MINISTRY OF EDUCATION AND TRAINING
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TRAINING MANAGEMENT ACCORDING TO THE OUTPUT STANDARD OF THE VOCATIONAL COLLEGES UNDER MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

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SCIENTIFIC WORKS OF PhD CADIDATE ANOUNCED RELATED TO THE DOCTORAL THESIS CONTENT

1. Nguyen Xuan Thuy (2013), The outcome standards of the vocational training institutions and training issues to meet social needs, ***Educational magazine***, number 311, period 1, June 2013 (page 3 - 5).
2. Nguyen Xuan Thuy (2014), *Viewpoints and innovation management methods of teaching methods at the Colleges*, ***Educational magazine***, number 346, Period 2, November 2014 (page 10,11).
3. Nguyen Xuan Thuy (2016), Management solutions according to the outcome standards at Vocational College of Agricultural Mechanics, ***Educational magazine,*** special number, November 2016 (page 68 to 70).
4. Nguyen Xuan Thuy (2016), improving teaching capability for lecturers to meet training requirement according to outcome standards at the colleges, ***Educational magazine***, special number, November 2016 (pages 71, 72, 99).

INTRODUCTION

1. REASONS FOR CHOOSING TOPIC

The current human resource training requirements of the training institutions are "On the basis of the objectives of education and training reform, the objectives and standards of each educational level should be clearly defined, the Output Standard (OS) of subjects, programs, majors. It is a commitment to ensure the quality of both the system and each institution; the basis for monitoring and evaluating the quality of education and training". This means that it is important to define the output of each professional discipline in terms of professional knowledge, practical skills, cognitive ability and problem solving that the learners have after graduation and other specific requirements for each level, each discipline and training before training is launched to make it possible for the learner to attain. However, training according to the OS in the field of vocational training in general and vocational colleges in the Ministry of Agriculture and Rural Development (MARD) in particular has not yet had a standard theory system. It is impossible to see all the difficulties and inadequacies in the real situation of training and management training so that there are feasible management solutions to improve the quality of human resource training to meet the requirements of the socio-economic development in the current period.

For the main reasons mentioned above, I chose the topic of "Training management according to the output standards of vocational colleges under the Ministry of Agriculture and Rural Development" as a research topic.

2. PURPOSE OF THE STUDY

Establish a theoretical basis, assess the status of training and training management according to the OS of the colleges under the MARD; from that, I propose some training management solutions according to the OS of the colleges in order to improve the quality of human resource training to meet the country's socio-economic development requirements in the current period.

3. OBJECT AND SUBJECT OF RESEARCH

3.1. Object of study

Training and training management according to the OS in the vocational colleges.

3.2. Subject of study

Training management solutions according to the OS of the vocational colleges under the MARD.

4. SCIENTIFIC THEORIES

Training according to the OS of the colleges under the MARD is now limited due to difficulties and inadequacies in the current situation of training and training management. If those colleges implement some management solutions to the elements of the training process according to the OS, they are identified on the basis of the combination of educational theories and the CIPO model of human resources training. Remove difficulties and overcome shortcomings in the current situation of training and training management; the quality of human resources training of these colleges will meet the requirements of socio-economic development of the country in the current period.

5. TASKS OF STUDY

- Establish theoretical basis for training management according to the OS at the vocational colleges.

- Survey and assess the status of training according to the OS and the status of training management according to the OS at the colleges under the MARD.

- Propose the training management solutions according to the OS of the colleges under the MARD in order to improve the quality of human resource training to meet the requirements of socio-economic development in the current period; at the same time to check and test some proposed solutions to prove the scientific hypothesis of the thesis.

6. LIMITED SCOPE OF STUDY

- The topic of research on training management according to the OS on the high level of the vocational colleges under the MARD based on the available OS.

- The college under MARD selected to investigate the current status of the research are several colleges representing three northern, central and southern regions.

7. METHODOLOGY

7.1. Approaches

- Research on this topic has been standard approach, market approach, integrating approach between education-based training process and the CIPO model, between the system approach and historical- logic approach.

7.2. The main methods used in research

Use methods of synthesis, analysis, comparison, generalization, concretization to establish the theoretical basis of the research problem; use observation methods, surveys, experts (comments by questionnaires, observations, interviews), summing up experiences, math statistics, assay and test the scientific proposals to assess the realities of the research problem and prove the scientific hypothesis.

8. NEW CONTRIBUTIONS OF THEMES

8.1. In term of theory

Establish the theoretical foundation for training management according to the OS at the vocational colleges on the basis of combining educational theory with the CIPO model of human resource training.

8.2. In term of practice

Evaluate the status of training according to the OS and training management according to the OS at the colleges under the MARD; propose the feasible training management solutions of the colleges under the MARD to improve the quality of training according to the OS of those colleges.

9. PRINCIPLES OF PROTECTION

1) Training according to the current OS is an urgent requirement for human resource training institutions. Integrating education theory with the CIPO model of human resource training, the training according to the OS of the vocational colleges has the following main activities: adjusting, supplementing and announcing the OS before each training; program development; admissions; faculty teaching; student learning; assurance of facilities & training equipment; promote and limit the impact of the training environment; evaluate the training results; renovate the training after each training course. As such, the training management according to the OS at the vocational colleges must manage the core activities.

