

Matti Meri

University of Helsinki

Vladimir R. Stanojević

Ivana M. Ćirković-Miladinović

University of Kragujevac

Faculty of Education in Jagodina

УДК: 371.13/.14

ИД БРОЈ: 180274444

Стручни рад

Примљен: 12. јула 2010.

Прихваћен: 11. октобра 2010.

## RESEARCH OF TEACHER COMPETENCES IN FINLAND AND SERBIA WITHIN TEMPUS PROJECT CURRICULUM REFORM IN TEACHER EDUCATION

*Abstract:* This paper starts from the premise that it is impossible to reform the schooling system without changing (reforming) teacher education; the priority project at the Faculty of Education in Jagodina was defined as reforming the curriculum for teacher education. This developmental-scientific project has the deepest sense in integrating and connecting basic education of future teachers and education of experienced teachers into a holistic, functional and coherent system. In cooperation with our colleagues from Finland and Greece, in the form of a TEMPUS EU project, we came to a conclusion that teachers' attitudes bear major significance in the improvement of teacher education curriculum. The support for this premise is found in the facts that teachers themselves are best acquainted with their work conditions; then, they went through the system of education and training for the teaching profession and they are certainly best acquainted with all the (dis)advantages of the programs for teacher education. The research was realized as a part of a Tempus project in cooperation with the partners from Finland and Greece. The instrument for data collecting (attitudes scale) was construed by our colleagues from Finland and the probing research with the purpose of checking metrical characteristics of the instrument was conducted at the University in Helsinki. The instrument was translated and data collecting, i.e. interviewing teachers in Serbia was conducted in the period from December 2007 to March 2008. The research included interviewing primary class teachers of grades 1–4, who completed their education at several universities in Serbia.

*Key words:* teacher competences, reform, schooling system, TEMPUS EU project, teacher education, research.

### INTRODUCTION

The concept *competence* has been one of the most important terms of pedagogical terminology, because in teacher education student teachers should be educated as competent professional teachers. That is why it has been very

interesting to find out what kind of competences there are behind our common questionnaire. What does the term ‘competence’ mean?

It should be noted that in the Anglo-American literature (Eraut 1994: 179–180) two variations of the concept, competence and competency, have occurred. Although inconsistently these two terms are not used as synonyms. Competence has a meaning as a generic or holistic sense and it refers to a person’s overall capacity, competency instead refers to specific capabilities, and usually in a direct performance related sense. Competence is the common ability to perform a specific task, action or function successfully.

Competencies are a signal from the school organization to the individual of the expected areas and levels of performance. They provide the individual with a map or indication of the behaviour that will be valued. Competencies can also be understood to represent the professional language of performance in school, articulating both the expected teaching-studying-learning-process and its outcomes. Competencies are typically used to define the behaviours that a school values and believes will help it achieve its long-term goals. Competencies usually fall into two categories: behavioural and technical. Originally competency frameworks consisted mainly of behavioural elements – an expression of the softer skills involved in effective performance.

Because both concepts are very popular in current discussion of teacher professional discussion and in the field of teacher education, many questions will arise. Is the term of competence a normative or descriptive one? Is the search for competence driven by economic and political factors, which influence the issues of qualifications and new standards in teaching-studying-learning-process? And can one really distinguish this term from other terms like skills in teaching-studying-learning, teacher’s pedagogical knowledge.

Eraut (1994: 160) can help to answer these questions by giving the following descriptions for understanding the concept of competences. One can find out three possible approaches:

1. Traditional recipes orientated approach, which resulted in the pure competency-based teacher education (exactly more teacher training). In that case teacher education is based on very detailed specifications of teacher’s competent behaviour and on long normative lists of specific skills representing the aims of teacher education. Those lists are also used when evaluating teachers’ quality in teaching.
2. Personality approaches, which differ from the previous paradigm in almost every respect. These are centered on overarching qualities, personal characteristics, capabilities, skills which are linked rather to excellent job performance.
3. Cognitive approach which does not equate competence and observable behaviour in a specific educational situation. The distinction made by Chomsky, between competence and performance can hardly be considered irrelevant to the working life. Maybe as Messick (1984) points

out competence refers to what a person knows and can do under ideal circumstances, whereas performance refers to what is actually done under existing circumstances.

