MINISTRY OF EDUCATION AND TRAINING
HANOI NATIONAL UNIVERSITY OF EDUCATION

NGUYEN KIM HOANG

MANAGING THE INFORMATION TECHNOLOGY TEACHERS OF UPPER SECONDARY SCHOOL UNDER THE COMPETENCY APPROACH

Major: Education Management
Code: 9 14 01 14

THE ABSTRACT
OF Ph.D DISSERTATION OF SCIENCE EDUCATION

HA NOI - 2018

The dissertation was completed at the Hanoi National University of Education

Supervisor:Prof, Dr Tran Huu Luyen
Assoc.Prof, Dr Truong Thi Bich

***Objection 1*: Assoc. Prof. Dr Pham Van Son**
Ministry of Education and Training

***Objection 2*: Assoc. Prof. Dr Ha The Truyen**
National Academy of Education Management

***Objection 3*: Assoc. Prof. Nguyen Thi Thanh Huyen**
Thai Nguyen University of Education

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INTRODUCTION

1. Justification for choice of the topic

In the trend of global integration, information technology has been changing the nature of labor, organizational change and production process. The new educational environment, the policy of innovating IT teaching and learning IT is also set for upper secondary school IT teachers a new requirements in terms of quality and capacity, organizational development, building cultural environment, motivating self-learning and creativity...

The Party and State have advocated economic development to enhance education and training. Directive No. 40-CT/TW dated 15/06/2004 of the Secretariat of the Party Central Committee and Resolution No. 29-NQ/TW dated 04/11/2013 The 8th Conference of the XI of Central Committee. In order to develop education and training, it is important first to consider human beings as core elements and teachers are always considered as the core force of the development of education and training. Most importantly, the quality of education and the development of education of the Party and the State are fulfilled.

However, the situation of teachers in upper secondary school teachers compared with the requirements of teaching computer science in upper secondary schools today are many inadequacies: lack of quantity, the quality is not high... Therefore, this team can not meet the requirements of teaching information technology and IT application in the school. One of the main causes of this situation is the limited management of informatics.

What measures should be taken by the Department of Education and Training to effectively manage upper secondary school IT teachers? How can IT teachers in higher secondary schools develop in terms of their professional competence as well as their pedagogical level, IT experts' fields to meet the requirements of teaching, training and application of information in Upper secondary schools ?

From the above analyses, the topic ***"Managing the information technology teachers of upper secondary school under the competency approach"*** was chosen.

2. Research purpose

Approach competency-based and apply Leonard Nadler's human resource management theory to research and assess the current status of IT teachers management in upper secondary school education at Department of Education and Training, therefore proposing measures to manage IT teachers aim to improve the upper secondary school's quality.

3. Research object and subject

▪ ***Research object***

The information technology teachers of upper secondary school under the competency approach.

▪ ***Research subject***

Managing the information technology teachers of upper secondary school under the competency approach in the Red River delta provinces.

4. Hypothesis

At present, management of IT teachers in upper secondary school is still limited in quantity and structure, especially in quality. In which, the IT teachers competence was not improved, the core IT teachers potential was not exploited. If proposing measures to manage IT teachers upper secondary school in accordance with competence-building approach and Leonard Nadler's human resource management theory, noting the role of stakeholders will contribute to improving quality management of IT teachers in upper secondary schools of Department of Education and Training.

5. Research tasks

▪ Systematize theoretical issues in managing upper secondary school informatics by approaching competence.

▪ Survey and evaluate the status of IT management in upper secondary schools and factors affecting the management of information technology in upper secondary school.

▪ Proposed measures to manage upper secondary school informatics by approaching competence.

Assay and experimental the measure: ***"Implemeng training and fostering to improve the IT teacher group quality under the competency approach"***.

6. Research limitation and scope

▪ ***Research content:*** The topic focuses on Leonard Nadler's human resource management theory and competence-approach to conduct research.

▪ ***Regarding management:*** The dissertation focuses on the management measures of the Department of Education and Training for upper secondary school informatics librarians, in decentralized relationships with upper secondary school principals and provincial people's committees.

▪ ***About the study area:*** Practical research and empirical research was conducted in six provinces in the Red River delta. Random samples of 163 upper secondary schools in urban areas, seaport areas, delta areas, rural areas, etc., represent three groups of geographical areas: favorable - less favorable - difficult.

7. Methodology and research methods

7.1. Methodology

- Approach to competency-based theory;
- Approach to human resources management theory;
- Approach to management decentralization theory;
- Approach to standardization

7.2. Research methods

- Theory research group
- Reality research group
- The statistical methods

8. The arguments protection

(1) Creating and exploiting the professional competence framework of upper secondary school IT teachers by the combination way between competency approach and Leonard Nadler's human resource management theory, helps the Department of Education and Training to improve the core IT teachers potential, turn them become experts support for applying IT in teaching, innovation education and school management.

(2) Management of information technology in upper secondary school by approaching competence in the current period is limited in the development planning and motivation, the working environment for IT teachers, thus not promoted Be the best of the team of IT teachers.

(3) Management of information technology in upper secondary schools by approaching the competence by the synchronous impact on the factors: planning, use, training, fostering, and create working environment, motivation to work for IT Informatics Upper secondary schools in the direction of standardization of competence will contribute to improve the quality of information technology upper secondary school in each locality.

9. New contribution of the research

- *Theoretically:* Supplement and build a theoretical foundation for the management of upper secondary school IT teachers by approaching the competence of Department of Education and Training in order to create a team of IT experts for each local school.

- *Practically:*

+ Discovering the current situation of teachers in upper secondary school teachers and the current situation of management of IT teachers of upper secondary schools in the Red River delta and other influencing factors;

+ Accomplishing the competence framework for upper secondary school IT teachers, proposing and confirming the effectiveness of measures to manage IT teachers in upper secondary school according to competence approach, aim to meet the demand of innovation education.

10. The structure of the dissertation

Beside some parts such as: Introduction; Conclusion and Recommendation; Reference document and Addendum, the dissertation includes three chapters:

Chapter 1: Theoretical basis of Managing information technology teachers of upper secondary schools under the competency approach.

Chapter 2: The real situation of Managing information technology teachers of upper secondary schools under the competency approach (in the Red River delta provinces)

Chapter 3: Management solutions of information technology teachers of upper secondary schools under the competency approach (in the Red River delta provinces)

Conclusions and recommendations

References

Appendixs

Chapter 1
THEORETICAL BASIS OF MANAGING INFORMATION TECHNOLOGY TEACHERS OF UPPER SECONDARY SCHOOLS UNDER THE COMPETENCY APPROACH

1.1. Overview of the research

The studies under the teacher competency approach almost aim to help teacher accomplishing the professional competency by themselves, guide school's manager improving training curriculum, fostering teachers, support school's leader planning, recruitment, evaluating and keep developing teachers professional.

Conclusion, there are a number of studies researching about managing IT teachers of upper secondary school or managing under competency approach. However, there is no study focusing on managing IT teachers of upper secondary school under the competency approach.

The issues need to research in next step

Until now, there is no study focusing on managing IT teachers of upper secondary school under the competency approach based on creating and

exploiting their competencies by various angle. Following the integration trending and the specific characteristic of information technology, research on managing IT teachers of upper secondary school under the competency approach is playing an important and emergency role in order to each upper secondary school applies on reality faster.

Therefore, this thesis is the first research on *managing IT teachers of upper secondary school under the competency approach*.

