managers' competence is the key. Focusing on improving training quality, put a focus on teaching student's ethics, a good lifestyle, creative competence, and practicing and career skill".*

In this way, training by social demand is confirmed to be the viewpoint to navigate development and assess training quality. This required the education system in general and higher institutions a fundamental change to maintain a key position in ensuring human resources for the whole country. College education should help students develop real-life competence. Graduates should quickly fit in, adapt and meet the demand of the career demands.

In college education, one of the requirements for teaching is the attention paid to student's career's activities. Therefore, putting more practice into training, along with teaching theories related to student's future career is fundamental. It helps students to get access to career-related terms, helps students to understand events and incidents in real life, as well as other social and natural activities. Renovating college education in general in a practice-based approach has been an urgent

demand for education system in Viet Nam, for improving the quality and efficiency of college education.

However, at the moment, renovating college teaching methodology remains a few certain problems, hasn't successfully develop student's autonomy and creativity, because teacher's teaching hasn't been able to show the subject's practicality, hasn't linked theory to practice and students' career, especially in basic science. Students don't take the subjects seriously enough and are unable to see its pracality and become inactive in learning and researching.

Regarding students' competence, students graduated from People's Police Universities, at the scientific conference "Training and Fostering ethical and career skills of inspectors in Judicial Renovation", senior officials at the conference stated that though students have been equipped with fundamental knowledge about their career but remained confused when dealing with real situations, hasn't been able to put their knowledge into practice, therefore, their ability to complete the tasks is limited, training takes a few years to meet the demand.

Currently, there are various research programs have been proposed to improve teaching quality of different subjects at college level. With Statistics, there have been a few typical researches about different subjects, such as: Teaching Statistics according to student's research or teaching Statistics by applying Mathematics into reality. However, there hasn't been any research on Teaching Statistics according to a career-based approach for students of People's Police University.

Meanwhile, Statistics is becoming increasingly important with the Police's real-life. Statistics helps equip students with skills about collecting, detecting and dealing with statistics to complete professional task, help them develop their thinking ability, assessing and provide accurate scientific comments. Therefore, Statistics should be a part of the course to help students of PPU to realize its practicality with their life and professional career. At the same time,

through teaching Statistics, students should be supported to develop their ability to deal with problems that they often have in statistics.

With this awareness, we hope that teaching Statistic at PPU is a promising research idea that will help narrow the gap between trading and working, theory and practice in learning and teaching at PPU. Therefore, out chosen topic is “Teaching Statistic at PPU in a career-based approach”.

2. Objectives of the thesis

Propose a few methods to teach Statistics at PPU in a career-based approach.

3. Subjective and target of the study

3.1. Subjects of the study: the learning schedule, contents, methods of teaching Statistics at People’s Police University

3.2. Target of the study: learning and teaching process in a career-based approach at People’s Police University

4. Hypothesis

If we can successfully propose a number of pedagogical methods in a career-based approach for students at PPU, students will not only be equipped with fundamental knowledge about statistics, but also be developed with career competence.

5. Research areas

5.1. People’s Police career competence, the roles of Statistic in practical career and the demand for teaching Statistics in a career-based approach for students of PPU.

5.2. To study the facts of teaching statistics at PPU in a career-based approach.

5.3. To suggest a number of methods for teaching statistics at PPU in a career-based approach.

5.4. Conduct pedagogical piloting to check for the impacts of teaching methods at PPU in a career-based approach.

6. Scope of the study

- This research focus on studying methods of teaching Statistics in a career-based approach for full-time students from connected program and full-time students at PPU.

- Subjects of the survey: lecturers of Social Statistics; students with field-trip experience and completed the programs of statistic at PPU.

- Conduct pedagogical piloting in a number of classes in Statistics at PPU.

7. Methods of study

In order to deal with the research tasks above, the following methods were employed:

7.1 Theoretical research

To study domestic as well as foreign research results to analyze, assess and summarize and selectively learn scientific information for serves the research duty of the project.

7.2. Observation and surveying

- Class observation for teachers' and students activities (behaviors, awareness, and attitude) in teaching and learning Statistics.

- Interviewing, using questionnaires among teachers and students on:

+ Teachers' awareness in teaching Statistics and Students with working experience on the roles of Statistics in a policeman's career.

+ Teachers' awareness in teaching Statistics in a Career-based approach

+ Methods and procedures in teaching Statistics in a career-based approach.