It is obvious that usually most existing definitions and classifications of competences combine both approaches, behaviouristic and cognitive. In our research we want to describe the way where the cognitive approach to competence is applied consistently and considered in the light of the concepts related to humanistic pedagogy. And in spite of the fact that we have used the very usual quantitative questionnaire in our data collection which could include in it items where also the teacher professional self in all its domains like cognitive, emotional, ethical and conative ones could be with. The holistic view makes it possible to understand what kind of similarities but also the individual differences one can find out between teachers. Teaching-studying-learning – process in school is a very complicated and changeable process with teacher-student personal encounters in the field of school education rather than only the transmission of knowledge.

Therefore, we have conducted a research and the data will be presented in the paper as the next chapter.

## RESEARCH RATIONALE

The purpose of our research is defined as follows: *examining teachers' attitudes to qualitative features of their work (determining the main components of teachers' work)*. Our main task was to determine the latent structure of qualitative features of teachers' work, starting from the hypothesis that there is more than one such latent dimension which can be used to determine key teachers' competencies.

For this purpose, we have conducted a research in Serbia and in Finland and the results were compared afterwards. The research was supported by the TEMPUS EU project.

The research was realized as a part of a Tempus project in cooperation with the partners from Finland and Greece. The instrument for data collecting (attitudes scale) was construed by our colleagues from Finland and the probing research with the purpose of checking metrical characteristics of the instrument was conducted at the University in Helsinki. The instrument was translated and data collecting, i.e. interviewing teachers in Serbia was conducted in the period from December 2007 to March 2008. The research included interviewing class teachers in primary schools, who completed their education at several universities in Serbia<sup>1</sup>:

---

<sup>1</sup> Teacher education at these universities has a long tradition and includes several stages of development: (1) until 1972 initial teacher education was conducted at secondary teacher training schools (secondary schools); (2) in the period from 1972–1993 teachers were educated at Pedagogy academies (post-secondary schools for lower grades teacher education); (3) since 1993, teachers, i.e. class teachers have been educated at teacher education faculties.

- Faculty of Education in Jagodina (University of Kragujevac)
- Teacher Education Faculty in Uzice (University of Kragujevac)
- Teacher Education Faculty in Vranje (University of Nis)
- Teacher Education Faculty in Belgrade (University of Belgrade).

### **Research subject**

In the process of reforming the curriculum for teacher education, we set *teachers competencies* as the subject of empirical research. The purpose of the empirical research is to be found in collecting data useful for the process of reforming the curriculum for teacher education. The final goal of the entire process of reforming the curriculum for teacher education was oriented towards determining the necessary knowledge and expertise which would enable a teacher to achieve high standards of pedagogic work in an primary school, in accordance with a quicker pace of social changes and the European model of primary education.

Starting from this basis for a research realization, we decided to take into consideration teachers' attitudes on qualitative features of their work in the process of reforming the existing curriculum for teacher education.

### **Sample**

The sample included 484 teachers. Teachers' attitudes on qualitative features of their work are very important from the aspect of determining the key competencies of future teachers, i.e. reforming the curriculum for their initial basic education. The main reasons for such claim lie in the following facts:

- Being the immediate organizers and conductors of education in our schools, teachers are best acquainted with the conditions under which the teaching process takes place. These conditions largely determine the quality of the educational process and its effects (results);
- Teachers are the most immediate link between the curriculum for teacher education, its results and the functions and competencies it produces in the teacher on one hand, and expert knowledge and skills which the demands of modern teaching, i.e. school education presuppose, on the other.
- Teachers in our schools have a significant role in a professional training of our students for the teaching profession, since they are often students' mentors and closest co-workers during their practice and introduction into the professional work (internship).

### **Consideration of the research method**

Immediately after the data were assembled, the code list was designed (a database with coding data in SPSS program), a complete analysis of questionnaires was undertaken (reviewing with the purpose of eliminating those questionnaires

that were illegible or incomplete), questionnaires coding, primary data list forming and data processing. All analyses were done with the program package for statistical data processing SPSS (version 15.0).

