PROFESSIONAL COMPETENCES OF FUTURE TEACHERS: PERSPECTIVE OF DIFFERENT EVALUATORS AND CONTEXTS

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Abstract

The article presents research on professional competence for future teachers. The study provides the answers to the questions 1) what are the differences between the future teachers' desirable and real professional competences evaluated by students themselves, their University teachers, and their potential employers? 2) what are the differences in the evaluation of future teachers' professional competences provided by the students and University teachers from the study programs enriched with the principles of ESD and those who come from other programs? The future teachers (n=24) and teachers from the Daugavpils University (n=24) as well as the school principals of Latgale region of Latvia (n=25) filled out the questionnaire by Grecov and Popova (2005). It was concluded that both students and teachers see the necessity for the further development of competences while encounter with ESD principles mostly elicits the need for the higher standards of professional competences and more critical stance toward the achieved level.

Key words: professional competences; future teachers; teacher training; self-evaluation; education for sustainable development.

Introduction

The idea of sustainable development is the idea of harmonious coexistence of human beings and the surrounding world. Sustainable development and the surrounding world are connected by the concept of ecology. One of the challenges in this regard is the maintenance, conservation and restoration of natural resources after the human's intrusion into the process of natural life. Besides, currently we encounter the problem of maintenance, conservation and restoration of humans' individual resources in order to reach the sustainability. Humans are both biological and social beings. The social nature of humans in particular is revealed in their social relationships, in the support of human development by social institutions. Sustainable development and education for sustainable development (ESD) should be articulated according to the integrity of development, interpreted not only in an anthropocentric or cosmocentric sense, but according to a synthesis between world, subject and society (Salite & Pipere, 2006).

Today we can single out both pessimistic and optimistic views upon the essence and future of education in the world experiencing the intensive process of globalization. Generalizing the trends of world's social development, Kurbatova (2007) proposes the distrustful scenario stating that education today is a social quality of society in a state of crisis of socialization: "Today the humans' sensual universal nature, their spiritual world, general state has been threatened. Therefore, it can be concluded that contemporary education as a social institute is experiencing a deepest crisis" (Курбатова, 2007: 52).

The more optimistic vision is represented by educational research and scholars adhering to the ideas of ESD (Salite, 2006; Raudsepp, 2006; Henno, 2004, and others). For example, Mandolini (2007) singles out the following components of sustainable education – multidimensionality, multilateral development, attention to the pupil's personal subjectivity (ethics), cooperation, and spirituality and shows that it is possible to reach the real essence of being human through the education.

One of the major aspects of the interaction between the humans, society and natural environment is that of professional activity. The connection between the person and society is revealed in the professional choice and career development and in receiving social support doing this. The processes are closely connected with the formation of professional identity. Professional identity development in the early adulthood is most likely to take place according to the self-construction model (Guichard & Lenz, 2005) that presupposes the presence of internal and external aspects. The internal aspect is a desirable level while the external aspect is the real level of professionalism that includes also the professional competences. The process of professional identity formation and career development envisages the continuous comparison of the ideal and real situation. The efficiency of professional activity in this model correlates with the successful development of necessary competences.

Considering the two-fold nature of self-construction process, while evaluating the professional competences, it is necessary to take into account the students' needs for a certain level of competencies, the possibilities of the study programs to develop such competences, and employers' requirements for the professional competences of their employees.

Theories of professional competences

Since White (1959) introduced the term 'competences' to describe the knowledge, abilities, skills and features of the personality necessary to perform the work qualitatively and allowing forecasting the individual's successful professional activity in the future, a large number of theoretical and empirical studies of this phenomenon appeared in the literature.

Not only understanding of the phenomenon has been expanded. At present, two terms are used to denote this concept 'competence' and 'competency'. The notion 'competence' refers to the functional spheres (what one should be able to do), but the notion 'competency' – to behavioral spheres (how it should be done) (Le Deist & Winterton, 2005). In the 90s, Hamel and Prahalad used this notion to investigate the resources of management strategy (Hamel & Prahalad, 1994).

Within the framework of this research the competences are classified into the general ones characteristic of the majority of professions (Stasz, 1997) and the profes-

sional ones characteristic of the particular profession. At that, the notion of competence and the notions of informal and non-formal education related to it become very important in describing the structure and the meaning of lifelong education (*Common European Principles for Teacher Competences and Qualifications*, 2005).