+ Factors affecting students' interests and academic performance in studying statistics.

7.3. Pedagogical piloting

Conduct pedagogical piloting with a number of classes taught in a career-based approach at PPU. Pedagogical piloting is conducted

based on 2 groups of students (TN and ĐC) to confirm the possibility and effectiveness of the proposed methods.

8. Significance of the study

8.1 Theoretical significance:

- Analyzing the roles of the Statistics with a Police's career.

- Clarify the demands of teaching Statistics at PPU in a career-based approach.

8.2. Practical significance:

- To supplement a system of exercises in Statistics for students

- Improve teaching quality at PPU.

9.Issues for defense

- Teaching in a career-based approach is an essential trend. PPU needs and is able to teach Statistics in a career-based approach.

- Statistics has an essential role with the roles of People's police, especially to develop people's thinking ability, arguing and accuracy in people's police, improving the ability to deal with and present statistics.

- Suggested methods are practical and effective.

10. Content of the thesis.

The thesis consists of 3 main chapters:

Chapter 1: Theoretical and practical background

Chapter 2: Methods of English Teaching in PPU in a career-based approach

Chapter 3: Pedagogical Piloting

Besides, there are also the Introduction, Conclusion, List of Reference and Appendix.

CHAPTER 1: THEORETICAL AND PRACTICAL BACKGROUND

1.1. Overview of the research

1.1.1. Foreign related research studies

In the world, researching and implementing training in a career-based approach, or competency based – approach to be specific, was conducted very early in some countries such as: American, Britain, French. With statistics, there are currently many researches about teaching these contents in colleges, typically are those by M. Artaud, Susan Miles …..

Various researches in the world on teaching Statistics in a career-based approach have shown that career-based training is a tendency proposed by many nations, many scientists interested in research from different aspects and applications in the teaching process at the university. Among those programs, teaching Statistics in a career-based approach has been mentioned. Depending on peculiar features of each nation, these theories have been modified. These research programs focus on researching theoretical issues related to teaching methodology and building up some skills to help learners develop their autonomy as well as their adapting skills at work.

1.1.2. Domestic related researches

In Viet Nam, previously, career-connected teaching has been considered very carefully. However, it was not until the later end of the 20th centuries that some researches were published about changing teaching in a positive way, in order to develop learner's autonomy and creativity, such as the thesis by Pham Van Trao, Phan Thi Tinh, Ngo Tat Hoat, Nguyen Chien Thang, Do Thi Trinh ….

Overviewing all the research, it can be seen that, teaching in general and teaching Statistics in particulaly in a competence-based approach a career-based approach is now a major concern for the State, Ministry of Education in setting a direction for education renovating. Results from these researches have contributed to building

up significant theories in teaching Statistics in a career-based approach with various positive teaching methods. However, researches in these issues are still new and in the process of completion. Up to now, there hasn't been any research that directly looks into teaching and learning Statistics in a career-based approach at PPU.

1.2 A career-based training with at some countries in the world

In this part, we will conduct analysis and summarize the current situation of training Inspecting policeman at the USA, the United Kingdom and Russia.

1.3. Career competency

1.3.1. Competence and career competency

1.3.1.1. Competence

Is a system of personal traits of a individual, the ability to complete some activities of the person, is a collection of complicated psychological features, such as knowledge, skills, experience and art, as well as the subject's attitude with other objects during the process of working.

1.3.1.2. Career

Is a kind of working required from human a specific training time, with certain professional skills, techniques, with appropriate qualities to fit relevant forms of work.

1.3.1.3. Career Competency

Career Competency is the correlation between physical and psychological features of a person with the requirements of the job. Components of career competency are: career knowledge, career techniques and career attitude.

1.3.2. Practical requirements about a People's Police's career competency

About career knowledge: A People's policeman should have adequate understanding of the laws, inpecting techniques and common knowledge about nature and society.

About career skills: should have logical thinking and predicting skills in implementing inspecting techniques in a quick, accurate, subjective, honest manner; a firm decision-making skills in unpredictable situtation of the inspecting process; the ability to organize and practing coordinating in inspecting; the ability to work with people involved in lawsuits as well as involving citizens inspecting; the ability to detect, collect, study and use information, evidence in consulting and making decision in inspecting and making use of the technology devices as well as advances during inspection.