1.2. The group of information technology teachers of upper secondary school

1.2.1. Definition of information technology teacher of upper secondary school

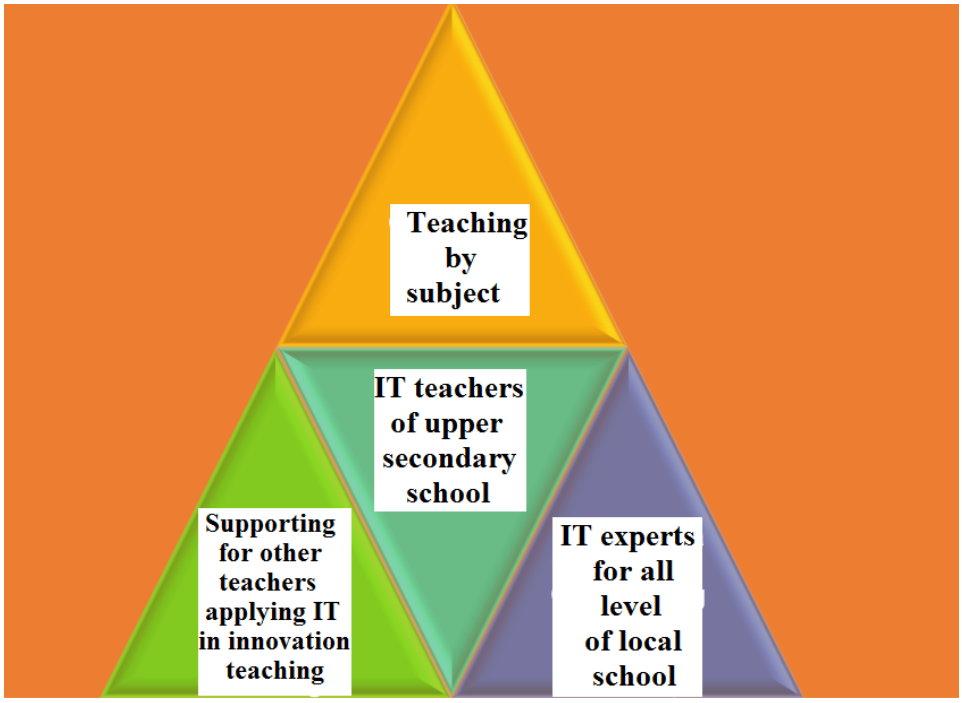

Figure 1.1. The role of IT teachers of upper secondary school

The group of IT teachers of upper secondary

The group of IT teachers of upper secondary school is collected by teachers who teaching information and technology in upper secondary schools and specialists in IT application in teaching and learning, education and management of schools. They are capable of meeting other tasks related to the profession, meeting the qualification and competence-standards in order to well achieve the objectives of general education.

1.2.2. Characteristics of IT teachers of upper secondary school

- Knowledge: IT teachers need to have extensive knowledge of specialized knowledge, specific to the subject of information technology in high school.

- In terms of pedagogical skills, in addition to the general pedagogical

skills such as planning, organizing classes, communicating... to IT teachers, practical skills and manipulations on the means of teaching are same important.

- In terms of assessment capacity, the IT teacher needs to have an overall assessment capacity that closely follows each student.

1.2.3. Competency, competency-framework and competency-based approach

Competency-based approach

- Determine the competency-framework required by a specific task or activity of the organization;

- Based on existing competency-framework, implementation of management activities;

- Personal capacity development based on capacity framework.

1.2.4. Professional standards of teacher of upper secondary school and IT teachers' competency-framework of upper secondary school

The thesis defines that structure of IT teachers' competency-framework of upper secondary school including (1) Teaching competency; (2) Educational competency; (3) Self-study, self-improvement and career development competency; (4) Research and apply in practice competency; (5) IT professional competency for managers, teachers; (6) Social competency.

1.2.5. The core information technology teachers group

The core IT teachers group is also the core force to help the Department of Education and Training to implement teaching, education innovating and educational management on the basis of applying IT to education and educational management.

1.3. Human resource management and competency approach in managing information technology teachers of upper secondary school

1.3.1. Human resource management

1.3.2. Human resource management models

1.3.3. Leonard Nadler's human resource management model

According to Leonard Nadler, the task of human resource management including: (1) *Creating the potential* of human resources through training, upgrading, standardizing, upgrading human resources; (2) *Maximizing and effectively exploited that potential* towards the goals of the organization's system; (3) Creating a favorable environment for *potential development*.

1.3.4. Apply the theory of human resource management in managing information technology teachers of upper secondary school

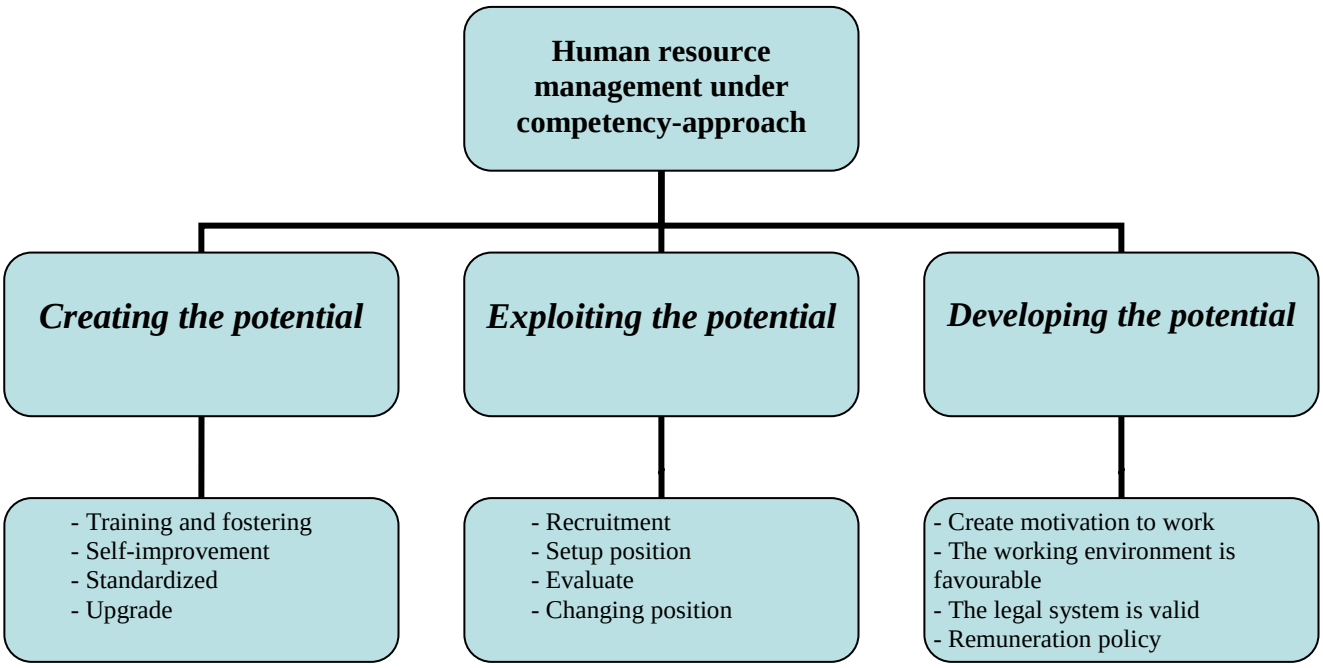

Figure 1.6. Model of managing IT teachers of upper secondary school based on competency-approach and applied to HRM theory of Leonard Nadler

The requirements for management of IT teachers based on human resource management theory and competency-approach are:

(1) Managing information technology teachers of upper secondary school in a qualitative approach should be based on the view that individual teacher competence is central to management.

