Features of Managing the Establishment of the Master's Degree Students' Competence in the Research Activity

Kuat Maratovich Bajmyrzaev, Erkin Amanzholovich Abil,
Botagoz Shakirovna Bajmuhambetova and Bibigul Mazanovna Utegenova

Kostanay State Pedagogical Institute, Taran St.118, Kostanay, Kostanay region, 110000 Kazakhstan

Abstract: The article is devoted to the urgent issues of the vocational training of the master's degree students within the continuing education in the Republic of Kazakhstan. The review of the master's degree programs in education has been carried out, on its basis a set of the fundamental requirements to the vocational training of the master's degree students has been defined at the following levels: goal-setting, the relationship between a professor and a master's degree student, the principles of didactic planning, the training process management, control and analysis. In order to improve the quality of the vocational training of the master's degree students, subject to the positive experience of the foreign education institutions, we reveal the features of managing the establishment of the master's degree students' competence in the research activity. The stages and elements of establishing the master's degree students' competence in the research activity have been set forth, as well as the effective teaching conditions for this competence establishment have been defined and identified.

Key words: Master's degree student • Competence • Establishment of the competence in the research activity • Research activity • Vocational training of the master's degree students • Education quality • Management of the research activity of the master's degree students

INTRODUCTION

At the present stage of the education development the bachelor's-master's degree model of the higher education-is the most recognized and globally spread university system of the specialist training. This model is practised in all famous traditional universities of the advanced countries. In different countries it could be the science or academic degree, the indicator or the level of the academic competence of a specialist [1-4]. The experience of the foreign education institutions in the vocational training of the master's degree students shows that one of the main teaching goals is to teach the master's degree students how to think and to acquaint them with the fundamental principles of the scientific research. Training is carried out using the flexible variant forms of the research activity management: propaedeutics and proseminars, the work on the research projects, including the research findings replication in publications, training at the problem-oriented courses within the project training, etc. [5-7].

In addition, the international scientists' engagement to the research programs is carried out. At the same time the university governance is aware that the quality of the human resource development is to the large extent determined by the readiness and ability of the trainees to work in the context of globalization and transatlantic student mobility. Therefore, while managing the vocational training the electronic and information technologies, on-line training are used [7]. As a result, universities become both the workshop for the scientific research and the institution of the higher scientific teaching - the general scientific along with specialized one [8].

All the aforesaid has allowed us to identify a set of the fundamental requirements to improving the vocational training of the master's degree students within the continuing teacher training:

At the level of goal-setting-the human potential "raising", training his ability to act appropriately in the forthcoming subject and social situations, the establishment of the occupational competence take place.

Corresponding Author: Bajmyrzaev, Kostanay State Pedagogical Institute,
Taran St.118, Kostanay, Kostanay region, 110000 Kazakhstan.
At the level of the relationship between a professor and a master's degree student, the master's degree student is an agent, a person who acts proactively and responsibly. The professor is an adviser, an assistant.

At the level of principles - the scientific character of the knowledge acquiring method, its analysis and interpretation take place; the coherence and regularity are combined with the education path selection. The trainees' consciousness and activity are associated with the maximum training individualization; the conscious use of the knowledge acquired in practice; problemacticity as the required condition in the education content construction take place. The training availability requires the construction of the individual training path according to the subjects selection. The visualization along with the constant application of the computer and information technologies takes place. The endurance and cyclicity-are developing the skills of the independent continuous acquisition of the required information (increasing research activity of a master's degree student). The occupational orientation - is the targeted modelling of the subject and social context of the future professional activity are associated with the professional and personal qualities which ensure the maximum training individualization; the conscious use of success and effectiveness of the research activity.

According to the social order for the master's degree student, we have defined the requirements for the level of the elite specialist training who possess along with the high professional skills the skills and the ability to set the research tasks, to plan the research, to carry out the research activities, to analyse the initial data and to evaluate the research findings.

The next aspect of managing the establishment of the master's degree students' competence in the research activity required the detection of their research activity features. Since the main types of activity, for which a master's degree student should be ready is the research, research and education activity, we have analysed the nature of the "research activity" concept.

The review of the modern research and education literature indicates that the "research activity" is identified with the concepts of the "research activity" (RA) and the "teaching and research activity".