Difficulties in understanding the essence of the phenomenon are reflected in the attempts to define it. In these definitions, either the functional sphere (competence), or the behavioral sphere (competency), is brought forward to the foreground. Thus, Elkin (1990) relates competences to the minimal admissible level of work performance, while competencies are related to higher management peculiarities. Regarding the teacher's activity it is manifested in the extent to which he/she has a command of the class during the lesson. Hartle (1995) expresses a different point of view. Using the notion 'competency' he points out that it is the individual's peculiarity ensuring the performance of work and including the visible part, i.e. knowledge and skills, and the hidden part, i.e. the character traits and motives.

The definition of competences depends on the strategy followed by a particular social institution. In the given research, by a social institution we mean the EU and UNESCO structures elaborating the guidelines and programs for the development of education.

The documents of the European Commission (Directorate-General for Education and Culture) reflect the strategies of lifelong education. In the document entitled *Common European Principles for Teacher Competences and Qualifications* (2005) we find the description of such key competences: work with others, work with knowledge, technology and information, work with and in society. Here, as we can see, the importance of social and cognitive competences is stressed.

The social and, especially, cognitive aspects of teacher training are explored in the studies conducted by Shulman (2004) and Grossman and Richert (1988). These works present the classification of knowledge, suggest a model of pre-service teacher training, discuss the ways of higher education development, and elaborate the criteria of effective teaching. However, the problem of competences on the whole is not considered here.

Presently, UNESCO is developing the conception of ESD that includes the lifelong education. However, not only social links and acquisition of knowledge are stressed in this regard. A person's understanding about how his/her activities change the natural environment is of major importance here. Knowledge is needed not only for progress, but also for the restoration of balance between humans and the environment.

Drawing on what is mentioned above, the classification of competences in tune with the principles of ESD will be presented further. Analysis of the literature shows that the conceptions of professional competences evidently can be classified into four groups according to:

- (1) the peculiarities of the scientific approach: behavioral, functional and multidimensional approaches to understanding of competences (Le Deist & Winterton, 2005);
- (2) the forms of psychological activity connected with the temporal continuum. An example here is the classification by Deisone and Dammans (2006) that distinguishes the competences connected with a) knowledge/skills (the individual's past); b) willpower/wishes/motivation (the individual's present); c) possibilities/hopes (the individual's future);
- (3) the types of interrelation with the environment that determine:

- a) educational-cognitive competences or the sum of abilities and skills of cognitive activity; mastery of mechanisms of planning, analysis, reflection, self-evaluation of success; mastery of actions in non-standard situations, method of problem solving; mastery of measuring skills, using statistical and other methods of cognition;
 - b) informational competences, or abilities to search, analyze, select and process the necessary information independently with the help of information technologies;
 - c) communicative competences or mastery of the skills to interact with the people, the ability to work in group, to perform different social roles (Князев, 2002);
- (4) the forms of carrying out professional activity.

Within the framework of the last approach Le Deist and Winterton (2005) suggest a holistic model of competences: functional ones (skills), cognitive ones (knowledge and understanding), social ones (behavior and relations), and meta-competences which facilitate the acquisition of other competences (Le Deist & Winterton, 2005).

Theory of competences by Grecov and Popova should be also referred to the fourth group in the classification. Having analyzed about 20 studies, they have come to the conclusion that all professional competences can be classified into three main groups: instrumental, interpersonal and systemic ones:

- **Instrumental competences** are the competences having an instrumental function. They include:
 - *cognitive abilities*: the ability to understand and use the ideas and thoughts;
 - *methodological abilities*: the abilities to deal with the environment; organization of learning time and strategy; decision making or problem solving;
 - *technological skills*: command of technical devices, skills of information management and computer skills;
 - *linguistic skills*: oral and written communication, knowledge of the second language.
- **Interpersonal (communicative) competences**:
 - *individual abilities*: such as the ability to express one's feelings, the ability of criticism and self-criticism;
 - *social skills*: interpersonal skills or work in a team, adherence to social or ethical values. These skills facilitate the processes of interaction and cooperation.
- **Systemic competences**: skills and abilities related to systems as a whole. They presuppose the combination of understanding, receptivity and knowledge which allows an individual to see the parts of a whole and their connections in the unity. These skills include the ability to plan changes in order to improve the existing systems and to develop the new ones. Mastery of instrumental and interpersonal competences is required as a basis for systemic competences (Греков & Попова, 2005).