(2) Managing information technology teachers of upper secondary school must be derived from the capacities associated with the subject of computer science in high school.

(3) Managing information technology teachers of upper secondary school under the capacity-based approach needs attention to meet the objectives of teaching computer science in high schools.

1.4. Managing information technology teachers of upper secondary school under the competency-based approach

1.4.1. Decentralization in managing information technology teachers of upper secondary school

(1) Implement the Joint Circular: No. 11/2015/TTLT-BGDĐT-BNV;

(2) Properly assigning authority, responsibilities and duties in managing information technology teachers of upper secondary school at all levels of management/ self-responsibility and self-responsibility of the Department of Education and Training;

(3) Implement functions and tasks of the Department of Education and Training to decentralize in managing information technology teachers of upper secondary school;

(4) Implement functions and tasks of the Principal of upper secondary school to decentralize in managing information technology teachers of upper secondary school;

(5) Coordinating the recruitment, management and use of information technology teachers of upper secondary school.

1.4.2. Definition of managing information technology teacher of upper secondary school

Managing IT teachers of upper secondary school under the competency-approach is the process that affects the development of professional competence of IT teachers through building a system of planning, recruitment, training, evaluating and motivating in order to improve the quality of IT teachers and transforming the core IT teachers become IT expert in innovative teaching, education and managing upper secondary schools.

1.4.3. Content of managing information technology teacher of upper secondary school

1.4.3.1. Build planning for the development of information technology teacher of upper secondary school under competency-based approach

(1) Assess the quantity, structure and quality of information technology teachers periodically;

(2) Build planning for the development of information technology teachers to ensure the quantity, the teacher/student ratio and the quality;

(3) Analysis and design the tasks for information technology teacher base on the competency;

(4) Describe the position and tasks of each IT teacher in the school;

(5) Identify practical demands for quantitative development and quality improvement of information technology teachers based on work demands and position;

(6) Identify the solutions to implement the planning;

(7) Identify the schedule and conditions for implementation of the planning;

(8) Approving the planning/recruitment plan.

1.4.3.2. Recruitment the IT teachers of upper secondary school under the competency-based approach

(1) Build a plan to recruit practice teachers;

(2) Build criteria for recruitment towards the competency of IT teachers and publicize recruitment criteria;

(3) Identify the competency framework for the vacancy;

(4) Create a source to recruit IT teachers through different sources;

(5) Attract exellent teachers from many recruitment sources;

(6) Implement the decentralization in recruitment;

(7) Publicize the recruitment method, build the order and procedures for recruitment in accordance with the law;

(8) Organize the recruitment of IT teachers according to the order and procedures and provisions of law;

(9) Employees have to meet the requirements as prescribed;

(10) Notify the recruitment decision exactly and timely.

1.4.3.3. Using and screening of IT teachers of upper secondary schools in the competency framework

(1) Use IT teachers properly in position; Arrange IT teachers reasonable;

(2) Ensure the suitability between the competency and the position of each IT teacher;

(3) Based on the discovery of each IT teacher's strengths, assign suitable tasks in orrder to develop the individual competency;

(4) Implement the inspection and supervision mechanism to ensure that IT teachers properly perform their functions and tasks;

(5) Ensure the continuity in the IT teachers group.

1.4.3.4. Organize activities of training and fostering the IT teachers in the direction of raising the professional competency

(1) Design and publicize the training and fostering plans;

(2) Identify the objectives and the training plan based on demands and compretence of the IT teachers;

(3) Organize training and fostering the right subjects, the right demands of the IT teachers;

(4) Training and fostering of IT teachers together with the using and screening of IT teachers;

(5) Use the competency framework as a tool to guide the design of the program, the content, the method and the form of training and fostering.

(6) Implement the contents of fostering IT teachers under the competency framework;

(7) Coordinate the different forms of training and fostering in the fostering of IT teachers;

(8) Evaluate the outputs of the training and fostering process through the results of practical activities in education.

1.4.3.5. Examine and assess the IT teachers of upper secondary school under the competenc framework

(1) The criteria and standards assessing the IT teacher (The Upper secondary school professional standards);

(2) The content of IT teachers assessment based on the political qualities, ethics and lifestyles;

(3) The content of IT teachers assessment based on the assigned performance/tasks;

(4) The content of IT teachers evaluation are based on the ability to develop;

(5) The process of carrying out the process of evaluating the practice teacher;

(6) Disclosure of results of pedagogical assessment;

(7) Use the correct assessment results.

1.4.3.6. Creating a working environment and motivation for the teachers of upper secondary school teachers to develop their professional competence

(1) Implementing the general regulations of the State on policies and regimes for upper secondary school teachers;

(2) Implement policies and treatment for teachers in remote, mountainous and island areas;

(3) Promulgate and implement local policies for good teachers;

(4) Create conditions for teachers to have the opportunity to study, train and improve their skills, exchange...;

(5) To seriously and equitably observe the State's regulations on rewarding, disciplining, treating and honoring teachers;

(6) to create consensus in pedagogy;

(7) building a friendly educational environment;

(8) Establish management culture in the school;

(9) setting up a cluster management system;

(10) Cooperate with centers, training organizations at home and abroad to expand the opportunities for exchange and learning for teachers;

(11) Addition of material facilities, teaching aids to support practice;

(12) To supplement the information technology infrastructure in service of teaching and learning activities in schools;

1.5. Factors influencing the management of upper secondary school IT teachers by competence approach

1.5.1. The rapid development of science, technology, information

(1) The development of application software and rapid change of versions of operating systems;

(2) Development and change of management software such as Mcroft Access, Quattro, Foxpro, Oracle, SQL Server...;

(3) The development of social networking sites, school websites;

(4) The development of open source applications;

(5) The development of the Internet;

(6) Rapid change of computer hardware to meet the speed of development of software, applications.

1.5.2. Management mechanisms and policies of the State and the education and training sector

(1) The selection of computer subjects is optional or compulsory in general schools;

(2) Policy, recruitment process for upper secondary school teachers;

(3) Evaluation of upper secondary school teachers by upper secondary school teachers;

(4) Mechanisms on decentralization of information management for upper secondary school informatics.

1.5.3. Practical teaching conditions at school

(1) The system of classrooms and computer labs to meet the demand for informatics in schools;

(2) computer systems, projectors and IT equipment for teaching informatics in schools;

(3) computer system and hardware upgrades to keep up with changes in IT in general and software and applications in particular;

(4) Internet, LAN,...

1.5.4. Teaching environment

(1) The position of computer teacher in upper secondary school;

(2) Pedagogical landscape of the school;

(3) Solidarity, mutual support of all teachers in the school;

(4) Friendly working environment.

1.5.5. The competence of education management staff

(1) Awareness of the ICT staff on the position of informatics in the school;

(2) Awareness of the TEAM staff on position and role of informatics teacher in the school;

(3) Competence to direct, organize, select and use human resources of managerial staff;

(4) Capability to inspect and evaluate trainers of trainers;

(5) The ability to encourage, motivate, create a favorable working environment for teachers;

(6) Assertiveness, independence, timely updates of education and IT.