In psychology and education researches by the teaching and research activity (TRA) the research activity which is carried out within the education process in order to accumulate the agent's skills and knowledge of the scientific knowledge methodology aimed at obtaining the subjectively new knowledge is meant. (E.V. Berezhnova and V.V. Kraevsky, et al.) [10].

According to some authors (E.S. Zair-Bek and Y.V. Solyanikov et al.) the research activity [11] is a type of the independent activity of trainees, but it stands out from it because of its research nature. To this extent, RA is a type of the exploratory activity aimed at acquiring the objectively new knowledge.

According to the conducted analysis by the "research activity of the master's degree student" concept we mean: the specially organized activity on obtaining the scientific knowledge methodology and managing the research search, which results in the relevant level of establishing the research skills and personal qualities to ensure the successful operation of this activity.

For the purpose of executing successfully any kind of activity it is necessary that the competence in this activity should be established for a person.
The establishment of competence in the research activity is carried out gradually as a result of obtaining the knowledge, skills and abilities which are important for executing successfully the research activity by a person. Drawing on the researches (V.A. Slastenin, R.S. Seldemirova and Zh.S. Saffronova et al.) [12-14] we have determined three basic elements of the competence in the research activity: motivation and value, cognitive and operation, personality ones. The interaction between these elements is the nature of the master's degree students' competence in the research activity. By the master's degree students' competence in the research activity we mean the special mental state, which reflects the attitude and the result of his internal intellectual and personal development, the command of the structure of the active cognitive actions and the system intended for its implementation.

According to the theoretical review of the scientific literature we have specified the teaching conditions for establishing the master's degree students' competence in the research activity: a) drawing the master's degree students into the information and research environment at all stages of the vocational training; b) intensification of the master's degree students' research activity through the use of the innovation training methods; c) the master's degree students' focus on the self-educational activity by realization of the vitagenes experience, establishing the successful situations and accessing the reflective position.

For the purpose of confirming the scientific truth of the teaching conditions for establishing the master's degree students' competence in the research activity which were put forward by us we have organized and conducted an experiment, which took place within the standard education process of the master's degree program at the Kostanai State Pedagogical Institute.

For the experiment, we have taken the plan of the initial and final diagnostics, the intermediate data slices, with the use of the control and several treatment groups. This plan has a sufficient validity and allows tracking the changes according to the estimated parameters.

The master's degree students' competence in RA was evaluated according to the following parameters: the motivation and value attitude towards the research activity, a set of the research knowledge and skills and professionally important personal qualities of the teacher-researcher. Each indicator is defined by its describing features. According to the specified criteria and features we have determined three levels of establishing the master's degree students' competence in the RA: the reproductive, reproductive and creative, creative ones.

Four groups have been formed to conduct the teaching experiment: a control group (CG) and three treatment groups (TG-1, TG-2, TG-3). In each group the experiment was conducted within two years and was carried out as follows. In the control groups, the training was conducted without the targeted use of the available teaching conditions. In the treatment groups 1TG-1, 2TG-1, 3TG-1, drawn into the experiment, in the first and second year of its running respectively, the program of establishing the competence in RA with the first condition was implemented; in the 1TG-2, 2TG-2, 3TG-2 groups the program with two conditions-the first and second ones was implemented; in the 1TG-3, 2TG-3, 3TG-3 groups the program with three conditions was implemented.

The management of the establishment of the master's degree students' competence in the research activity has been carried out in three main trends, each of those solves its clearly set tasks.

The first trend is related to the establishment of the master's degree students' motivation and value attitude to RA and the attitude to the active participation in RA, as well as establishing the professionally important personal qualities of the teacher-researcher, which are necessary for the effective independent research activity. Obtaining the research knowledge and skills is carried out at the general methodological level, while studying the fundamental basic subjects.

These problems solving in the treatment groups has been carried out while studying the special course of the "Theoretical and Methodological Essentials of RA" the fundamental subjects, as well as the work on the "School of Young Scientists and Master's Degree Students", while self-educational program preparing.

The studies we held using the dialogue and search procedures. The methods were the macroresearches, the master's degree students' cooperation in microgroups, the project method. The problematic and motivational situation, the activities by analogy were used as the techniques.