About career attitude: completely loyal, stricly following People's police desciplines. Basic qualities a people's policeman should possess are his political stance; conscience; career ethics, dignity, subjectivity, honesty, cautiousness and a high sense of descipline.

1.4. The teaching schedule of Statistics in PPU and the roles of Statistics in students' career

1.4.1. A brief overview of the content, programs of Statistics

Social Statistics is a part of general knowledge program at PPU. This subject provides students with basic knowledge on samples, hypothesis testing methods, the correlation between the unit, thereby helping the evaluation of the natural phenomena and society to be convenient, accurate, forming survey methods, assessing, predicting and forecasting criminals.

1.4.2. The roles of Statistics in the career

- Develop student's thinking skills – one of the indispensible skills of people working in inspecting
- Develop students' skills in connecting ideas, making use of the knowledge to solve the case in a quick, accurate, objective and honest manner.
- Help student to develop a statistical thinking skills in order to detect, collect and process statistical infomration, to serve the consulting and decision-making during inspecting.

1.5 The real situations of teaching and learning Statistical in PPU in a career-based approach.

- A majority of the content, examples and the systems of exercise during the lectures are intended to train students' calculating skills, there hasn't been many exercises related to the real works of the policeman, also hasn't been able to develop their thinking skills, statistical argumenting, statistical prediction for students.

- It's common for the lecturers to teach formations and statistical procedures, which are separated from real situation, and student's major.

- Most lecturers only provide and train students with the skills and procedures of the subject, but this doesn't prove to be effective in applying statistic in their life.

- Students often equate Statistics and Maths and waiting for the focus will the results to apply calculations.

- Some lecturers are not yet to be dedicated to their job and lack intensive training in Statistics.

Summary of Chapter 1

In this Chapter, the following issues have been presented:

- Research on a number of domestic and foreign research on teaching in a career-based approach. Writers share one same point of view on some teaching method on a career-based approach.

- Reference and analysing the available materials on necessary career skills for a people's policeman.

- To conduct surveys and practical assessment of teaching Statistic at PPU on a career-based approach.

- By clarifying the roles of Statistics being taught at PPU and some other reference materials, it can be seen that, to implement teaching on a career-based approach, these following requirements should be met:

Firstly: put the practical exercises into teaching and learning.

Secondly: Develop the importance of Statistics in a police career development during teaching and studying

Thirdly: Train students the ability to use Statistics to deal with specific situations in a people police's work.

Forthly: studnets need to know and practice practical tasks of a people's policeman related to Statistics right from the time studying at PPU.

Chapter 2: METHODS FOR TEACHING STATISTICS AT PPU IN A CAREER-BASED APPROACH.

2.1. Research Directions

2.1.1. Direction 1: A system of pegagogical methods are developed to make sure students learn and have a good understanding of Statistics knowledge.

2.1.2. Direction 2: The system of pedagogical methods need to strictly follow the requirements of teaching Statistics on a career-based approach at PPU.

2.2. Methods of Teaching on a career-based approach

2.2.1. Method 1: Put more practical examples in teaching Statistics at PPU

2.2.1.1. Targets and significance:

Contributing to training arguing and predicting skills, logical thinking in implementing inspecting methods and decision-making ability with solid legal basis in unexpected situations by self-studying to solve practical statistical questions.

2.2.1.2. Methods of implementing

- First, practical examples can be put in giving new lectures by stating questions, proposing an issue or a small exercise to evoke students' learning motivation when building up theory for a new lesson.

- Second, practical examples should be giving when conducting class practice exercise, testing or reviewing classes with specific content to consolidate the theory that students have learnt.

- Thirdly, using available related to statistics when teaching issues related to multiple subjects.

2.2.2. Method 2: Improving traing memory on a scientific basis, to stimulate student's thiking by using mind-map in thinking process

2.2.2.1. Objectives and significance

This methods helps students to train their remembering skills, develop their creative thinking and applying new methods in studying, working, thereby, contributing to develop their deduction, prediction, logical thinking skills in conducting investigation; skills to conduct

quick, accurate, objective honest investigation; skills to apply technology in their jobs.

2.2.2.2. Methods of the study

First, improving memorizing skills for students while teaching Statistics.

- What students have learnt in previous lesson should be revised and put into systems by the teachers.
- When planning a lesson, teachers should pay attention to inheriting the knowledge that students have learnt at high school.
- Select typical tasks, thereby exploit, practice the old knowledge as well the new.
- Create specific Maths samples, basing on the knowledge learnt, and generalize for more abstract knowledge.