Conclusion Chapter 1

Chapter 2
THE REAL SITUATION OF MANAGING INFORMATION TECHNOLOGY TEACHERS OF UPPER SECONDARY SCHOOL UNDER THE COMPETENCY APPROACH
(In the Red River delta provinces)

2.1. Overview of the study sites

The thesis conducts to sudy the real situation of managing information technology teachers of upper secondary school under the competency approach at 06 provinces belong to the Red River delta, including Hanoi, Hai Phong, Hai Duong, Hung Yen, Thai Binh, Quang Ninh in 03 the areas: favorable, less favorable and difficult.

2.2. Research organization status

2.2.1. Purpose, content, research methodology

The thesis conducts the survey by questionnaire and interviews the Department managers, upper secondary school managers and IT teachers under 04 contents:

(1) The real situation of The quality of IT teachers in upper secondary schools;

(2) The real situation of IT management in upper secondary schools under competency approach;

(3) The real situation of decentralization in the management of IT teachers of upper secondary schools;

(4) The real situation of factors influencing the management of IT teachers in upper secondary schools.

2.2.1.1. Purpose of the study

2.2.1.2. Content of the research status

2.2.1.3. Research methodology

2.2.2. Select the sample site and research object

The total number of subjects studied was 923. There were 344 administrators and 579 information technology teachers in 163 upper secondary schools in 06 Red River delta provinces.

2.2.3. Periods of study of the real situation

There are 05 periods: Building the criteria and scale; Designing the questionnaire design stage, observation minutes, in-depth interviews; Conducting the trial investigation; Accuracing and formal survey; Analysing and processing results.

2.2.4. Data processing methods and evaluation scales

Using quantitative and qualitative research methods.

2.2.5. Criteria and evaluation scale

Using the 5 rating scale.

2.3. The real situation of the IT teachers of upper secondary schools in the Red River delta provinces

2.3.1. Number of the IT teachers in

Table 2.5. Actual size of school, number of teachers of informatics Upper secondary schools in the Red River delta

No.	***Provinces***	***Schools***	***Managers***	***All teachers***	***The ration of teacher/class***	***IT teachers***
1	Hà Nội	108	348	8565	2.23	389
2	Hải Phòng	38	126	2914	2.62	137
3	Hải Dương	41	125	2469	2.27	144
4	Hưng Yên	26	94	1653	2.32	94
5	Quảng Ninh	30	104	1693	2.25	101
6	Thái Bình	29	96	2226	1.97	109
Total		***272***	***893***	***19520***	***2.27***	***974***

(Source: Education Statistics 2016 – 2017 (MOET)

2.3.2. Structure of IT teachers of upper secondary schools

The thesis conducts structure of age group and working seniority; structure of professional qualifications; structure of political and foreign language.

2.3.3. The quality of IT teachers in upper secondary school

(1)According to the structure of the target group

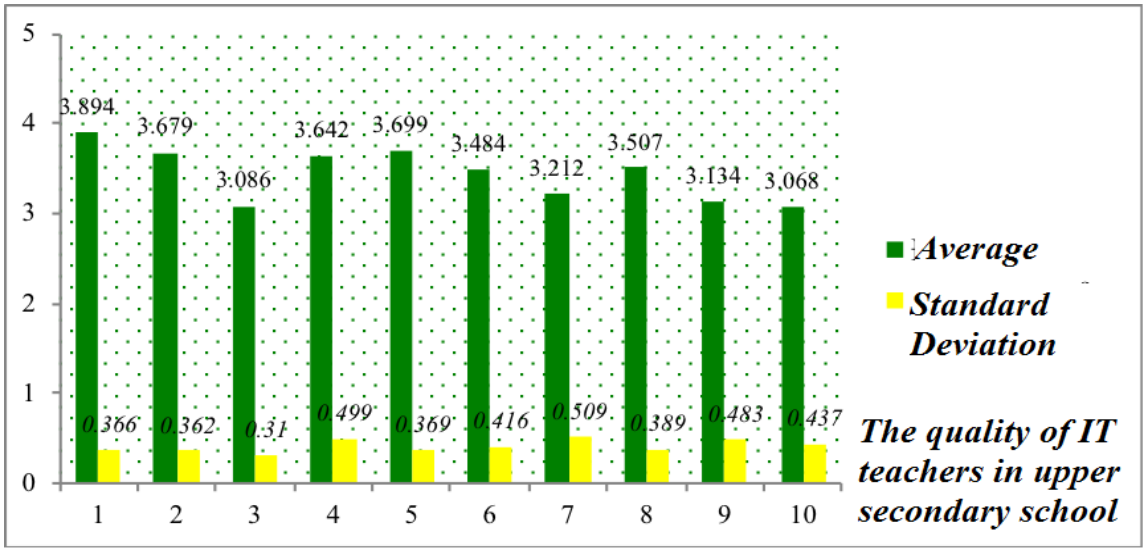

Chart 2.1. Quality of teaching staff of upper secondary schools in the Red River delta (according to the structure of target groups)

(2) According to the structure of the survey group

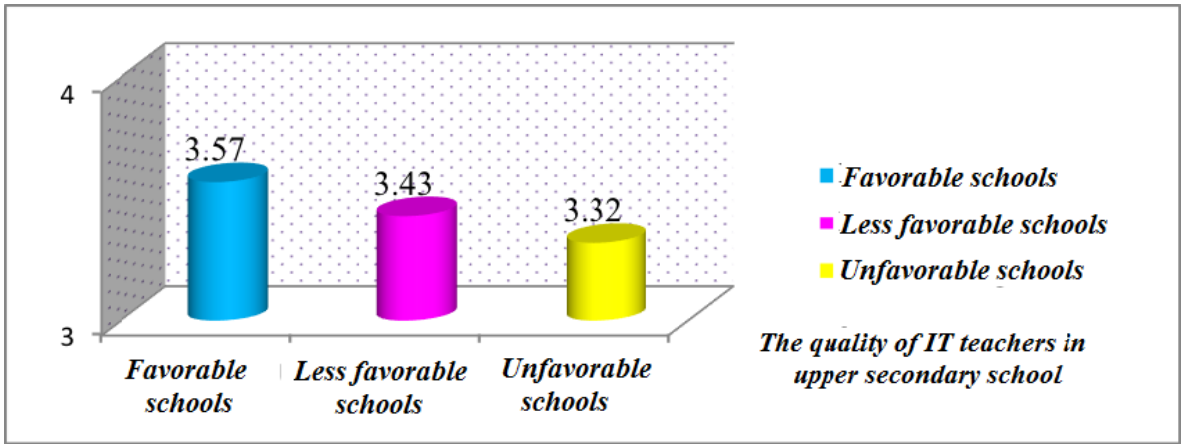

Chart 2.2. Comparing the quality of IT teachers of upper secondary school of 03 groups of schools in the Red River delta provinces