2) The results of the assessment of the status of training according to the OS and the training management according to the OS at the vocational colleges under the MARD show that the main causes of the shortcomings are due to difficulties and inadequacies in training and training management in the activities: supplement and finalize the output standards, develop training programs, teaching capacity of teachers, facilities and material conditions for training and evaluation of training results and management capacity of management staff at all levels of the vocational colleges.

3) Training management solutions according to the OS at the vocational colleges under the MARD were proposed on the basis of the theory of training management according to the OS, the basis of training and training management according to the OS to remove difficulties, overcome the shortcomings in the status of training and training management mentioned above. The results of assaying and testing of training management solutions according to the OS have been proposed in the thesis confirming the necessity and feasibility of such solutions and also illustrate the scientific hypothesis of the thesis.

10. STRUCTURE OF THE THESIS

Besides the introduction, conclusion and recommendation, the list of scientific works of the author, a list of references; the list of tables, charts, diagrams; annexes. This thesis consists of three chapters as layout below:

- **Chapter 1.** Rationale for training management according to the OS of the VCs
- **Chapter 2.** Practical basis for training management according to the OS of the VCs under the MARD.
- **Chapter 3.** Training management solutions according to the OS of the VCs under the MARD.

Chapter 1
RATIONALE FOR TRAINING MANAGEMENT ACCORDING TO THE OS OF VCs

1.1. OVERVIEW OF RESEARCH ISSUES

In general, typical scientific works (books, scientific papers, research topics, doctoral thesis) of foreign and domestic authors have focused on fundamental issues of the most general management, educational management, school management and social demand-oriented training management that are approached from the training management aspects of performance or training management according to the OS. These scientific studies have clearly demonstrated the importance and requirements of the OS on the content of professional knowledge, practical skills, cognitive ability and problem solving skills that learners must take after graduation and other specific requirements for each level, each discipline, training major. The process and method of organizing a training course according to the OS. However, at present, there are not many researches on the training management according to the OS at the vocational colleges in general and at the vocational colleges under the MARD in particular. It also means that this dissertation should focus on research on theory, practice and training management solutions according to the OS of the vocational colleges under MARD.

1.2. SOME BASIC CONCEPTS

1.2.1. Vocational colleges

The College is a vocational education institution with the function of training human resources directly for production, business and service having

practicing capacity corresponding to the training level; having morals, health; having professional responsibility; be capable of creating and adapting to the working environment in the international integration context; to ensure the raising of labor productivity and quality; facilitate learners to complete the course after they have completed the course. They are able to find a job, create their own jobs or study at a higher level.

1.2.2. The OS of the major

- The output standard in the training major is the regulation on the content of professional knowledge; practical skills, cognitive ability and problem solving; the work that learners can take after graduation and other specific requirements for each level, each training discipline.

- The main contents of the OS include: name of training major; training level; knowledge requirements; skill requirement; attitudes requirement; working position of the students after graduation; ability to study, improve the level after graduation; the programs, documents, international standards that the college reference.

- Basic requirements of the OS of training major: to meet the social demand for human resource training; It is clearly reflected in the training objective; ensure the direction to set up curricula, content, curriculum and materials; must be the basis for selection of training methods and forms; associated with requirements on equipment, use of facilities and training equipment; adapt to training environment requirements; It must be the basis for defining criteria for assessing the quality of training as well as the basis for reviewing, adjusting and supplementing the ICRC and the training program.

1.2.3. Training, training according to the OS

- Training is a process of purposeful and organized activities of training subjects in order to form and develop a system of knowledge, skills and attitudes so that people can be trained and master the knowledge, career skills to find a job and work effectively.

- Training according to the OS is a process of purposeful and organized operation of training subjects in order to form and develop systematically for learners with knowledge contents, practical skills and abilities. The ability to recognize technology and solve problems in the work that learners can take after graduation and other specific requirements for each level, each training disciplines.

1.2.4. Management, school management, training management, training management standards

a) **The management** of an organization (or system) is a purposeful and planned impact of the management entity (manager of the organization) to the objects of manager (the managed in the organization). To effectively mobilize and coordinate all resources of the organization (human, financial and physical) to achieve the organization's stated goals in an ever-changing environment.

Management has the basic functions of a management cycle that is planning, organizing, directing and controlling.

b, College management is the intended and planned impact of the college's administration (principal) on the objects of management (faculty members, teachers, staff, learners, and educational forces). To reach the college's educational goals in an ever-changing environment.

c, Training management is the intended purpose, planned impact of the management entity in a school-based training facility to the management entity to effectively mobilize and coordinate all resources of training facilities to achieve the intended training goals in an ever-changing environment (systematic formation and development of knowledge, skills, attitudes, etc.) for the trained person to understand and master the knowledge, career skills to find a job and work effectively).

d, **Training management according to the OS** is the purposeful impact of the management entity to the objects of management in order to efficiently mobilize and coordinate all resources to achieve the training objectives in line with the defined OS.

1.3. ROLE, MEANING AND BASIC REQUIREMENTS FOR TRAINING ACCCORDING TO THE OS IN THE CONTEXT OF CURRENT SOCIAL-ECONOMIC DEVELOPMENT

1.3.1. The role and meaning of the training in the according to the OS in current social-economic development

Training according to the OS has the effect and value of standardizing the human resources required by agencies, organizations and enterprises in the current socio-economic development context on the local, national and international levels.