### **Research instrument**

In the Finnish data we could find 19 competences which we in the questionnaire labelled in the following way (Meri 2009: 68):

#### *Organisation of teaching-studying-learning –process*

I have learned to set goals for my students and for myself  
I have learned to individualize and to differentiate in my lessons  
I have learned to use coherent and consequent method when teaching  
I have learned to plan my lessons together with my pupils/students and colleagues  
I have learned to plan my lessons in advance

#### *Classroom management*

I have learned the value of nonverbal communication when teaching  
I have learned to use the knowledge and the experiences of my pupils/students when teaching  
I have learned to support all my pupils/students in every circumstances  
I have learned to insist that my pupils/students will follow our common rules  
I have learned to treat my pupils/students in the equal manner

#### *Assessment of teaching-studying-learning –process*

I have learned to know my pupils/students as learners  
I have learned to evaluate and control the achievement and behaviour of my pupils/students

#### *Subject related knowledge*

I have learned to produce and use the learning material of my own

#### *Professional self*

I have learned to separate teacher's role from the role of pupil/student  
I have learned to be sure in the situations where I feel myself uncertainty  
I have learned to be very demanding teacher if needed  
I have learned to show my emotions and feelings when teaching  
I have learned to use my pedagogical authority in teaching

## ANALYSIS AND DISCUSSION OF RESULTS

### Quantitative research results

In order to establish the main components of teachers' work, 214 statements were analyzed in terms of main components. This method, a special case of factor analysis, was meant to enable reducing a large number of variables to a more convenient and analysis-operable number. In other words, our intention was to use a large number of manifestation (measured) variables and the analysis of their correlations in order to get a smaller number of main components which could help determine basic teachers' competencies and reform the curriculum for teachers' education.

In order to determine whether it makes sense to apply main components analysis on the obtained data, we tested the zero hypothesis that the population matrix of inter-correlation equals identity matrix ( $H_0: P=I$ ). We used KMO test (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) and Bartlett Test of Sphericity as a measure of representativity of measured variables for the variables related to the given area.

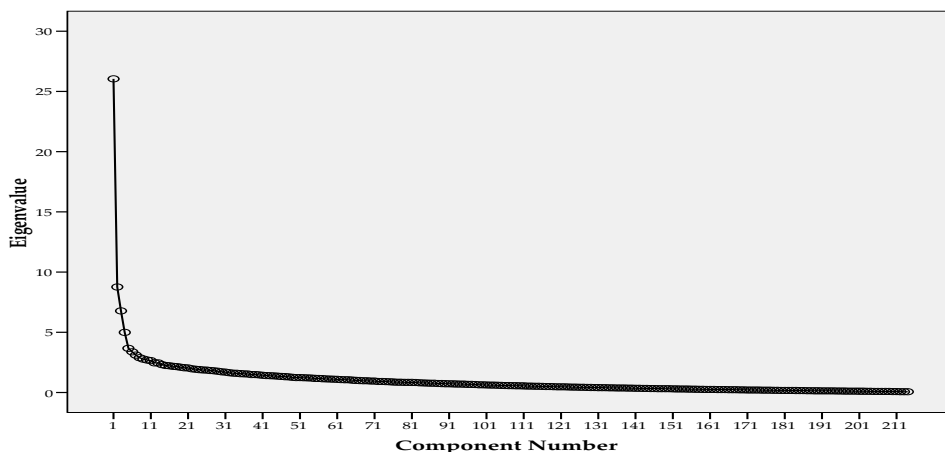
Table 12. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.782
Bartlett's Test of Sphericity	Approx. Chi-Square	43063.746
	df	22791
	Sig.	0.000

Since the data from Table 12 point that the Significance is less than 0.05, we reject the zero hypothesis that the population matrix of inter-correlation equals identity matrix, which means that the analysis of the main components is justified and sensible. Furthermore, high score on the KMO test ( $=0.782$ ) means that our data are appropriate for the analysis, i.e. the representativity is satisfactory.