(3) According to the survey site structure

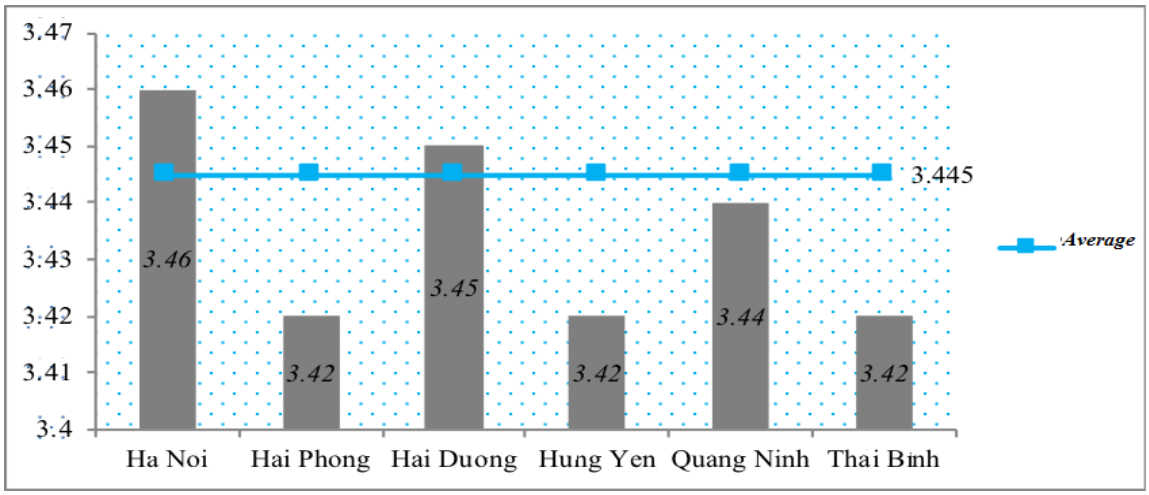

Chart 2.3. Comparing the quality of teachers in upper secondary school among the provinces in the Red River delta

2.4. The real situation of IT management in upper secondary schools in the Red River Delta by approaching competence

(1) According to survey content

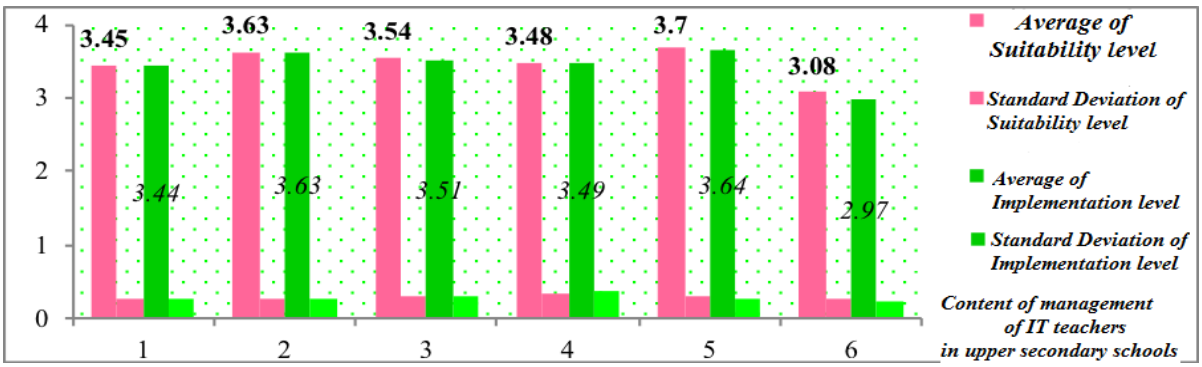

Chart 2.4. The real situation of management of IT teachers in upper secondary schools in the Red River delta in the competence approach

(2) According to the structure of the survey group

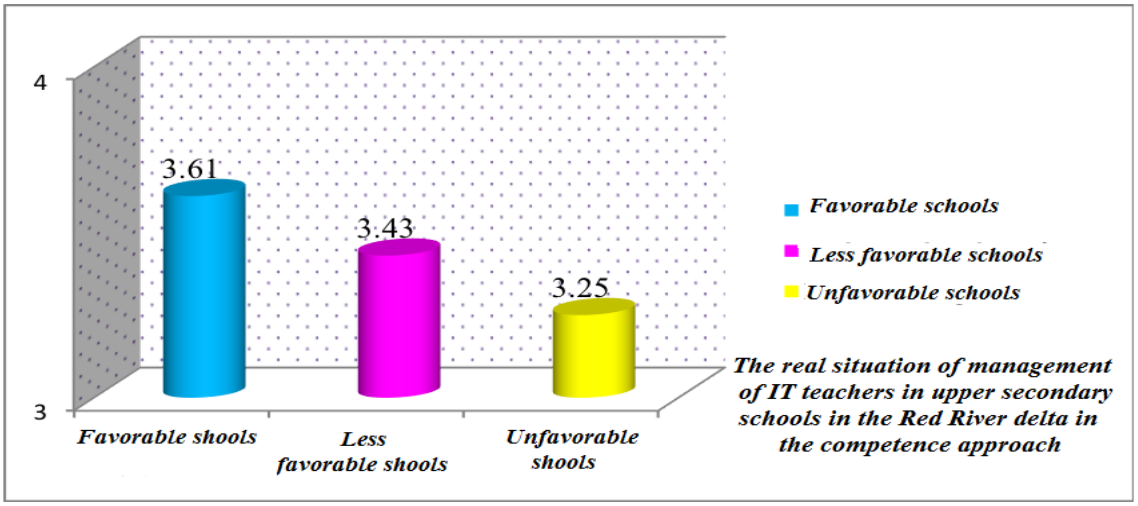

Chart 2.5. Comparing the real situation of management of IT teachers among three groups of upper secondary schools by competence approach in the Red River Delta

(3) According to the survey site structure

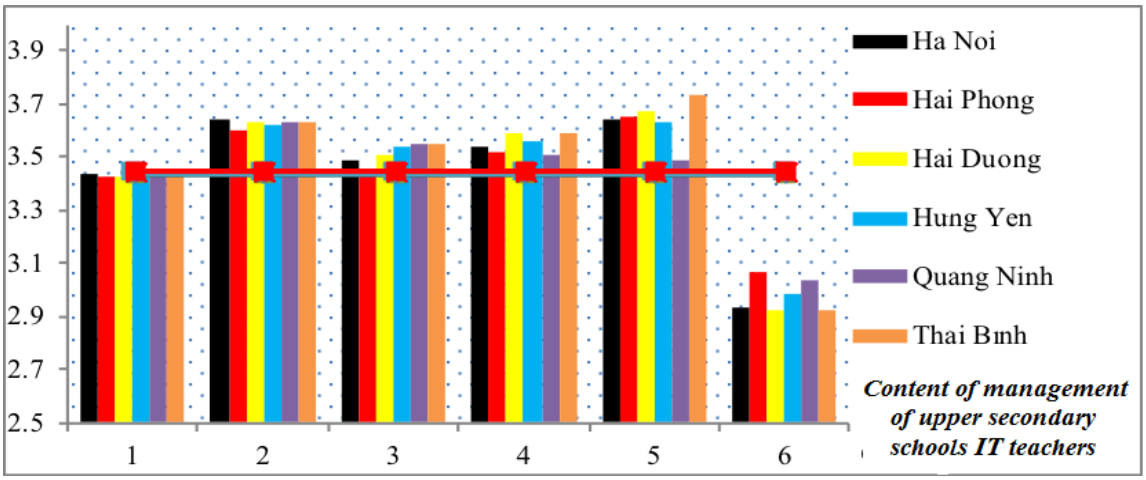

Chart 2.6. Comparison of the real situation of management of upper secondary school teachers in 06 Red River delta provinces

2.5. The real situation of decentralization in the management of IT teachers of upper secondary schools in the Red River Delta provinces

Analysis of Table 2.33 shows that localities in the Red River Delta currently have a decentralized management of upper secondary school IT teachers with a grade point average reached Mean = 3.53; SD = 0.257 and the score on the performance level reached Mean = 3.65; = 0.294.