1.3.2. The training requirements according to the OS

Training according to the OS must meet the requirements:

- Training objectives must be agreed with the OS before the training course is launched;
- The training program must be developed in association with the OS;

- Teachers 'teaching must be towards the development of students' capacities according to the OS;
- Student's learning must aim to reach the OS;
- Facilities and training equipment must meet the requirements of teaching and learning;
- The impact of the training environment must be promoted and minimized;
- Evaluation of the training results must be in line with the requirements of the OS;
- Training must be renewed after a training course according to the OS.

1.4. MAJOR ACTIVITIES IN TRAINING ACCORDING TO THE OS IN VC

Considering the elements of the training process (according to educational theory) with the elements of the CIPO model on human resource training, it was found that despite the different approaches, training according to the OS has the main activities:

- Adjust, supplement and announce the enterprise;
- Development of training programs according to the OS;
- Admissions;
- Teachers' teaching;
- Students' learning;
- Ensure facilities and training equipment;
- Promote and limit the impact of the environment;
- Evaluate the training results;
- Renovate of training activities after each training.

Each activity in the training process, there are 8 specific activities of the subjects. The specific training activities are the contents that need to be surveyed in order to identify the training status according to the OS.

1.5. TRAINING MANAGEMENT ACCORDING TO THE OS IN VC

From the identification of the main activities in the training according to the OS, it is shown that the training management according to the OS is to manage the core activities. Specific:

- Manage the activities of adjusting and supplementing and publishing the OS.
- Manage the activities of developing the training programs.
- Manage the admission activities.
- Manage the teaching activity of teachers.
- Manage the learning activity of students.
- Manage the activities that ensure facilities and equipment training.

- Manage the activities that promote and limit the impact of the environment.
- Manage the assessment of training results.
- Manage the renovation post-training activities.

In each of these management activities, there are 9 specific activities of school-based management entity impacting on the lower-level managers, other education forces inside and outside the school. Specific management activities are the contents that need to be surveyed in order to identify the status of training management according to the OS.

1.6. FACTORS AFFECTING TO TRAINING MANAGEMENT ACCORDING TO THE OS IN VOCATIONAL COLLEGES

- *Objective factors:* Current socio-economic development context; The Party's leadership lines, the laws and policies of the State on the development of vocational education; Involvement of agencies, organizations and enterprises in training.
- *Subjective factors:* Teaching capacity of teachers; The level of mobilization and financial investment, material facilities and training equipment; Management capacity of managers at all levels in training institutions.

Chapter 2
THE PRACTICAL FOUNDATION OF THE TRAINING MANAGEMENT ACCORDING TO THE OS OF THE VC UNDER MARD

2.1. EXPERIENCES OF VOCATIONAL TRAINING MANAGEMENT ACCORDING TO THE OS OF SOME COUNTRIES IN THE WORLD AND VIETNAM

2.1.1. Experiences of some countries in the world and the lesson for Vietnam.

From the analyzes of experience in human resource training according to the OS of some countries in the region and in the world such as Malaysia Federation; The Republic of the Philippines; The Kingdom of Japan; The Federation of Australia; The Republic of Germany; The United Kingdom and the United States of America; It is possible to draw some lessons learned in vocational training in Vietnam:

- In order to meet the human resource requirements of socio-economic development of the country, the vocational education institutions in general and the vocational colleges in particular must shift from traditional training to training according to the OS.

- The OS of each training major is the basis for implementing training activities and managing such training activities on: supplement and finalization the OS before training course; develop training programs; admissions; faculty teaching; study of students, ensure facilities & training equipment; promote and limit the impact of the training environment; evaluate the training results and renovate the training activities after each training.

2.1.2. Experience of training management according to the OS of some VCs under the MARD

Currently, the General Department of Vocational Training administers 171 vocational colleges, 301 vocational colleges and 1009 vocational training centers. The MARD manages 19 vocational colleges and 20 vocational schools. By observing, interviewing, researching the process and the training results, it was found that the vocational colleges under the MARD had some experience in training management according to the OS as follows:

- The OS of each major is the basis for defining goals and developing training programs;

- Defining the OS in training must first examine the social needs of human resource training in order to identify the required knowledge, skills and attitudes of each profession to be trained;

- The objectives of each subjects/ module in the detailed program must be concretized on the basis of the OS of the training profession;

- It is necessary to improve the capacity of the teachers in teaching the orientation of developing students' capacity to meet the requirements of the OS.

- The training facilities and conditions must be well ensured (facilities & training equipment, training environment);

- It is necessary to fundamentally renovate the way of examining and evaluating the training results in order to demonstrate the level of attaining the intellectual property; at the same time there must be innovative activities, renew training after each training.