We used the Cattell scree test and the Guttman-Kaiser criterion to determine a number of important components. Since there was a large number of items, graphic analysis by the Cattell scree test with scater diagrams of specific values was not found to be very useful for precise determining of the 'breaking' point, so we decided to use the Guttman-Kaiser criterion.

Cattell scree test



Using the Guttman-Kaiser strategy, 65 main components were kept, describing 71.20% of total variant. However, broadly considered, there is a large number of the main components variant that have a minor participation in the total variability<sup>2</sup>. Namely, a large number of variables with the factor correlation above 0.2 additionally complicated and hindered clear data interpretation. Therefore, we decided to undertake a factor analysis on 214 questionnaire items, expecting to readjust this situation with the table of rotation factors.

Factor extraction was done using the Principal axis factoring technique, with orthogonal (Varimax normalized) factor rotation. Considering a large number of items, linear correlation quotients for each measured variable and main components and the distribution of the correlation matrix of individual items and main components, and especially paying attention to clarity and comprehensibility of the data, it was decided to reduce the number of factors in the process of extraction to five:

1. The first factor has a very complex structure and is mainly defined by the items related to kindness and good manners, trust and respect for the students, showing interest, democratic behavior towards students, trust in students' potentials, paying attention to students' needs, respect for students' opinions, encouragement, the ability to establish and maintain contact and communication, the ability to cooperate with students, teacher's readiness to adjust his/her behavior with students' behaviour as well as to teaching and learning process characteristics. Such structure of this latent dimension allows this factor to be interpreted as **organizational-communicative teachers' competence**.

<sup>2</sup> the first component covers about 12%, the second about 4%, the third about 3%, the fourth something above 2% of the variance of all measured variables, i.e. all the items in the questionnaire. The fifth to eighteenth components' participation is from 1–2%, and the participation of the rest is below 1%.

2. The second factor is defined by a smaller number of manifestation variables related to the role the teacher plays in the teaching process and his/her knowledge of the profession and a teaching discipline. Accordingly, the second latent dimension may be called the teaching competence, i.e. **teaching-organizational** teachers' competence.
3. The third factor has a relatively simple structure, dominated by the statements related to specific human qualities of teachers, connected with maintaining good interactions with students with the aims of promoting students' intellectual freedom, developing responsibility and self-reliant decision-making. This factor reflects interest for students and is defined as **openness towards students**.
4. The fourth factor is concerned with the teacher-student relationship and has a more significant correlation with the items related to the lack of trust towards students, strictness, rigidity and too much initiative and one-sidedness in communication with students on teacher's part. This teacher-student relationship represents a reaction of teacher's imposition in the situations when the working atmosphere is contaminated and when the effects (results) of education are jeopardized. All of this leads to a conclusion that there is a certain form of contaminated teacher-student relationship, which points towards problems in teaching caused by the poor results of educational work and teacher's tendency to take responsibility for students' education achievements. A linear combination of such manifestation variables was called the **authoritarian factor**.
5. The fifth factor is defined by the teacher-student relationship characterized by both teachers' and students' rights to personal integrity. Based on manifestation variables, this factor was defined as **the respect for student's personality**.

Determining professional competencies, which are, according to the opinions of experienced teachers, very important for their work has a scientific, theoretical, practical and applicable importance for overall preparation of students to become teachers. Obtained results point out important teachers' competencies, especially in the area of organizational-communicative, pedagogic-psychological and didactic-methodological knowledge and skills. These latent factors of teachers' work quality need to be important factors in the process of profiling the curriculum for teachers' education. Curriculum reforming has to emphasize the group of scientific-expert and expert-applicable study subjects, both from the point of view of projected study disciplines and working hours intended for each course, and from the point of view of program contents and activities which will enable obtaining expert knowledge and professional skills of future teachers.



Complex structures of individual factors of qualitative characteristics of teachers' work point out that study subjects of a new curriculum need to be mutually connected and conditioned. In other words, a structure of the reformed curriculum must be based on the theory of future teachers' integral development.

