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Innovation in Research-Oriented Teacher Training in Universities of Education in Vietnam

Assoc. Prof. Dr. Truong Thi Bich
VNU University of Education

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Corresponding Author:
Truong Thi Bich

ABSTRACT

The context of globalization and international integration sets forth new requirements on the quality of human resources, thereby demanding improvement of the quality of teacher training in universities of education. International studies shows that scientific research-based teacher training is proving to be an effective method. The importance of scientific research in teacher training is mentioned in the article, also specific research-oriented teacher training methods are pointed out and analyzed: teacher training with problem based situations, teacher training using practical action research.

KEYWORDS: Teacher training, research orientation, practical action research, educational innovation.

1. INTRODUCTION

It is affirmed in the current context of socio-economic development that scientific research takes a very important role in the intellectual economy. In the field of education, while teacher training in our country is oriented to increasingly emphasize on requirements such as "standardization", "modernization", "international integration", the good implementation of scientific research in teacher training will be an important condition to realize that philosophy. Students in the XXI century not only require more knowledge, but also desire capability to learn knowledge and create knowledge, so what students really need is a method of thinking, independence in finding and discovering knowledge.

Scientific research-pertained training is a trend, a positive measure of dynamic and creative education. Outdated views that universities in general and universities of education in particular are simply training institutions are eliminated in fact. Nowadays, they have two parallel functions that are training and scientific research, which always support and complement each other to improve the quality of training and research. Research and teaching are combined closely in order to equip students with necessary basic knowledge and methodology so that after graduation, they can continue their studies and be able to solve problems arising in practice. Research-based training is a thorough principle throughout the entire learning process.

Recently, in an international research, when asked to explain a discovery or an unfamiliar phenomenon that can be explained by a scientific concept or a theory previously learned, scientists received similar answers from most students: they failed to explain the phenomenon in question, even some answers were identical to ones of those who have not learned relevant subjects yet. According to scientists, these students might acquire knowledge of problems and practice, however they were lack of thought factors in nature of research [3]. In universities, most lecturers have not brought actual spirit of research to students through lecture contents as well as their lecturing methods. It is also right for universities of education.

From research results, many foreign studies indicate that one of the things making an "teacher meritorious" is that such teacher always directs students to research situations, challenging thinking tasks, discovering, thinking on what has been perceived to focus on broader learning goals ("What is the main problem we confront?", "What problems are we trying to solve?", "Which information do we need to know but have not been known yet?"….). In the early XXI century, some higher education managers called for a body of lecturers who frequently paid attention to attracting students to participate in research with them or might proceed separate surveys in order to create an academic community between lecturers and students in universities. Lecturers must be those who have a good command of their major and also know how that discipline can be learned by spending time researching educational issues, making suggestions for activities in higher education, sharing their research results with colleagues [4].

Assessments on teacher training quality in our country have been implemented by various objects and at different levels, from management level of authorities/agencies to direct teacher training institutions, Vietnamese educational researchers and international education specialists. Besides the strengths, the weaknesses have been stated specifically, accordingly, teacher training has not been paid attention to and implemented as a continuous process... there is no closely connection between training and scientific research. This poses new demanding requirements for teacher training.

2. CONTENT

2.1. Scientific research in teacher training

According to the broadest sense, scientific research is an intellectual activity, solving problems according to cognitive and practical targets with special methods and means to discover the nature and rules of movement of the world, thereby creating a new knowledge system that can be applied to life and meet human needs.