2.2. INTRODUCTION ON SURVEY OF TRAINING STATUS AND TRAINING MANAGEMENT ACCORDING TO THE OS OF THE VCs UNDER THE MARD

2.2.1. For surveying of the training status according to the OS

a) Purpose: To assess the status of training activities according to the OS at the VC under MARD.

b) Survey content: Survey of 9 training activities according to the OS at the VC under MARD.

c) Method: Use questionnaire survey method; In that, draft the questionnaire according to the contents of the survey. In each questionnaire of each content , each questionnaire consisted of the following levels: good (4 points), quite good (3 points), medium (2 points) and bad (1 point) to ask for the opinions of the selected people.

The tool for data processing is the use of mathematical statistical methods to calculate weighted mean that's the formula: $\overline{x}_j = \frac{\sum_{i=1}^{n} f_i x_i}{\sum_{i=1}^{n} f_i}$; Of which: Good is 3,25 to 4,0; Quite good 2,.75 to 3,25; medium 1,75 to less than 2,75; bad is less than 1,75.

d) Subjects to be consulted: It is expected that the total number of people selected for questionnaire by questionnaire will be 285, including: Managers and lecturers of the VCs under the MARD; managers of some institutions, organizations and enterprises employing the graduated; the graduated students of the colleges are working in agencies, organizations and businesses; managers of the host agencies.

2.2.2. For surveying the training management status according to the OS

a) Purpose: To assess the actual status of the training management activities according to the OS at the VCs under MARD.

b) Survey content: A survey on the level of management on 9 training activities according to the OS at the VCs under MARD and the impact of the factors that affect the trainng management according to the OS (mentioned in the chapter 1st).

c) Methodology: Similar to the survey on the status of training activities according to the OS of the VCs under MARD.

d) Subjects asked for comments: It is expected to ask 200 people like the selected subjects to survey the training status according to the OS, but except for 85 lecturers.

2.3. THE TRAINING STATUS, ACCORDING TO THE OUTPUT STANDARD IN VOCATIONAL COLLEGES OF THE MARD

Handle 275 papers of questionnaires (in 285 ones) answered all the questions, indicating the status of 9 activities in the training process according to the OS as follows:

- No activity during the training process was assessed at a weak level; but no activity has been rated well.

- The activities in the training process are assessed at a quite good level:

+ Enrollment, with $\overline{X}$ = 3,01 (table 2.3 in the original one);

+ Study of students, with $\overline{X}$ = 3,06 (table 2.5 in the original);

+ Promote and limit the impact of the training environment, with $\overline{X}$ = 2,76 (table 2.7 in the original one).

- The activities in the training process are assessed at an average level:

+ Adjust, add and publish the output standard, with $\overline{X}$ = 2,72 (table 2.1 in the original one);

+ Develop the training programs, with $\overline{X}$ = 2,74 (table 2.2 in the original one);

+ Teaching of teachers during training, with $\overline{X}$ = 2,7 (table 2.4 in the original one);

+ Make sure facilities & training equipment, with $\overline{X}$ = 2,74 (table 2.6 in the original one);

+ Evaluate the training results, with $\overline{X}$ = 2,73 (table 2.8 in the original one);

+ Renew the training activities after each training, with $\overline{X}$ = 2,68 (table 2.9 in the original one).

2.4. THE STATUS OF THE TRAINING MANAGEMENT ACCORDING TO THE OS OF THE VCs UNDER THE MARD

Handle 185 papers of questionnaires (in 200 ones) were answered all the questions, showing the status of 9 training management activities according to the OS as follows:

- No management activity was assessed at a weak level; but no management activity has been rated well.

- Management activities are assessed at a quite good level:

+ Manage the enrollment, with $\overline{X}$ = 3,10 (table 2.12 in the original one);

+ Manage student's learning activities, with $\overline{X}$ = 3,00 (table 2.14 in the original one);

+ Manage the activities to promote and limit the impact of the training environment, with $\overline{X}$ = 2,76 (table 2.16 in the original one);

- Management activities are assessed at an average level:

+ Manage the adjustment, addition and publication the OS, with $\overline{X}$ = 2,74 (table 2.10 in the original one);

+ Manage the training program development, with $\overline{X}$ = 2,73 (table 2.11 in the original one);

+ Manage the teaching activities of teachers, with $\overline{X}$ = 2,69 (table 2.13 in the original one);

+ Manage the ensuring activities of facilities & training equipment, with $\overline{X}$ = 2,73 (table 2.14 in the original one);

+ Manage the performance evaluation, with $\overline{X}$ = 2,69 (table 2.17 in the original one);

+ Manage the training innovation activities after each training, with $\overline{X}$ = 2,68 (table 2.18 in the original one).

Thus, the management of activities is assessed at a quite good level, the training activities are also assessed to be quite good; the management of the training activities is evaluated at an average level, the training activities are also assessed on an average level.

The level of impact of the factors that affect to the management of training according to the OS is very high; but the factor "The management capacity according to the OS of the colleges'managers at all levels" has the highest impact with $\overline{X}$ = 3,51 (in the weighted average scale of 1 to 4).

2.5. GENERAL COMMENTS ON THE SITUATION OF THE TRAINING MANAGEMENT ACCORDING TO THE OUTPUT STANDARDS OF VOCATIONAL COLLEGES UNDER THE MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

2.5.1. These strengths and advantages and causes

a) The main strengths and advantages

Has implemented the enrollment activities, learning activities of students, activities to promote and limit the impact of the training environment at quite level; at the same time, managed fairly well for those activities.

b) The main reasons

There is a close and timely guidance of the vocational education institutions through the system of management documents on the training according to the OS; Some managers at the college level are aware of the significance of the training according to the OS, at the same time they have shown their responsibility for the policy; most of the educational forces inside and outside the colleges are aware of and are familiar with the training according to the OS.