An important role in establishing the motivation and value attitude to RA was given to self-educational program preparing. They are: the individual master's degree student activity plan, as well as the portfolio preparation by each master's degree student. Concurrently to the studies the work in the School of Young Scientist and Master's Degree Student was executed.
Thus, on the basis of the set forth structure the establishment of the master's degree students' motivation and value attitude to RA is carried out, the interest and the positive attitude to it occur, the pursuit to try their potential appears.

Second trend - is related to the establishment of the research knowledge and skills at the level of the certain research and educational study.

The Content of the Training Material Was:

- The professor's development of the research tasks complex-the training programs which reflect the main content of the training process. It constructs the master's degree students' thinking and generates their cognitive activity.
- The studies arrangement through the use of the innovation training methods.

The main professor's task was not only to transmit the information, but to introduce the master's degree students to the objective differences in the scientific knowledge development and the methods of its resolution. In this case, we asked the audience the particular questions, which created the conditions for the alternatives. The dialogic professor's involvement in the communication with the master's degree students was carried out according to the following principles:

- The professor came into the contact with the master's degree students not as the "legislative officer", but as the conversation partner.
- The professor not only recognized the master's degree student's right to his own judgement, but also he was interested in it.
- The communication with the master's degree students were built so that they were led to their own independent conclusions, they were made the co-partners of the training process, the searching and finding the ways to resolve the differences.

After each lecture the special homeworks in the form of tables were used, the independent execution of which helps to solidify the learned material. This technique represents the schematization and systematization of the material, what contributes to the better understanding of information, the development of the research and critical thinking, focuses on the self-educational activity.

Third trend-is aimed at practising the research skills at the level of obtaining the knowledge and skills of the research and educational study procedures and techniques. The implementation of these tasks is carried out by:

- Developing the programs on managing the research and research and educational practices;
- Developing the study guide on the 'Research and Educational Aspects of the Master's Degree Program Design'.
- The extracurricular research activity management.

The data obtained as a result of the experimental work allowed detecting the positive trend in establishing the master's degree students' competence in the RA using the available teaching conditions for the establishment of the master's degree students' competence in the research activity.

The experimental results showed the increase in the level of establishing the competence in the RA in all groups, but the most significant changes had occurred in the treatment groups. The number of the master's degree students in the treatment groups which have the establishment of the competence in RA at the research level, has increased in TG-3 by 68.42%; in the TG-2 by 52.64%; in the TG-1 by 38.89%. In the control group, CG, where the master's degree students' training process was carried out without the implementation of the teaching conditions the establishment of the competence in RA increased slightly (by 11.1%).

Table 1: Results of Ranging the Master's Degree Students into the Levels of Establishing the Competence in the Research Activity

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of People in a Group</th>
<th>Algorithmic</th>
<th>Interpretative</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>CG</td>
<td>18</td>
<td>7</td>
<td>38.89</td>
<td>9</td>
</tr>
<tr>
<td>TG-1</td>
<td>18</td>
<td>3</td>
<td>16.67</td>
<td>8</td>
</tr>
<tr>
<td>TG-2</td>
<td>19</td>
<td>1</td>
<td>5.26</td>
<td>8</td>
</tr>
<tr>
<td>TG-3</td>
<td>19</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
</tbody>
</table>
CONCLUSION

The need for establishing the master's degree students' competence in the RA is due to the increasing role of the research activities at the present stage of the social development, as well as the insufficient development of the investigated problem in the theory and practice of education. The organized teaching experiment showed a significant increase in the level of the master's degree students' competence in the RA in the treatment groups, where during the vocational training of the master's degree students the available teaching conditions were implemented.

Conclusions: The urgency of the issue of establishing the master's degree students' competence in the RA is due to the high requirements for the quality of the vocational training of the master's degree students. The quality of the vocational training of the master's degree students is determined by their research competence. By the master's degree students' competence in RA we mean the entire personal education of the master's degree student which reflects his attitude and the result of his internal intellectual and personal development. As the entire education it is a unity of three elements: the motivation and value attitude to RA, the cognitive and operation and personality ones.

The available teaching conditions contribute primarily to establishing the research level of the investigated competence. Moreover, the experimental data obtained in the TG-3 group clearly indicate that the efficiency of using the set of conditions is higher than those of its separate implementation.

REFERENCES