Intellectual economy demands a new educational system, new educational method, where teachers are not simply lecturers of educational programs, but they must be innovators and researchers in education [5]. Internationally, the trend of innovating research-oriented teacher training has been applied in many countries with advanced education and has become a topic on the agenda of international forums. That is to include scientific research into training programs and teacher training processes in order to prepare the spirit of research for future teachers in fulfilling their future professional roles in high schools. Teachers not only know how to complete tasks with their existing competences, but also have the spirit of scientific research, are eager to learn, and even proceed scientific research and publish their research findings in a scientific journal. This spirit has been expressed in the Teacher's Professional Standards and Teacher Training Program Frameworks of many developed countries in the world as well as in the Asia-Pacific region. For examples, the Teacher training competence Framework of European Union (2009) sets forth 8 groups of competence, in which the third group – "Theory pertains to Practice" - the mentioned competencies thereof are all clearly research-oriented ones, including: "Learning while practicing", "Research-based learning application", "Guided teaching practice", "Learning about information acquisition and knowledge development", "Research direction supporting", "Research conduction". Similarly, the Singaporean Teacher Training Program Framework empathizes the connection between training and research towards the professionalization of XXI century teachers with the following competencies: retrospection, discovery, and innovation... In term of this aspect, scientists give quite specific suggestions, for example: "Training pertains to scientific research", "Subject content knowledge integrated with pedagogical knowledge", "Teaching with research method", "Student with scientific research"…[5].

With the specific characteristics of teacher training, scientific research in universities of education should be given complete attention in term of both basic research and educational scientific research. At the same time, in the field of educational science, both theoretical/basic research and applied research should be paid attention. Currently, in many universities of education, the meaning of educational scientific research is not fully recognized by managers and lecturers. Educational science is of human education, with basic function of studying the nature and rules of facts, phenomena and educational processes, in order to apply such knowledge to innovating educational practice. Like other scientific fields, educational scientific researches nowadays are aimed at directly serving the development of educational and social policies of the country, so the scope of research is increasingly expanding, together attracting many other scientific disciplines to create interdisciplinary researches.

The model of research-based teacher training indicates that by researching, students of universities of education can change their visions on pedagogical practice, revise how to approach teaching career, make pedagogical practice more suitable, have creative thoughts about educational activities. This model has been mentioned with teacher training in Finland since the early XXI century (Kansanen 2006) and has been being applied to practice powerfully in developed countries. Accordingly, learning and researching are within the training program contents and training methods for all students. In the training programs, the followings methods are fulfilled: a/ Learning about the existing studies in the special discipline; b/ Developing research skills and techniques; c/Fulfilling research and discovery; d/Participating in discussions about research. The model of teacher training - research is based on the viewpoint that teacher training is very important and cannot be neglected, because shortcomings and mistakes made at this stage will be very difficult to correct later. Although continuing training is obvious, the foundation of professional competence must be formed from the initial training stage [8]

2.2. Method of research-oriented teacher training

2.2.1. Teacher training with problem based learning situations

Instead of giving lectures and practice for such lectures through respective assignments at classes, students are put into *problem based learning* situations by lecturers. The method of problem based learning (PBL) first appeared mid-XX century in Medicine teaching (Gijbels, Dochy, Van den Bossche & Segers, 2005), which was gradually applied to various training fields at higher education, even used at general education. In fact the problem based learning is the "method of learning that results from the process of working toward understanding or providing how to solve a problem" (Barrows & Tamblyn, 1980). It is empathized by specialists

that "the starting point of teaching must be a problem, a question or a puzzle that students want to solve" and the key component of problem based teaching is the hypothesis identification/development and testing (Boud, 1987) [2], [6]. Meta-analytical research results on the use of problem based teaching in teacher training show very encouraging and promising results.

Basing on the characteristics of problem based teaching, a 7-step process is suggested for lecturers by researchers (cited in [7], in details:

Step 1: Instruct students how to prove effectively, including provide students with information for effective proving: basis of argument, evidence, information filtering; introduction about possible thinking errors when setting up arguments; introduction of common errors in arguments using quantitative data.

Step 2: Students should observe some physical and psychological phenomena in a situation posed by a lecturer or listen to the lecturer's presentation on a judgment; state a hypothesis; collect data to test the hypothesis; report their conclusions; students must explain changes as a result of the assignment made to their initial thinking about the topic.

Step 3: Students are requested to determine what should be done differently basing on the context or situation. Those are predicting how new contexts/pressures affect the situation; representing their predictions and comparing with what occurred in fact; describing their conclusions using closely structured evidences.