2.5.2. These shortcomings, difficulties and causes

a) The shortcomings and basic difficulties

- Managing the activities of collecting comments from managers, scientists, lecturers, employers, businesses and alumni, etc to draft, adjust and supplement the OS is bad.

- Management of training activities is limited to the determination of objectives, orientation of contents, methods and forms of organization in the orientation of learner capacity development;

- Management of teaching activities of lecturers is limited in setting up plans for learning and teaching oriented learner capacity development (the necessary competencies are defined in the OS);

- Managing activities to ensure that facilities and training material (including material facilities, training equipment and training environment) are inadequate and timely and develop in the direction of standardization and to meet the training requirements according to the OS.

- The management of the activities of training evaluation and post-training activities is still limited. The training activities have not been implemented on the basis of the evaluated results on the training and training management.

- Management capacity of managers at all levels in schools is inadequate compared to the requirements of training management according to the OS while the management capacity of the staff at all levels of the colleges is the highest influence factors on the training management.

b) The main reasons

First, due to the management of vocational colleges to the adjustment and supplement the OS; *Secondly*, due to the management of vocational colleges to the complement the training program according to the OS; *Thirdly*, the management of vocational colleges for the activities of enhancing the teaching capacity of lecturers in orientation to the development the students' capacity in the training

according to the OS; *Fourthly*, due to the management of vocational colleges for the activities to ensure the means and conditions of training in the training according to the OS; *Fifthly*, due to the management of the colleges to the assessment of the training results and implement the post- training activities according to the OS; *Sixth*, due to the management of the colleges for the development of the management capacity of the management staff at the college level.

Chapter 3
SOLUTIONS TRAINING MANAGEMENT ACCORDING TO OS OF VC UNDER TO MARD

3.1. PRINCIPLES OF RECOMMENDING MANAGEMENT SOLUTIONS

The solutions for training management according to the OS of the VCs under the MARD are proposed in this thesis according to the following main principles: Adhering Party's leadership, State laws and policies, occupation regulations and by-laws; Ensuring scientific quality; Ensuring feasibility; Ensuring the logic; Ensuring system and consistency.

3.2. SOLUTIONS TO TRAINING MANAGEMENT ACCORDING TO OUTPUT STANDARD OF VOCATIONAL COLLEGES IN THE RECENT PERIOD

3.2.1. Mobilize the knowledge of scientists, college administrators and businesses to improve and supplement the OS before implementing the training.

a) Purpose and meaning: to mobilize educational forces inside and outside the college in adjusting, supplementing the OS; has the effect and updated value the changes from the social requirements for human resources to the identification of training objectives and the OS.

b) Content and implementation methods

Management entity of the VCs under the MARD affects subordinate management through the basic functions of management (planning, organization, steering and monitoring) to implement activities:

- Mobilize the intellectuals, administrators, lecturers, graduated students of the colleges and human resource management teams at agencies, organizations and enterprises to make comments and supplement the OS;

- Implementing and adjusting the OS in line with the new requirements on knowledge, skills and attitudes of the human resources that the colleges will train;

- Complete the OS for the new training course and announce the OS in accordance with regulations.

c) Conditions to be fulfilled: expand the relationship between the colleges and the employers, with the graduated students; selected the experienced people to add the OS and must have appropriate funds.

3.2.2. Holding training program development activities according to updated OS of the training major.

a) Purpose and meaning*:* to develop training programs in the intention of updating the OS; it is effective and valuable in that the training program closely targets the social demand for the usage of human resources.

b) Content and implementation methods

Management entity of the VCs under the MARD impacts on subordinate management through the basic functions of management to implement activities:

- Establish a committee of curriculum development according to the OS of the faculties in the college, with the duties and functions to complete the curricula (revised and supplemented) of the curriculum according to the OS.
- Deploy the development of training curricula according to the OS.
- Appraise, finalize and promulgate the training curricula prepared by faculties in the direction of updating the requirements of the revised OS.

c) Conditions for implementation

Select qualified and skilled staff to develop the training curricula; improve the counseling responsibility of the Colleges' Science and Training Committee; obtain appropriate funding for the development of the curricula.

3.2.3. Focus on refreshing training for teaching staffs in the orientation of developing students' capacity to meet the needs of the OS

a) Purpose and meaning: to improve the capacity of teaching in the direction of developing students' ability to meet the requirements of learning outcomes; it has the effect and value that make the products (students) reach the OS.

b) Content and implementation methods

Management entity of the VCs under the MARD impacts on subordinate managers through the basic functions of management to implement activities:

- Focus on training for teachers on the teaching capacity in the orientation of developing students' capacity to meet the needs of the OS.
- Organize self-refresh activities at the colleges for lecturers on the capacity of teaching in the orientation of developing students' capacity to meet the needs of the OS.

c) Conditions for implementation

The faculty management committee must have the capacity to manage the training activities and training activities in the colleges; mobilize a certain source of funds to spend on refresh training activities; the forces involved in the management of training and refresh training must be truly responsible.