The study described in this article draws on the last approach. The questionnaires suggested by Grecov and Popova (2005) were taken as the basis for creating the research method. The original questionnaires included the list of competences needed in order to conduct any professional activity.

The necessity of the given research was, first of all, dictated by the need to test the correspondence of future teachers' real level of professional competences to the desirable one (personality aspect). Secondly, speaking about the social aspect, one of the objectives of the research was to find out if the self-evaluation of professional competences by future teachers coincides with the evaluation of the teachers who conduct their classes. Besides, it was necessary to clarify to what extent the level of professional competences acquired in the process of studies at the University meets the employers' expectations. Also, the given research revealed the influence of the study courses enriched with the principles of ESD upon the evaluation of professional competences.

Therefore, the answers to the following questions were sought:

- What are the differences between the future teachers' desirable and real competences in students' self-evaluation and in the evaluation of university lecturers and employers?
- Are there any differences in the evaluation of competences by the students and teachers who study and work in the programmes aimed at sustainable development and those not included into these programmes?

Sample, research method, and procedure

The research has been carried out in the Daugavpils University located in the South-East of Latvia (Latgale region). The research sample consisted of 75 respondents. Among them there were 26 student teachers (14 of them studying in the programs enriched by the principles of ESD), 24 university lecturers (7 of them working in teacher training programs enriched with the principles of ESD) and 25 employers of teachers at schools. The university teachers involved in teacher training programs connected with ESD work also as the researchers at the Institute of Sustainable Education. These scholars not only conduct their research on ESD and create the relevant study programs, but also deliver the key courses (for example, History of Pedagogy, Pedagogy, Educational Psychology, Teaching Methods) for the future teachers. Thus, they have direct contacts with their students and they are well aware of their potential. The employers were the principals of comprehensive schools of Latgale region and their deputies employing the graduates of Daugavpils University's teacher training programs in the beginning of their professional career.

The questionnaire by Grecov and Popova (2005) contains 30 statements, 10 of which refer to the instrumental competences, 10 to the communicative competences, and 10 to the systemic ones. For instance, the statement *The ability to analyze, generalize and evaluate the information* refers to the systemic competences; the statement *The ability to apply knowledge in practice* – to the instrumental competences, and the statement *The ability to establish interpersonal relations* refers to the communicative competences. The content validity of this questionnaire allows measuring the competences described in theoretical works since it contains three the most recognizable general components of professional competences.

To evaluate the competences, the percentage scale was used where the highest ideal level of competences was 100%; a very high level constituted from 80% to 99%; a high level was in the range from 60% to 79%; the medium level was from 40% to 59%; the low level – from 20% to 39%, and a very low level – from 1% to 19%. 100% is the ideal level of competences that can only be achieved acquiring practical professional

experience. Statistical methods of data analysis tolerate using a small number of respondents if it is conditioned by objective circumstances, in this case – the limited number of each peculiar sample group.

All groups of respondents had to evaluate each competence from two points of view. The students were to evaluate their desirable and real levels of professional competences; the University teachers were evaluating the desirable and real levels of their students' competences; the employers had to evaluate the desirable and real level of professional competences of the University graduates who came to work to their school. The employers' evaluation of the real level of competences does not refer to the students who took part in the research, but is a generalization of their working experience with the recent graduates of Daugavpils University teacher training programs.

Results

The results of the research will be presented in the following order. First of all, the desirable and real levels of competences for the students included/not from the programs enriched with ESD principles will be compared. Next, the differences in the evaluation of the desirable and real levels of competences as seen by the students and their teachers included into ESD programs and by the respondents not included into these programs will be considered. Finally, the differences in the evaluation of the desirable and real levels of competences provided by the students and the employers will be in focus.

Numbers 1 to 6 used in the Figures 1-5 designate the following:

1. Desirable level of instrumental competences;
2. Real level of instrumental competences;
3. Desirable level of communicative competences;
4. Real level of communicative competences;
5. Desirable level of systemic competences;
6. Real level of systemic competences.

As the Figure 1 shows, both groups of respondents evaluate the real level of competences lower than the desirable one. With that, all the categories of competences were evaluated higher by the students included into ESD programs than by those not included into them.

Figure 1. Self-evaluation of the desirable/real level of professional competences by the students from ESD programs and those from other programs

The teachers' expectations regarding the students' communicative and systemic competences are higher than the students' own expectations. With it all, the students' expectations also have high values (see Figure 2).