Secondly, introduce and use Mind-map in teaching to stimulate creative thinking for students.

For example: In the part about Probability, there are various study units such as: Blank Test and Event; Definition of Probability; Formations to calculate Probability. Teachers may teach students to use mindmaps by using MindMap 9, so arrange concepts and properties in this chapter.

The designing process of the MindMap on paper (board, cardboard...) can be conducted through the following steps:

- Choose the central images or key words
- Draw the branch lines level 1, level 2, level 3,... and complete the MindMap

2.2.3. Method 3: Practice frequently so that students can make use of Statistics in collecting and processing data and assessment in working on research projects

2.2.3.1. Objectives and significance

This methods helps students form their decision making skills with legal basis in unexpected situations of investigating companies; skills to detect, collect, and study information for consulting and

making decision for researching crimes and using techonology at work.

2.2.3.2. Research Methods

- Determining which data needs to be collected, their order of priorities

- Initial data collecting methods.

- Planning statistical survey.

- Depending on research objectives and contents to deduce on data collecting methods; select tools and human resources, as well as appropriate time to investigate.

- Train students to understand and realize the samples, scale of the sample, how to process, present and calculate on the features so that the conclusions for the whole procedures are as reliable as possible.

For example: During working on the research topic "*Police activities in Lam Dong in inspecting thieves cases",* the lecturers can instruct students to make use of the learnt knowledge in Statistics to analyze, assess, judging on how thieves cases are happening in Lam Dong between 2010 and 2014.

Basing on analyzing statistical data as well as tables and figures, students can conclude the features of the research subjects, such as: thieves case situation; the rate of thieves cases; how serious they are in the past few years; investigation results.

2.2.4. The fourth solution: Trainning modeling capability for students will help them deal with Statistics-related tasks.

The four-step process aiming at improving the capacity of modeling for students through practicing real situations and problems, and using mathematical tools to solve the problems. The process is described as in Figure 2.2 .

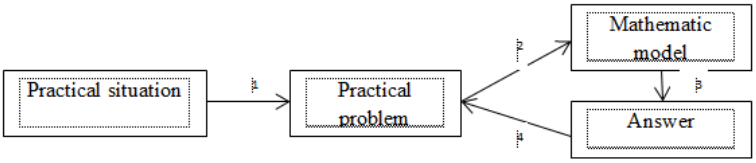

Figure 2.2. Steps to solve the professional situations bymathematical tools

Step 1: Basing on the professional real situations to design the questions

Step 2: Building the mathematic model basing on the situation

Step 3: Dealing with the models

Step 4: Analyzing and showing the results

2.2.4.1. The purpose and meaning

- To help students improve the analyzing and problem-solving capacities as well as practice mathematical thinking.

- To improve the cooperation spirit in studying, the independence and self-confidence for students throughgroup exchange activities .

- To strengthen the interdisciplinary connection in studying other subjects.

2.2.4.2. Methods:

Firstly, the teachers introduce the problems

Secondly, the teachers guide students to identify the problem

Thirdly, the teachers guide students to handle the problem

Fourthly, the teachers guide students to propose the similar situations and apply methods to solve them.

In this way, firstly, teachers give one or more than one examples then have students do research and solve problems by themselves. After that, students suggest similar situations and problems.

Example: The situation: assessing the effectiveness of drug detoxification with methadone applied inHo Chi Minh City.

Step 1: Basing on the detoxication situation, teacher introduced the following problem:

At the meeting on assessing the effectiveness of drug detoxication from 2014 to 2015 held by the Public Security and Health Department of Ho Chi Minh City. According to the Ho Chi Minh Health Department's representative: In 2013, in Ho Chi Minh City, where 49% population have drug addiction and then tend to take drugs again after the drug detoxification and treatment period. By the end of 2015, after two years of applying drug detoxication by methadone, the survey showed that among 1250 participants, 510 people suffured from drug relapse. With the statistical significance of 1%, and with the role of an suppervisor in the meeting, participants are asked to give feedbacks on the effectiveness of the drug detoxification method using methadone.

Step 2: Building the mathematical model basing on the situation.

In this situation, in order to know the drug user rate in Ho Chi Minh City, it is better to use the statistical tool to handle the collected data, then apply specific formula to calculate and assess the proportion of people re-addicted to drugs after 2 years of treatment with methadone, the hypothesis testing in proportion can be applied.