However, the results from the management practice also showed that the staff of the trainers and the practice teachers did not appreciate the appropriateness and rationality in assigning the rights, responsibilities and tasks in management of the practice teachers. At all levels of management/autonomy and self-responsibility of DOET, the results of implementing this decentralization are just average (Mean = 3.43, SD = 0.586 and Mean = 3.54, SD = 0.621).

2.6. The real situation of factors influencing the management of IT teachers in upper secondary schools in the Red River Delta provinces by approaching competence

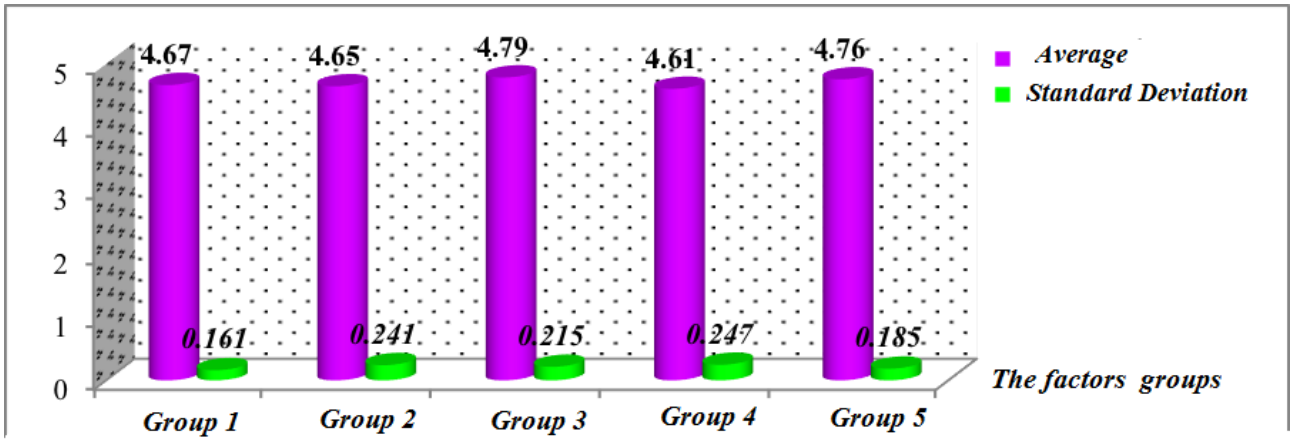

Chart 2.7. The real situation of factors influencing the management of IT teachers of upper secondary schools in the Red River delta

The two factors that have the highest impact on this situation are the system of classrooms, computer rooms to meet the demand for informatics in schools and the ability to encourage and motivate the working environment. Teachers with a score of Mean = 4.81; SD = 0.390 and Mean = 4.85; SD = 0.390.

In particular, the development of social networking sites, school websites and the spirit of solidarity and mutual support of all teachers in the school are considered to be the two most influential factors. Management of upper secondary school IT teachers in the Red River delta provinces (Mean = 4.57, SD = 0.496 and Mean = 4.53, SD = 0.499).

2.7. General assessment and SWOT analysis of current status of management of IT teachers in upper secondary schools in the Red River Delta provinces by approaching competence

SWOT analysing to identify the strengths, weaknesses, and opportunities and challenges in the management of IT teachers upper secondary schools in the Red River Delta under competency approach.

Conclusion Chapter 2

Chapter 3
MANAGEMENT SOLUTIONS OF INFORMATION TECHNOLOGY TEACHERS OF UPPER SECONDARY SCHOOL UNDER THE COMPETENCY APPROACH
(In the Red River delta provinces)

3.1. Development orientation of IT teachers in upper secondary school and the principle of proposing management measures

- *Principles of inheritance and development*
- *Principles of ensuring effectiveness and feasibility*
- *Principle of ensuring the relationship between objectives, issues and measures*

3.2. Proposing measures to manage upper secondary school IT teachers under competency approach

The thesis proposes 05 measures to manage upper secondary school IT teachers under competency approach, include:

Measure 1. Accomplish a competence framework and professional qualities of upper secondary school IT teachers

Accomplishing the competence and professional qualification framework of upper secondary school IT teachers in order to create the basis for planning, recruiting teachers and supervising professional activities of IT teachers in upper secondary schools. Competency framework is also an important basis for the training, fostering and development of upper secondary schools IT teachers.

Measure 2. Build a development plan for the improvement of upper secondary school IT teachers under the competency approach

Build a development plan for the improvement of upper secondary school IT teachers under the competency approach aim to ensure sufficient quantity and structural appropriateness under the Job Placement Scheme. This is one of the first measures needed to develop teachers in general and the IT teachers in particular.

Measure 3. Organize training and fostering of upper secondary school IT teachers under the competency approach

Organize training and fostering of upper secondary school IT teachers under the competency approach to building up the upper secondary schools' teachers become those who are enthusiastic and competence of using the knowledge of IT, professional and practical experience to have a reliable and appropriate treatment in different situations (learner and context) for the benefit of learners and professional ethics.

Measure 4. Turn the core IT teachers network become IT and communication experts of the Department of Education and Training

Building up the core staff of the Department of Education and Training to develop the staff of IT to become an experts network of IT and communication of each school and each Department of Education and Training. This network of experts is responsible for advising the Department of Education and Training on IT and communication application for each school, every level of education and the education sector in the locality.

Measure 5. Create a professional environment and motivate for upper secondary school IT teachers

For upper secondary school, creating motivation and working environment for IT teachers goal to attract talented people, good IT experts to promote their talents. Highly qualified teachers will create favourable conditions for them to work and contribute to the building of the IT teachers of upper secondary schools will strengthen, push up the process of applying IT in teaching and school management.