Figure 2. Evaluation of the desirable/real level of professional competences by the students and their teachers from ESD programs

As one can see from the Figure 3, here in all positions (with the exception of students' real mastery level of systemic competences) the teachers' evaluation is higher than that by the students.

Figure 3. Evaluation of the desirable/real level of professional competences by the students and their teachers not included into ESD programs

Figures 4 and 5 will show the differences in evaluation of the desirable and real levels of competences given by the employers and students' self-evaluation.

Figure 4. Evaluation of the desirable/real level of professional competences by the students included into ESD programs and employers

Unlike teachers, employers consider the real level of students' systemic competences as quite sufficient.

Figure 5. Evaluation of the desirable/real level of professional competences by the students not included into ESD programs and by employers

As it is seen from Figure 5, the employers' expectations and evaluation of the real level of competences have higher values than that of students who are not included into ESD programs.

Discussion

Speaking about the specific competences, the real level of instrumental competences is evaluated as the lowest one both by the students included and not included into ESD programs. It is not surprising, as instrumental competences are formed in the practical activities. In the process of training the development of systemic and communicative competences usually is stressed. It should be noted that all the evaluation values of both the desirable and real levels of competences are very high with all students in the sample.

Speaking about the students included and not included into ESD programs, the differences in all the positions for these groups of respondents (with the exception of differences between the desirable development levels of systemic competences) determined with the help of t-criterion are statistically significant at the level of 0.1.

Regarding the comparison of sample groups from ESD programs and other programs, the results presented in Figures 2 and 3 show that there exist differences in the evaluation of the desirable and real levels of competences by the respondents of two groups considered. The University lecturers involved in ESD programs evaluate the desirable level of competences in all cases higher and the real level of competences lower than the students. The evaluation of the lecturers of the second group is either higher or the same as given by the students. It was already mentioned that the evaluation of both the desirable and real levels of all competences is higher with the students included into ESD programs than with the students not included into ESD programs. Apparently, high expectations of teachers in relation to the students facilitate the formation of higher expectations with the students.

Besides, in the group of students and teachers statistically significant differences have been stated in the evaluation of the real level of communicative competences (on the level 0.1) and systemic competences (on the level 0.01).

While comparing the Figure 4 and 5, at first sight, the results received in the comparison of evaluation by students included into ESD programs and employers and by students not included into ESD programs and employers are completely opposite. In the first group, the evaluation of the desirable and real levels of competences is higher with the students than with the employers. In the second group it is the opposite. However, the statistical analysis shows that there are no significant differences in the evaluation of the second group. Thus, it can be said that the evaluation of the desirable and real levels of professional competences does not differ with the employers and the students not included into ESD programs. As to the first group, significant differences (on the level 0.1) have been stated between the evaluation of the real level of instrumental, communicative and systemic competences, as well as between the evaluation of the desirable level of competences.

The given research allows promoting the discussion about the quality of teacher training in Daugavpils University and also in other institutions. As pilot research it provides some realizations which in the future could help to determine the aims of further research, which, in turn, will possibly give rise to discussion of the contents and structure of training for future teachers.

The results show that the evaluation of the desirable and real levels of competences is higher with the students included into ESD programs than with the students not included into ESD programs. This outcome certainly not only gives the answer to one of the research questions, but also generates other questions as well.

Does the higher evaluation of professional competences by students included into ESD programs result from the reality that these programs are more efficient (integrated approach, group methods of training, understanding the social context of the events taking place) than the traditional ones?

What role do higher expectations and larger demands of lecturers included into ESD programs to their students play in this phenomenon?

How do the gender peculiarities influence the described phenomenon (there was only one male in the group of students included into ESD programs while in the second group the proportion between males and females was equal)?

Does the future professional activity influence the evaluation of the desirable and real levels of competences? The group of students included into ESD programs consisted of future preschool and basic school teachers while the second group included future teachers of sports, music and art.

Therefore, as pilot research, this study has some limitations that must be considered as much as possible or referred to as confounding variables while planning further investigation: 1) the number of respondents in all sample groups should be raised, 2) the gender and disciplines taught by future teachers should be equally represented in each sample group of students, 3) the employers should evaluate the professional competences exactly for the students under investigation, etc.

However, even these preliminary results allow us to formulate some groundwork suggestions for teacher training programs mainly focusing on the role of the principles of ESD integrated in teacher training programs in the constructive development of professional competences of future teachers.

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