3.2.4. Strengthen direct activities to ensure the means and material conditions for the training process according to the OS

a) Purpose and meaning: to ensure adequate, timely, standardized and modernized on the facilities & training equipment and have a favorable training environment; have the effect and value of creating the necessary facilities and necessary conditions for the training according to the OS.

b) Content and implementation methods

Management entity of the VCs under the MARD impacts on subordinate managers through the basic functions of management to implement activities:

- Mobilize the funds, equip the facilities & training equipment to meet the requirements of activities in the training process according to the OS.

- Organize activities to ensure a favorable environment for training according to the OS.

c) Conditions for implementation

The social sector involved in training and benefiting from the training results of the VCs under the MARD is responsible for investing in the facilities & training equipment, creating a favorable training environment.

3.2.5. Regularly direct the improvement of vocational training activities on the basis of the evaluation results of the satisfaction level meeting the OS of the training major.

a) Purpose and meaning: to regularly improve activities in the training process according to the OS; has the effect and accurate value of training quality compared to the OS, make training activities and training management activities always improved.

b) Content and implementation methods

Management entity of the VCs under the MARD impacts on subordinate managers through the basic functions of management to implement activities:

- Organize activities to evaluate the training results according to the requirements of the OS.

- Organize improvement of activities in the training process on the basis of the training results according to the OS.

c) Conditions for implementation

It is necessary to fully grasp the meaning of the training evaluation according to the OS; be responsible for participating in college accreditation and accreditation of training curriculas; mobilize resources for evaluating and innovating the training activities.

3.2.6. Organizing activities on fostering training management capabilities consistent with the OS for managers at different levels of the college

a) Purpose and meaning: to enhance the capacity of managers at all levels in the training management according to the OS; has value in the quality of all activities within the organization depends largely on the management of the managers staff.

b) Content and implementation methods

Management entity of the VCs under the MARD impacts on subordinate managers through the basic functions of management to implement activities:

- Identify the management capacities that need to be improved for the managers staff at all levels of the colleges.

- Implement the activities of sending school managers at all levels to attend intensive training courses at educational institutions with the function of fostering educational management staff.

- Organize self-improvement activities for managers staff at all levels.

c) Conditions for implementation

Proper management capacity must be identified by each manager after the training; appropriate funds must be mobilized to support training activities; the staff at all levels must be fully aware and responsible for the training and self-improvement.

3.3. RELATIONSHIP BETWEEN TRAINING MANAGEMENT SOLUTIONS ACCORDING TO THE OUTPUT STANDARD

Management solutions, which are supposed above have a close relationship, are feasibility prerequisites and backing of each other, supporting each other to form an integrated body in training management according to the OS in vocational colleges; the sixth solution, "Organize improving activities of management capacity according to the OS for managers staff at all levels of the colleges" is at the center (management understanding: determine the other activities) at the vocational colleges.

Diagram 3.1. Relationship of management solutions

3.4. EXPERIMENTING NECESSARY LEVEL AND FEASIBILITY OF MANAGEMENT SOLUTIONS

3.4.1. Introduction about process of holding experiment

a) Purposes of the experiment: understand the necessity and feasibility of each solution and system of management solutions proposed

b) Contents of the experiment: Experiment necessary level and feasibility of management solutions (which were proposed).

c) Experimental methods: Ask for expert opinions on the questionnaire with three levels of questionnaire: very necessary (2 points), required (1 point) and not required (0 points); the same applies to the question of feasibility.

d) Data processing tools: Use a formula of mathematical statistics to calculate the weighted average value.

e) Respondents: it is expected that the questionnaire will be sent to 135 people (managers of some vocational colleges under the MARD, managers staff of some organizations, agencies and enterprises, senior managers of MARD and the General Department of Vocational Training).

3.4.2. Results of the experiment

a) Necessary level of the solutions

Results of 125 completed questionnaires are stated below:

Table 3.1. Necessary level of the solutions

No.	Management solutions	**Level obtained** (125 votes)				
		Veryne cessary	Necess ary	Unneces sary	$\overline{X}$	Rank
1	Mobilize the knowledge of scientists, college administrators and businesses to improve and supplement the OS before implementing the training	104	21	0	1,83	3
2	Holding training program development activities according to updated OS of the training major.	99	26	0	1,79	5
3	Focus on refreshing training for teaching staffs in the orientation of developing students' capacity to meet the needs of the OS	107	18	0	1,86	2
4	Strengthen direct activities to ensure the means and material conditions for the training process according to the OS	101	24	0	1,81	4
5	Regularly direct the improvement of vocational training activities on the basis of the evaluation results of the satisfaction level meeting the OS of the training major.	94	30	1	1,74	6
6	Organizing activities on fostering training management capabilities consistent with the OS for managers at different levels of the college	115	10	0	1,92	1
	Average of $\overline{X}$				**1,83**	

b) Necessary level of the solutions

Table 3.2. Necessary level of the solutions

No	Management solutions	**Level obtained** (125 votes)				
		Very feasible	Feasible	Unfeasible	$\overline{X}$	Rank
1	Mobilize the knowledge of scientists, college administrators and businesses to improve and supplement the OS before implementing the training	106	19	0	1,85	2
2	Holding training program development activities according to updated OS of the training major.	100	24	1	1,79	4
3	Focus on refreshing training for teaching staffs in the orientation of developing students' capacity to meet the needs of the OS	103	22	0	1,82	3
4	Strengthen direct activities to ensure the means and material conditions for the training process according to the OS	98	27	0	1,78	5
5	Regularly direct the improvement of vocational training activities on the basis of the evaluation results of the satisfaction level meeting the OS of the training major.	95	29	1	1,75	6
6	Organizing activities on fostering training management capabilities consistent with the OS for managers at different levels of the college	118	7	0	1,94	1
	Average of $\overline{X}$				**1,82**	