3.3. Relationship between the measures

3.4. Investigate the urgency and feasibility of measures

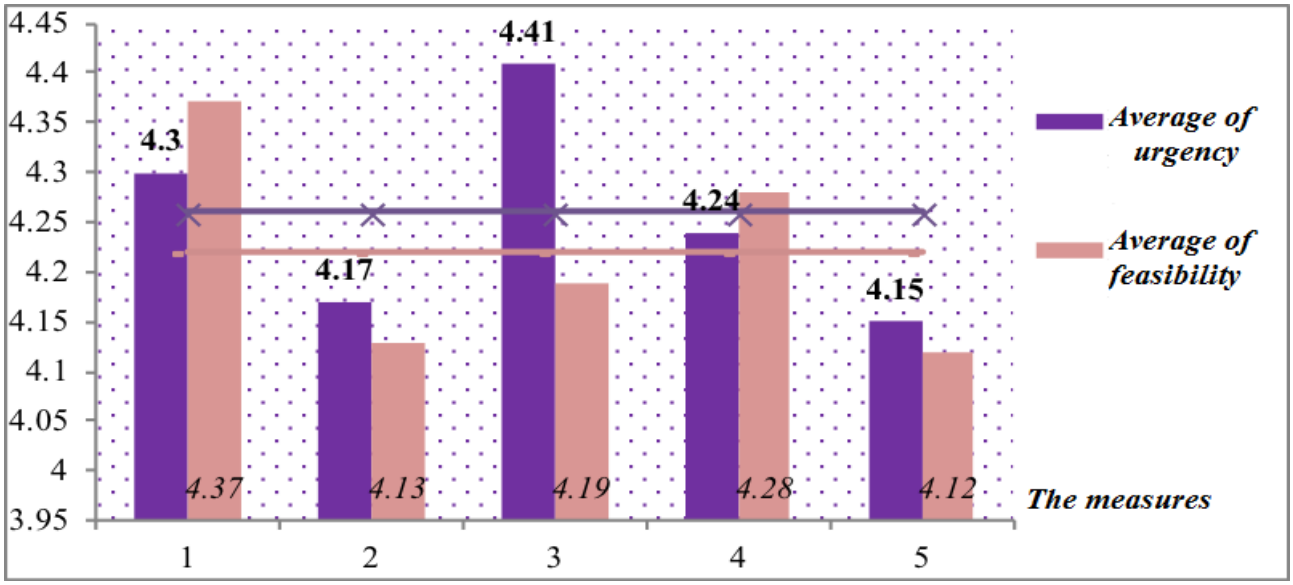

Figure 3.1. The correlation between urgency and the feasibility of measures to manage upper secondary school IT teachers by competence approach

The results show that management measures of upper secondary school IT teachers in terms of competence approach were assessed by managers as critical (Mean = 4.26, SD = 0.318).

Regarding feasibility, measures to manage the contingent of upper secondary school teachers in the competence-based approach were evaluated with very high scores, indicating the agreement of the majority of the managers on the feasibility of the five measures (Mean = 4.22; SD = 0.297).

3.5. Experimental measures of IT teachers management in upper secondary school according to competence approach

Name of the experimental measure: ***Implement training and fostering to improve the IT teacher group quality under the competency approach***.

- *Experimental organization:* empirical purpose, empirical hypothesis, experimental model and area

- *Experimental content*

(1) Design and make movie with ADOBE AFTER EFFECTS CS4

(2) Fostering the management, editing and updating of articles on e-portal in education and training

(3) Software training S-office electronic office two-way education

- *Experimental results*

(1) Results of fostering IT application in teaching, education and management of upper secondary schools in the Department of Education and Training;

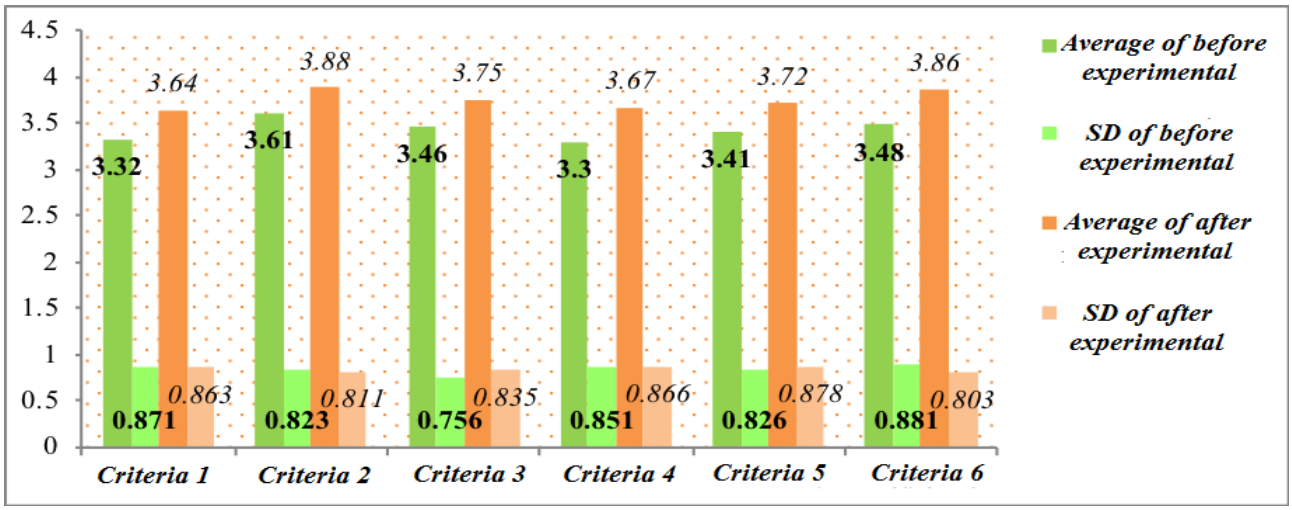

Figure 3.2. Comparing the results of teachers about fostering programs before and after experimental measures

(2) Results of the change after the implementation of IT in teaching, education and management of upper secondary schools according to the curriculum of the Department of Education and Training.

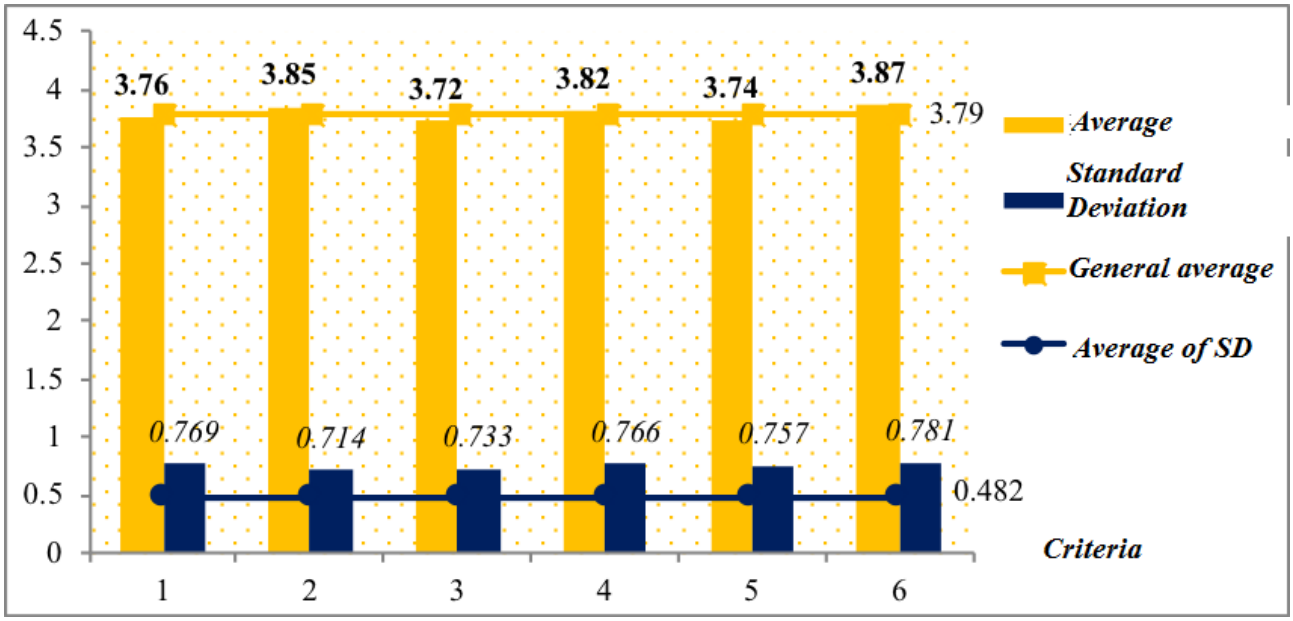

Figure 3.3. The change in the implementation of IT in teaching, education and management of upper secondary schools under the program of training after experimental of the Department of Education and Training

- *Experimental conclusion*

Management measures put into practice: ***Implement training and fostering to improve the IT teacher group quality under the competency approach*** is highly effective in improving the quality of the practice teachers of upper secondary schools in the Red River delta provinces. Thus, the empirical hypothesis has been proved and this result also contributes to the assertion of the correctness, appropriateness and feasibility of the empirical method.