Step 4: Give students assignments and request them to evaluate and to provide alternative solutions. Students may be required to set forth criteria/requirements. Students should collate initial predictions with actual results of this activity; Explain how the decisive assignment confirmed or denied their initial opinions; Present their conclusions while using convincing evidences.

Step 5: Let students involve in survey assignments (for researching and learning) while demanding them to set up and inspect hypotheses. Survey is a process of inspecting hypotheses on facts in the past, present or future. There are three types of survey: historical survey ("Which did actually occur and why?"); Research survey (Which will occur if …?); Determination survey ("What are important characteristics/determinative features of ….?"). Students should clarify concepts while presenting their studies in form of a question; ; make their own predictions; search for relevant information to analyze, compare and make conclusions; Compare their conclusions with initial predictions, present the conclusions using convincing evidences.

Step 6: Request students to design their assignments. Instead of designing assignments for students, lecturers will ask students to design assignment themselves. Lecturers may ask some suggestive questions.

Step 7: Pay attention to a process of teamwork learning. Problem based assignments are suitable for teamwork interaction because students are required to gather and share information in such assignments.

2.2.2. Teacher training using practical action research [8].

Action research is a process of asking important questions and finding answers for such questions in a scientific manner. The questions are really meaningful to researchers and closely related to teachers' tasks. Therefore, the action research is a type of research which is practical and connected to researchers' tasks such as Determining a research problem, Asking research questions, Collecting practical data, Analyzing and drawing meanings from obtained results.

In this type of research, there is a difference that the researcher is an object of the research. Cohen and Manion (2000) showed practice-improving action research connected the action and the research, that means the practice and the theory can be connected through the action research. By applying the action research in teacher training, not only the educational practice is innovated but also participants are developed, become confident, and therefore, it is a favorable way for profession learning of students of universities of education. According to scientists, the idea of action research is the best way to define and discover educational problems in the place where they occur - classrooms and schools. When individuals working in such environments are engaged in research activities, research findings will be applied immediately, and problems will be solved more quickly. Therefore, the connection between theory and practice, research and action in the action research can open a way to connect learning to practice in the teaching profession training. However, the method of applying the action research in teacher training should be researched more.

Teacher training by the research of general education practice requires universities of education to promote scientific research activities of lecturers and students; cooperate in research between members of universities of education and members in schools; strengthen student's research in connection with the general education practice; put research findings on pedagogy in the training process.

At present, in our country, the teacher training methods are deemed as being biased towards knowledge provision, separating theory and reality, disregarding practice. Although the teaching practicum is affirmed as being very important, in fact, it accounts for an insignificant proportion in the study load of the entire academic course; students are still weak in learning through analysis, criticizing, and thinking from practical observation, practice, and teaching practicum due to lack of attention; instructions for students in teaching practicum are mainly based on personal experience of lecturers; the efficiency of teaching practicum and instructions for teaching practicum for lecturers, students,

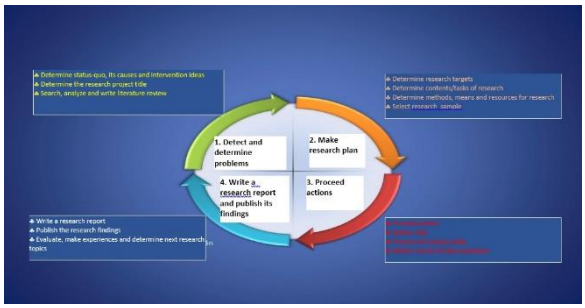
classes, etc. has not been assessed; The transit to practical action research-based training will require certain efforts and intellectual investment. There are basic signs to realize the action research-based learning in teacher training:

- General education practice becomes materials to convey theoretical knowledge about educational science and pedagogical science.

- Improvement of general education practice is deemed as the main mean for students to learn the teaching profession.

- Equal and democratic cooperation among participants is the way of organizing general education practice to improve the general education practice.