Step 3: The answer

Testing: The rate of people suffering drug relapse before using Methadone: p=0.49. Hypothesis testing: H_o: p = 0,49 với đối thiết: H_1: $p \neq 0{,}49$. Ta có:

$$f = \frac{\text{The number people suffering druf relapse}}{\text{The number people using the drug detoxification by Methadone}} = \frac{510}{1250}$$

$$= 0{,}408$$

$$U_o = \frac{|f - p_o|\sqrt{n}}{\sqrt{p_o.(1-p_o)}} = \frac{|0{,}408 - 0{,}49|\sqrt{1250}}{\sqrt{0{,}49.(1-0{,}49)}} = 5{,}7994$$

From the table: $\gamma = 1 - \frac{\alpha}{2} = 1 - \frac{0{,}01}{2} = 0{,}995$

$U\gamma$ = U(0,995) =2,576.

U_o = 5,7994; $U\gamma$ = 2,576 =>$U_o > U\gamma$. H_1 (accepted), H_o (rejected) with the statistical significance of 1%.

Step 4: Analyzing and presenting the results

Therefore, after 2-year treatment with methadone, the percentage of people not being successful in detoxification is 40.8%. In other words, the drug detoxification using methadone has been effective (with the statistical significance of 1%).

2.2.5. Step 5: Boosting the Application of Project-based approach in teaching Statistics at PPU.

2.2.5.1. Purpose and meaning

Project-Based Learning will help students in the PPU to develop skills in surveying quickly, accurately, objectively and truthfully; sharpen their skills in detecting, collecting, researching and processing information, which supports the criminal investigation; improve communication, presentation and cooperation skills

2.2.5.2. Methods

The content of Statistics is able to be taught basing on the teaching methods in project: *"The basic concept of probability", "random value and distribution function"; "the problem of testing the hypothesis"; "Sample Theory"; "correlation and linear regression."*

The selection of projects according to the contents is usually introduced, guided and provided further information through the examples in the different fields by teachers.

For example: For content of Statistics taught in the People's Police University, while teaching according to "the project of mastering knowledge and applying it in practice," the content can be can applied for the project " *study of traffic accidents in 2015"* ...

Project Introduction

Process

Step 1: Identify the topic and the object of the project

Step 2: Planning

Step 3: Collect information

Step 4: Conduct the project

Step 5: Present the project

Step 6: Evaluate the project

Summary

Chapter 2 has presented 3 orientations when developing methods on Teaching Statistics in the PPU in a career-based approach.

Basing on thesedirections, the thesis has suggested five methods on teaching Statistics in the PPU in a career-based approach, including: For the Statistics, application of Statistics while teaching it in the PPU should be provided; enhance memory training basing on a scientific basis, train students' critical thinking skills through mind-maps during teaching; regularly train students in applied Statistics for data processing and evaluation and implementation of scientific research projects; train modeling capability for students to solve problems related to the Statistics at the PPU; Strengthen the teaching methods at the PPU

Chapter 3

PEDAGOGICAL EXPERIMENTS

3.1.The objective, content, object and method of experimental education

3.1.1. The objective

- Scientific hypothesis testing
- Initial assessment of the feasibility and effectiveness of the methods proposed in the thesis

3.1.2. The content

- Apply experimental teaching for methods mentioned in the Chapter 2 for some following contents:

+ For "*The basic definition of Statistics*", introduce teaching methods according to the method 1 and method 2

+ For "*Theoretical sampling*", "*The hypothesis testing*" and "*Correlation and linear regression",* the methods 1, 3,4,5 are applied.

- Evaluate the results after the experimental teaching: The criteria to assess students will be based on testing scores of all subjects at the end of the semester and the competence in implementing and performing the projects.