The figures in Table 3.1 and Table 3.2 show that: Management solutions are assessed with very high necessary level and feasibility. The system of 6 training management solutions according to the OS was also highly necessary (with value $\overline{X}$ = 1.83) and highly feasible (with $\overline{X}$ = 1.82) in the evaluation framework from 0 to 2 points.

c) Degree of correlation between the necessary level and feasibility of the solutions

Use the formula for calculating the Spearman correlation coefficient in mathematical statistics with the formula: **r** = 1 - $\frac{6\sum d^2}{N(N^2-1)}$; in the table 3.3:

Table 3.3. Degree of correlation between the necessary level and feasibility of the solutions

No.	Management solutions	**Correlation coefficient**				
		Necessity		**Feasibility**		**d^2**
		$\overline{X}$	Rank	$\overline{X}$	Rank	
1	Mobilize the knowledge of scientists, college administrators and businesses to improve and supplement the OS before implementing the training	1,83	3	1,85	2	**1**
2	Holding training program development activities according to updated OS of the training major.	1,79	5	1,79	4	**1**

3	Focus on refreshing training for teaching staffs in the orientation of developing students' capacity to meet the needs of the OS	1,86	2	1,82	3	**1**
4	Strengthen direct activities to ensure the means and material conditions for the training process according to the OS	1,81	4	1,78	5	**1**
5	Regularly direct the improvement of vocational training activities on the basis of the evaluation results of the satisfaction level meeting the OS of the training major.	1,74	6	1,75	6	**1**
6	Organizing activities on fostering training management capabilities consistent with the OS for managers at different levels of the college	1,92	1	1,94	1	**0**

With the data in table 3.3 we have correlation coefficient:

$$\mathbf{r} = 1 - \frac{6\sum d^2}{N(N^2-1)} = 1 - \frac{6[+1+1+1+0+0]}{6(36-1)} = 1 - \frac{24}{210} = 1 - 0{,}11 = \mathbf{0{,}89}$$

Coefficient **r = 0,89** is positive and close to Number 1; therefore, the correlation between the level of necessity and feasibility of the solutions are favourably correlated and closely correlated. That means every management solution with a high degree of necessity would receive a high degree of feasibility.

3.5. TESTING SOME CONTENTS IN MANAGEMENT SOLUTIONS

3.5.1. Experiment the 2nd content of the 3rd solution

Organize self-training activities for teachers in the capacity of teaching in the orientation of developing student capacity to meet the requirements of the OS.

1) The purpose: to recognize the awareness progress of teaching staff in the direction of developing student capacity to improve students' learning results.

2) Content and method: randomly selected 125 teachers from 5 vocational colleges under the MARD to answer 25 questions on the topic of capacity development before and after self-training to compare the progress of the teacher's awareness and students' learning outcomes.

3) Hypothesis: if the impact of management entity as the second content of the third solution is taken into account, then the teacher's perceptions of teaching in the orientation developing the students' capacity will be better and the students'learning outcomes is also higher.

4) Experiment Results

a, For the awareness of the lecturers:

Table 3.4. Teachers' perception results before and after self-training

Questions (Q)	Teachers answered the questions correctly before self-training		Teachers answered the questions correctly after self-training		Q	Teachers answered the questions correctly before self-training		Teachers answered the questions correctly after self-training	
	No	Ratio%	No	Ratio%		No	Ratio%	No	Ratio%
Q **1**	65	**52,0**	121	**96,8**	Q **13**	65	**52,0**	119	**95,2**
Q **2**	71	**56,8**	116	**92,8**	Q **14**	70	**56,0**	121	**96,8**
Q **3**	56	**44,8**	108	**86,4**	Q **15**	68	**54,4**	113	**90,4**
Q **4**	66	**52,8**	125	**100**	Q **16**	75	**60,0**	108	**86,4**
Q **5**	62	**49,6**	104	**83,2**	Q **17**	58	**46,4**	110	**88,0**
Q **6**	67	**53,6**	122	**97,6**	Q **18**	64	**51,2**	116	**92,8**
Q **7**	59	**47,2**	119	**95,2**	Q **19**	69	**55,2**	117	**93,6**
Q **8**	69	**55,2**	107	**85,6**	Q **20**	71	**56,8**	107	**85,6**
Q **9**	64	**51,2**	120	**96,0**	Q **21**	65	**52,0**	112	**89,6**
Q **10**	73	**58,4**	124	**99,2**	Q **22**	56	**44,8**	122	**97,6**
Q **11**	63	**50,4**	125	**100**	Q **23**	62	**49,6**	115	**92,0**
Q **12**	59	**47,2**	123	**98,4**	Q **24**	66	**52,8**	122	**97,6**
					Q **25**	64	**51,2**	116	**92,8**