### **Qualitative research results**

It is obvious that all student teachers are rarely able to know all of these areas of teacher's behaviour after teacher education. During their working life and with experiences they can develop their knowledge of teaching-studying-learning process. Cochran-Smith and Lytle (2004) have nicely identified three conceptions of knowledge in teacher learning process: knowledge-for-practice, knowledge-in-practice and knowledge-of-practice. The first refers to general theories and research-based findings. This knowledge is produced primarily by university researchers, but also by teacher students themselves, when they are writing their master thesis. This kind of knowledge has an implicit image of teachers using a formal knowledge base in daily classroom work.

Because knowledge based on theory is a keystone for good and successful teaching process one should consider how important it is to include competence areas above to the teacher education programs. What do we know of effective teachings methods? What does planning together with pupils/students and colleagues really mean? What kind of theories are there for self evaluation? What does a modern role of a teacher mean? And role confusion? Maybe there are enough theory and research results to answer those questions. But are those findings really also a part of a teacher education program?

Mostly the teacher education programs are full of dealing with practical questions. There is an expert who tells the correct way to behave and as Cochran-Smith and Lytle (1999: 250) declare: "we assume that teacher students learn then they have opportunities to probe the knowledge embedded in the work of expert teachers and to deepen their own knowledge and expertise as makers of wise judgments and designers of rich learning interactions in the classroom." But can one learn to evaluate his/her own teaching process with this kind of approach?

The conception knowledge-of-practice can be understood so that "teachers learn when they generate local knowledge of practice by working within the contexts of inquiry communities to theorize and construct their own work and to connect it to social, cultural and political issues. The researcher uses the concept inquire as stance to describe the positions teacher and others who work together in research communities take toward knowledge and its relationships to practice.

When reading the list of knowledge of Cochran-Smith and Lytle (1999) as basic knowledge for teaching-process and comparing it with core competences needed in this process, one should add one more area. Day and Sachs (2004: 9) speak of knowledge of self, which they define as knowledge generated by teachers

engaging regularly in reflection in, on and about their values, purposes, emotions and relationships.

About 100,000 teachers, secondary school teachers and other experts who work in schools (pedagogues, psychologists, sociologists, defectologists, librarians) and directly create the educational and learning process and contribute to its quality represent the most important available resource of the educational system in Serbia. Basic general factors that determine the quality of education are teachers, their education, quality and motivation. However, being a teacher involves a number of difficulties:

- A teacher is often forced to work with a large number of students under rather inconvenient conditions, which is accompanied by a rather inadequate material compensation. Material and social position of teachers is rather disproportionate, changeable and insecure. The direct consequence of the above mentioned is that there is often an inadequate (negative) selection of candidates for teachers' posts. The far-reaching consequence of such a state is that the basic factors contributing to the quality of the learning process, successfulness of schools and students' achievements are blocked.
- The existing pedagogy theory in Serbia is teacher-oriented. It determines teacher's role, as well as types of teaching, whereas it provides only marginal descriptions of learner's role and types of learning.
- Pedagogy theory and teaching practice are focused on the teaching program and its contents in such a way that the issues related to the learning process are rarely mentioned and the problems of the achievement in the learning process are even more marginalized. The quickest way to conduct the existing overloaded programs is to use exclusively verbal presentation of their contents.

Besides the above mentioned problems, there is also a dominant role of the teaching methods with a long tradition in Serbian schools, as shown by many research projects of the schooling system in Serbia. There are, however, some examples of significant divergence from traditional teaching methods. This divergence is in the direction towards learner-oriented methods, fundamentally interactive and participatory. Such modern approaches are most commonly found in teaching primary grades 1–4 because teachers of these grades are trained to consider the learner in the teaching (learning) process more than is the case in the higher grades teaching. These types of approach are also commonly found in music, art and foreign languages teaching. The most conspicuous example of such an approach is found in English language teaching conducted by teachers who were trained or partially trained abroad.

About fifteen years ago, several pilot-projects were started related to the introduction of participatory and active methods of teaching/learning. Most of these projects were financed by UNICEF, the most important being the project of *Active*

*learning and teaching* (AUN/ALT) conducted by the experts from the Institute of Psychology, University of Belgrade. Among several other projects worth mentioning are the ones dealing with additional activities, such as conflict resolving, constructive communication, education for peace, tolerance and children's rights, namely *The Classroom of Good Faith, Mutual Education, Language of Giraffes, Primer of Children's Rights*.