3.1.3.The object

- Full-time students
- Students in transition courses

3.1.4. The method

The phase 1: Investigation and influence experiment

Conducted in 08/2014

Phase 2: Influence experiment

Conducted in 4-5/2016

3.1.5. Objective assessment

3.1.5.1. Objective assessment

Criterion 1: Studying results

The criterion 2: The capacity of students for professional development through the projects

- Data processing method: Statistic method in which the following specifications are used:

+ *Percentage (%)*

+ *Average value X:*

$$\overline{X} = \frac{1}{N}\sum_{i=1}^{n} X_i$$

N: the number of student, X1: score (1, 2,…10)

+ *Standard Deviation, Variance and coefficient of variation:*

* *Standard Deviation*:

$$\delta = \sqrt{\frac{1}{N}\sum_{i=1}^{n}\left(X_i - \overline{X}\right)^2}$$

* *Coefficient of variation* C_v:

$$Cv = \frac{\delta}{\overline{X}} \times 100\%$$

- For hypothesis testing, using normal distribution, H_0: **"**Results of class TN are not better than that of class ĐC" and the counter theory H1: "Results of class TN is higher than that of ĐC with validity".

Within this research, we use α = 0,05, therefore $U_\alpha = 1{,}65$.

If $UTN > U_\alpha$ then H_0 is refuted; if $U_{TN} \leq U_\alpha$ then H_0 is challenged.

Statistical Data	Experiments			
	GPA 1		Project GPA	
	TN	ĐC	TN	ĐC
N	35	35	35	35
Mean	6.86	6.23	6.74	6.11
Standard Deviation	1.240	1.330	1.336	1.255
Coefficient of variation	18.076	21.350	19.820	20.540
U_{TN}	2.02		2.00	
Meaning	0.05		0.05	
U_o	1.65		1.65	
Comparison	2.02>1.65		2.00>1.65	
Conclusion	Refute H_o, Accept H_1		Refute H_o, Accept H_1	

Figure 3.5:

Final exam statistics after 2nd graduation exam

The piloting process and the post piloting results showed that:

- The final grades of TN class is higher than ĐC class, showing a better receptive skills

- The skills to conducting learning activities of TN class are better than that of ĐC, proved by such skills as: detecting, collecting and process information, communicating, present and collaborating.

3.1.5.2. Quantitative assessment:

- From the participating lecturers and observing lecturers:

+ During learning, students were more actively involved in thinking and speaking, detecting and solve more problems, presenting their ideas and make the lessons more exciting.

+ Piloting new methods made students more excited and stimulated their creativity and learning desire.

+ Students gradually master the basic knowledge of the subject, and form necessary skills for their future career at the same time.

+ The effectiveness of the piloting lessons in developing students' professional skills was well-received.

- *From Lecturers of Professional skill training department:*

+ Students were able to grasp the job-related content when the lecturer introduced in the lesson.

+ Good team-work skills for students when they are assigned by the teacher actively joined in group activities.

+ Students were able to make a presentation on a number of problems in front of the class, the ability to make an argument, logic and persuasive problem-solving skills.

+ Students were able to introduce and present an issues in front of the class, be able to study, collect and process information when assigned the tasks in real life as well as use various software to support their study.

+ Students were able to speculate in professional situations and persuasively suggest solutions when teacher brought about an issue.

- *From students:*

With TN class:

+ Self- assessment on level of interest, independence, positivity and student's creativity in piloting classes all received appraisal, students were much more excited in joining class activities.

+ Understanding of professional knowledge after piloting classes showed positive changes.

+ Students' professional skills as well as knowledge were greatly improved.

+ The arguing skills, problem-solving skills were logically presented, speculating in related situation during their future work were also improved.

Conclusion of Chapter 3

Piloting results showed that with the entry level between 2 classes TN and ĐC were similar, but after piloting process, it was showed that academic results of class TN as well as their professional skills and understanding of their future work were significantly better than that of ĐC class.

CONCLUSION AND IMPLICATIONS

1. Conclusion

- Teaching in a career-based approach is an essential trend. It is necessary that PPU put more focus on this direction.

- Statistics has great impacts on the formation and developing specific skills for future people's policeman, especially in developing their logical thinking, deducing as well as the accuracy in their work. Teaching Statistics in a career-based approach encourages students' positivity, which is suitable with our current trends in education.

- Surveying results show that, students' awareness in general and about the role of Statistics, targets and requirements of Statistics in a career-based approach remains limited.

- Basing on professional features and the roles of Statistics, we suggested some requirements for teaching Statistics at PPU in a career-based approach. This research suggested some research directions and 5 methods of teaching Statistics in a career-based approach.

2. Implications

- More time should be spent for basic science subjects, among which Statistics is one, so that the lecturers can develop professional skills for students

- Frequent training is required and teachers should be required to apply their methods in a career-based approach at PPU in other subjects as well.

THE RESEARCHER'S PUBLICATIONS

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