The percentage change in the correct answers to the questions in Table 3.4, shows that before self- training answers correctly are low (lowest is 44.8% and highest is 60.0%); After self-training, the teacher's perception change has improved with the correct answer is higher (lowest is 83.2% and highest is 100.0%). This proves that the experimental hypothesis is justified, in other words the second content of the third solution is feasible.

b) For student learning outcomes

Examine the teaching results of 5 self-training teachers at Vocational Colleges of Agricultural Mechanics (VCAM) for 2 subjects they have taught in the first semester, the school year 2015 - 2016 (under K54 – before self-training) and the first semester of school year 2016- 2017 (K55 - after self-training), which have the same results of the entrance examination; This shows that the student's performance has improved (as shown in Table 3.5 of the original one). This further demonstrates the proven hypothesis, in other words the second content of the third solution is feasible.

3.5.2. Experiment the 3rd content of the 6th solution

Organizing activities self improving for managers of all levels of the college.

1) Purpose: To recognize the awareness progress of managers staff on training management according to the OS to improve the training shown in the students' learning results.

2) Content and method: randomly selected 75 teachers from 5 vocational colleges under MARD to answer 25 questions on the topic of training management according to the OS before and after self-training to compare the awareness progress of the managers staff and the students' learning results.

3) Hypothesis: If the impact of the managers staff as the third content of the sixth solution is taken into account, it is essential that the managers' awareness of training management according to the OS will be better and hence the students' learning results is also higher.

4) Results of trial

a) For the awareness of managers staff

The percentage change in the correct answers to questions in Table 3.6 indicates that before the managers' self-training, the correct answer is low (lowest was 41.3% and the highest was 66.7%); after managers' self-training their perception change has improved with the higher correct answer (lowest is 84.0% and highest is 98.70%). This proves that the experimental hypothesis is justified, in other words, the third content of the sixth solution is feasible.

b) For students' learning results

Collect data and compare the results of the academic classification of 5 students of VCAM between two semesters (one school year), in which the first semester , the school year 2015-2016 is the period that the managers staff have not participated in the self-training and the second semester, school year 2015-2016 is the semester that the managers staff have participated in self-training under the third content of the sixth solution. The figures in table 3.7 (The original one) shows that the student's academic performance has improved. This further proves that the experimental hypothesis is justified, in other words, the third content of the sixth solution is feasible.

CONCLUSIONS AND PETITIONS

1. CONCLUSIONS

Training according to the OS is unavoidable requirements of the training institutions in general and vocational colleges in particular in the current context.

Combining the components of the training process with the CIPO model of human resource training, it is shown that the training according to the OS at the VCs must be implemented in 9 main activities: adjust, add and announce the OS; develop training curriculas; admissions; teaching; study; facilities & training equipment; training environment; evaluate the training results; renovate the training activities after each training. Since then, the training management according to the OS at the VCs is that the managers staff affects the lower level managers and other educational forces to carry out the basic functions of management with nine mentioned training activities. Training management according to the OS at the VCs is affected by some objective and subjective factors; of course, the management capacity of the managers staff at all levels of the colleges is the most influential.

Training and training management according to the OS of the VCs under the MARD has good points; but there are also difficulties and shortcomings due to the management reasons for supplementing the OS, developing the curriculas; teaching capacity of teachers; ensure material facilities and facilities; improve training activities on the basis of training results; management capacity of the managers staff at all levels in the colleges.

In order to improve the training quality according to the OS, the VCs under the MARD must implement the following management solutions:

- Mobilize the knowledge of scientists, college administrators and businesses to improve and supplement the OS before implementing the training
- Holding training program development activities according to updated OS of the training major.
- Focus on refreshing training for teaching staffs in the orientation of developing students' capacity to meet the needs of the OS
- Strengthen direct activities to ensure the means and material conditions for the training process according to the OS
- Regularly direct the improvement of vocational training activities on the basis of the evaluation results of the satisfaction level meeting the OS of the training major.
- Organizing activities on fostering training management capabilities consistent with the OS for managers at different levels of the college

2. PETITIONS

To implement feasible management solutions, please recommend to:

- Ministry of Education and Training (MoET) and MOLISA work closely together to issue documents on management of human resource training for social needs; Formulate and promulgate policies for managers and lecturers in vocational training courses; establish coordination mechanisms in admission to the VCs under MoET and schools under MOLISA.

- Ministry of Agriculture and Rural Development (MARD) on the development and promulgation of the sector's Human Resource Development Strategy on the local, regional and national levels; strengthen financial investment and facilities & training equipment for the VCs.

- The VCs under the MARD on the synchronous implementation of the six management solutions proposed in the thesis to improve the quality and efficiency of human resource training according to the OS and meet the needs of society.

- Agencies, organizations and enterprises using human resources trained from the VCs to participate in training and training management activities according to the OS; it focuses on the stages: identify the OS, develop the curricula; participate in teaching, investing facilities & training equipment, evaluate the training results and taking responsibility for recruiting students who have been trained according to the OS at the VCs under MARD.