## CONCLUSION

Previously mentioned changes are necessary for a society that undergoes transition, such as the one in Serbia, when the educational concept is changed and the position and role of a teacher in the educational process are fundamentally different. Although such changes represent important steps in the right direction, they are the reflection of personal strivings and not of the real interest on the part of teachers and as such they are insufficient, partial and only partially effective.

## REFERENCES

Cochran-Smith, M., & Lytle, S. (1999): *Relationships of knowledge and practice: Teacher learning in community*. In the series, *Review of Research in Education*, 24, 249–305. Washington, DC: American Educational Research Association.

Day, C., & Sachs, J. M. (2004): *Professionalism, performativity and empowerment: Discourses in the politics, policies and purposes of continuing professional development*. In C. Day & J. M. Sachs (Eds.), *International Handbook for Continuing Professional Development* (pp. 3–63). Maidenhead, New York: Open University Press.

Eraut, M. (1994): *Developing Professional Knowledge and Competence*. London: Falmer Press.

Hebib, E. (1996): *Uloga pedagoga u vrednovanju rada nastavnika*, Beograd: Institut za pedagogiju i andragogiju

Messick., S. (1999): *Assessment in higher Education. Issues of Access, Quality, Student Development and Policy*. Mahwah (NY): Lawrence Erlbaum Associates Publishers.

Meri, M. (2009): *Humboltilaista sivistysihannetta jäljittämässä*. In Asikainen, T. P. et al. *Educator 1 /2009*. Helsinki: Soveltavan kasvatustieteen laitoksen julkaisuja.

*Sveobuhvatna analiza sistema osnovnog obrazovanja u SRJ*, UNICEF Beograd, 2001.

Trnavac, N. i Đorđević, J. (2002): *Pedagogija*, Beograd: IP ‘‘Naučna knjiga nova’’

Мати Мери  
Универзитет у Хелсинкију  
Владимир Станојевић  
Ивана Ћирковић  
Педагошки факултет у Јагодина

## ПРЕЗЕНТАЦИЈА РЕЗУЛТАТА ИСТРАЖИВАЊА У ОКВИРУ ТЕМПУС ПРОЈЕКТА *CURRICULUM REFORM IN TEACHER EDUCATION*

*Резиме:* Полазећи од става да реформу система школства није могуће реализовати без промена (реформе) у образовању наставника, на Педагошком факултету у Јагодина смо као приоритетни пројекат дефинисали реформу курикулума за образовање наставника. Овај пројекат развојно-научног карактера свој најдубљи смисао проналази у интегрисању и повезивању базичног образовања будућих наставника и стручног усавршавања наставника са дугогодишњим искуством у један целовит, функционалан и кохерентан систем. Кроз сарадњу са нашим колегама из Финске и Грчке, а у форми Темпус програма Европске Уније, закључили смо да су ставови наставника од великог значаја за унапређивање и побољшање курикулума за образовање наставника. Велики значај ставова наставника смо пре свега пронашли у чињеницама да наставници најбоље познају срединске факторе односно услове рада, да су сами прошли систем обучавања и припремања за наставнички позив и да су свакако најбољи познаваоци свих предности и недостатака програма њиховог стручног усавршавања. Истраживање је реализовано у оквиру Темпус пројекта кроз сарадњу са партнерима из Финске и Грчке. Инструмент за прикупљање података (скала ставова) је конструисан од стране наших колега из Финске а сондажно истраживање, ради провере метријских карактеристика инструмента, спроведено је на Универзитету у Хелсинкију. Инструмент је преведен а прикупљање података, односно анкетаирање наставника у Србији спроведено је у периоду од децембра 2007. године до марта 2008. године. Истраживање је обухватило анкетаирање наставника разредне наставе који су своје базично образовање за наставнички позив стекли на различитим високошколским установама у Србији.

*Кључне речи:* компетенције наставника, школски систем, ТЕМПУС пројекат, обтазовање наставника, истраживање.