Conclusion Chapter 3

CONCLUSIONS AND RECOMMENDATIONS

1. CONCLUSIONS

1.1. On the basis of approaching and concretizing some viewpoints, the content of human resource management theory in building the theoretical foundation for managing IT teachers under the competency approach; The thesis has identified the management of IT teachers in upper secondary school under competency approach is the process of impact development of professional competence for teachers through the development of system of planning measures, recruitment, using and training, re-training, evaluating, creating an enabling environment for improving the quality of IT teachers and

exploiting the role of IT professionals in this field in order to innovate teaching, education and educational management upper secondary school.

Management of upper secondary school IT teachers in the direction of professional development includes 6 contents: (1) Developing master plan/development plan for IT teachers; (2) Recruitment of upper secondary school IT teachers in the competency framework; (3) Using and screening upper secondary school IT teachers in the competency framework; (4) Organizing training activities for upper secondary school IT teachers; (5) Examining and evaluating upper secondary school IT teachers according to the competency framework; (6) Creating a working environment, motivating for teachers of upper secondary school IT teachers.

The factors influencing the management of upper secondary school IT teachers meet the requirements of the reform of general education belongs to groups (1) The rapid development of science, technology, information; (2) Management mechanisms and policies of the State and the education and training sector; (3) Actual teaching conditions at school; (4) Pedagogical environment and (5) Competence of educational managers.

1.2. Survey results on 923 subjects were 579 teachers and 344 managers of 163 upper secondary schools in 06 Red River Delta provinces is presented in 35 tables and 7 graphs showing the practical picture of managing upper secondary school IT teachers in the Red River Delta and factors affecting this management.

Upper secondary school IT teachers are basically quantitative; The structure of age is quite young, especially the structure according to the development competence is unbalanced. *Competence to use teaching equipment and adjustment of teaching materials* and *Competence to prepare lesson plans (design lesson) and preparation for each lesson* of upper secondary school IT teachers in the Red River Delta are quite appreciated. However, *The ability to foster IT professionalism for managers, lecturers* and *The organizational competence to implement the lessons* have not been paid much attention and reflected well, affecting the IT application in teaching and educational management in the innovation context.

In the management of upper secondary school IT teachers in the Red River delta, *Recruitment of teachers in the competency framework and examination* and *Evaluation of upper secondary school IT teachers according to the competency framework* are the best implementation results but *Creating the working environment, motivating for the teachers of upper secondary school teachers* is the worst results.

Management of IT teachers in upper secondary schools in the Red River Delta is almost affected by *The system of classrooms, computer rooms to meet the demand for informatics in schools and the ability to encourage* and *The ability to encourage, creating a favorable working environment for teachers*.

1.3. Based on the theory of Chapter 1 and the practical basis from Chapter 2, the thesis proposes 05 measures to manage upper secondary school IT teachers by the competency approach: Measure 1: Accomplish a competence framework and professional qualities of upper secondary school IT teachers; Measure 2: Build a development plan for the improvement of upper secondary school IT teachers under the competency approach; Measure 3: Organize training and fostering of upper secondary school IT teachers under the competency approach; Measure 4: Turn the core IT teachers network become IT and communication experts of the Department of Education and Training; Measure 5: Create a professional environment and motivate for upper secondary school IT teachers.

The opinion polls results of subjects related to the management of IT teachers of upper secondary schools in the Red River delta confirmed that the measures are urgent and feasible.

The experimental results to confirm the measure *Organize training and fostering of upper secondary school IT teachers under the competency approach* of 06 Red River Delta provinces has been proposed positively and can be implemented in practice.

Thus, the research tasks have been completed, the scientific hypothesis has been proved.

2. RECOMMENDATIONS

On the basis of the proposed management measures, in order to effectively implement the management measures of upper secondary school IT teachers under competency approach, the thesis has some recommendations:

2.1. For the Ministry of Education and Training

- Coordinating with the concerned ministries and branches in order to implement effectively of the recruitment and use IT teachers in each locality.

- To intensify the expansion and development of a large-scale pedagogical college system, multi-level and multi-disciplinary universities to train IT experts to provide enough IT teachers for upper secondary schools.

- To increase the development investment capital for the provincial

Education and Training Departments so as to enhance the material foundations and ensure the efficient use of equipment in upper secondary schools.

- To promulgate the framework of upper secondary school IT teachers to manage and support training establishments in recruiting and training IT professors from the qualification level to the IT and communication experts.

- To build a national data center on the subject of information technology so that IT teachers can have favorable conditions to find references and improve their professional qualifications and pedagogical skills.

- Regularly open training courses, re-training IT teachers to help schools have professional teachers, high level, strongly experienced in order to meet the requirements of innovation context and aim to encourage IT application in teaching and education management today.

2.2. For the People's Committees of the Red river delta

- It is necessary to increase investment in budget and equipment for IT, especially investment in equipment, network and infrastructure for local educational institutions.

- To develop the upper secondary school IT teachers, to increase the staffing norms for senior upper secondary school IT teachers so that the schools can fulfill the assigned tasks assigned by the superiors.

- Organizing learning theories, improving the management competence of IT teachers at the provincial Education and Training Departments to learn experiences, exchanges and seminars to improve the quality of training at home and abroad.

- Having policies to invest funds for target programs, adopt preferential policies and prescribe titles for IT experts at departmental level, key IT teachers... Encourage and reward in time deserved.

2.3. For the Department of Education and Training

- Positively suggest that the provincial People's Committee supplement funding to support general education establishments in applying IT in teaching and educational management.

- Regularly organize the provincial contest of good IT teachers. Organization of typical reporting conferences, dissemination of experience in the IT field.

- Implement well the proposed measures.

2.4. For upper secondary schools

- Principals of upper secondary schools need to raise awareness about the

roles and tasks of IT teachers for all teachers in schools and IT applying; Especially the role of IT experts in local education institutions.

- To formulate and implement annual plans on training and fostering of the upper secondary school's IT teachers, especially young IT teachers who do not have training in pedagogic schools and have no professional knowledge in pedagogy…

- Organizing IT teachers to have opportunities to exchange, learn, access to research works, experience and exchange information with upper secondary school IT teachers at local.

- To form a group of IT experts in general and other subjects in particular, including nuclear IT teachers and core IT teachers of each subject, to support and promote the professional competence of the whole school's staff, active in innovative teaching methods.

LIST OF PUBLISHED SCIENTIFIC STUDY OF THE AUTHOR RELATED TO DISSERTATION

1. Nguyen Kim Hoang (2017), “Trends of managing the IT teachers of upper secondary school under the competence-based approach”, *Educational Equipment Magazine*, (No.139), p.65-68.
2. Nguyen Kim Hoang (2017), “The real situation of managing the IT teachers of upper secondary school in Hai Phong city”, *Journal of Educational Sciences*, (No. 145), p. 95-98.
3. Nguyen Kim Hoang (2018), “Management solutions of information technology teachers of upper secondary schools under the competency approach” *Journal of Educational Sciences*, (No. 162), Second term, January.