Relating to this training method, requirements on the practical action research organizing skills must be included in the teacher training program specifically because it is a process of different phases, and each phase requires researchers to have certain actions with the following steps [2].



Process of practical action research

** Discover and determine research problems*

- Determine the situation, reasons for the situation, and choose ideas for interference with, improvement, or enhancement of such situation.

- Determine the research title, research questions.

- Search, analyze and write a literature review from comparative researches relating to the object, process, and problems solved by previous researches.

** Make research plan*

After determining the research title/problem, the researcher should make a research plan; this step is called "research outlining". The contents in this step include:

- Determine research objectives.

- Determine research contents/tasks.

- Determine research methods, means and resources.

- Select research samples and methods of research data collection.

** Proceed research/action*

- Proceed to action/interference.

- Collect data.

- Process and analyze collected data.

- Reflect results of data analysis.

All operations and actions in conducting research require researchers to be equipped with certain skills in scientific research activities. In addition, in the research process, knowledge and methods about scientific research are necessary and sufficient conditions to ensure that such research is valid, reliable and, importantly, ethical in educational scientific research.

** Write a report and publish its findings*

- Write a research report.

- Publish its findings.

- Assess, draw lessons from experience, and determine the next research problems.

All scientific researches in general and practical action research in particular, if not published, shared and applied in practice or used in subsequent researches, are meaningless. Therefore, in training activities, lecturers need to allow students access to and use their own research findings to improve the quality of teaching and learning. Then, from the sharing and publication in different media, if the research findings are more widely known and applied, its scientific value and significance will be higher.

Researches for practical improvements should be conducted with various educational research tasks by teacher training institutions in cooperation with high schools. First of all, in researches for practical improvements at schools, researchers of both universities of education and high schools participate in researches, discover and solve existing problems in high schools in both management and teachers' organization of teaching and educational activities. Researches based in high schools and carried out by members of both universities of education and high schools in combination with a number of external experts will bring many benefits. First of all, research findings will help high schools understand themselves and find out existing problems of teachers, give out practical solutions to develop teachers' professional competencies; given solutions will be more practical and feasible. Concurrently, universities of education also have a practical basis to assist students in defining disadvantages and advantages in practicing their teaching and educational stills in the teacher training process.

In organizing researches to assess impacts of practical improvements, teacher training institutions will let students participate in such researches with high school teachers as practitioners - researchers (not as assistants and information providers), they will contribute to the schools like real owners. Therefore, teachers will become braver, more confident and more competent. On the other hand, in cooperation with professional researchers who are lecturers at universities of education, members from high schools can learn research and problem solving skills. Hence, young teachers will become braver, more confident and more competent. At high level, high schools can organize researches to find solutions for a specific problem, teachers or researchers from universities of education can be invited as external experts for coordination. Vice versa, universities of education in cooperation with high schools will know clearly about the practical situation at schools and obtain information, research findings to enrich knowledge about

high schools, and then make improvements and supplements to contents of teacher training in universities of education.

3. CONCLUSION

Teaching is a profession which requires professionalism and specialized training so that teachers can both grasp thoroughly the scientific knowledge system in their fields of teaching and organize teaching and learning activities efficiently. The current need for educational innovation requires each teacher to achieve certain standards, in which the standard of scientific research capacity is emphasized on par with the teaching standard.

In Vietnam, the orientation of scientific research development in teacher training institutions has recently received attention. Students are encouraged to cooperate with lecturers in scientific researches; named in published research papers relating to research findings. The researches are based on difficulties and shortcomings in the practical teaching and educational activities of teachers, in students' practice of professional skills at high schools. Students have really grown up from such scientific researches which are closely connected to the teaching practice.

To solve the issue regarding the quality of teacher training, the experience from foreign countries for a long time has shown the necessity of scientific research in training. The scientific research-oriented teacher training method for pedagogical students emphasizes learning from practice, learning in practice, and learning for the development of general education practice that brings about quality, development of educational scientific research and pedagogical science, and promotes the development of the teaching profession.

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