Chapter II

COMPLEXITY OF THE PRIMARY SCHOOL TEACHERS’ PROFESSIONAL TRAINING FOR CONTEMPORARY TEACHING

Veljko R. Bandur*
Teacher Education Faculty of University of Belgrade, Serbia

Sanja R. Blagdanić
Teacher Education Faculty of University of Belgrade, Serbia

Aleksandar M. Stojanović
Teacher Education Faculty of University of Belgrade, Serbia

Abstract: Given that being a primary school teacher implies a very complex area of activity, the competences needed for this profession are multi-dimensional – subject-specific, pedagogical, organisational, and communication-reflective. These competences are developed primarily through initial education at teacher education/pedagogical faculties and later on, throughout primary school teachers’ careers. Gaining insight into the quality of their own educational impact on pupils is of particular importance for primary school teachers because such insights increase the level of their self-criticism and self-expectations (reflective competences).

The aim of the current research presented in this paper was to examine both reflective and research competences of primary school teachers, i.e., to determine whether and to what extent primary school teachers view research and reflection as important elements of teaching competences and teaching itself. The current research was conducted on a sample of 87 primary school teachers. The obtained data indicate that the respondents have not fully developed their research competences and the competences needed for reflective evaluation of their own practice, neither during their preparation for the calling of a teacher, nor in the course of their professional career. Such results call for a substantial change of the modes of work at our institutions of higher education in terms of more intensive interactions, research work, mentoring, teamwork, student cooperation, and project work. The knowledge acquired at core academic courses should enable pre-service primary school teachers to create their own theoretical foundation from an array of theories offered at university (provided that

1 The text is the result of the work on the project “Pedagogical pluralism as the basis of the education strategy”, no. 179036 (2011–2019), whose realization is financed by the Ministry of Science and Technological Development of the Republic of Serbia.

*E-mail: veljko.bandjur@uf.bg.ac.rs
their attitude towards knowledge and information is pro-active and critical) and turn scientific findings into practice.

**Keywords:** primary school teachers’ competences, contemporary teaching, constructivist didactics, teacher education.

### Introduction

The "learning society" is aimed at training young people to solve problems successfully at times marked by uncertainty and unpredictability. The emergence and development of theoretical pluralism, especially the constructivist metatheory and developmental-humanistic orientation in pedagogy, led to a changed concept of man, a different approach to development and education of human potential, in other words, to the consideration of the concept and scope of lifelong learning. The key competence of modern education, expressed in the phrase "lifelong learning competences" is no longer considered as merely caring for professional competences, but also as a desirable level of general culture of all employees, teachers included (Fichten, 2010). Teacher competences are defined in the European Framework of Competences within a wider framework – subject-specific, pedagogical, organisational, and communication-reflective competences (Klaassen, 1994). They include a set of necessary knowledge, skills, and values of all stakeholders in schools. They are determined relative to the goals and outcomes of learning and are meant to provide professional standards of what is considered successful in the pedagogical process (Andevski & Arsenijević, 2012: 31).

A successful educational practice in contemporary schools requires committed and entrepreneurial, reflective teachers – practitioners with an in-depth and broad knowledge, skills, and clearly set views and competences, as well as an understanding of the practice they are an integral part of. In order to understand and improve their work at school, teachers must first understand themselves, their own motivations, attitudes, and behaviour and take an active role in constructing their knowledge. The relevant documents, both those created by the European Commission and those created in Serbia, direct teachers towards self-assessment and personal orientation in terms of planning their own professional development in the process of lifelong learning, research approach, problem-solving orientation, monitoring and evaluation of their work (ZUOV, 2011; Jevtić, 2011).

Apart from its other effects, the constructivist-didactic paradigm influenced changes in the concept of tertiary-level didactics and methodology, even more so as there were numerous reasons indicating the need for a better quality of the pre-service primary school teachers’ education and a broader spectrum of their competences (Gojkov, Stojanović, 2015). Teacher competences are multi-dimensional because they refer to a broader field and a complex area
(Radović & Maričić, 2013). The basic dimensions of these competences relate to pedagogical and professional aspects that are unified, allowing primary school teachers to respond to the demands of the contemporary trends in education and teaching. The communicative competence is a predominating one in the pedagogical aspect, with a clearly expressed content and relational competence (Spitzberg & Cupach, 1984). The pedagogical dimension of the primary school teachers’ competences becomes clearer only in the light of interaction in the learning process, which implies a two-way communication and dialogue, intensive interaction, and cooperation. Mastering the profession, scientific disciplines, and pedagogical methodology is the necessary prerequisite of the primary school teachers’ competences, but it is not the only one. Human qualities, knowledge, abilities and skills related to processes and interpersonal relationships in teaching and education are also crucial. Good quality processes and relationships in teaching help pupils to grow into creative and accomplished people, while giving teachers an opportunity to be authentic and integrated personalities who, through joint work, teaching and other activities, stimulate and prepare pupils for creative work that will help them enrich not only their knowledge, but also their overall personality, giving learning and life a higher meaning (Spitzberg & Cupach, op.cit.).

In addition to the well-known factors of a successful communication (motivation, praise, rewards...), the personality of a primary school teacher is a factor which encourages pupils to be creative and to realise their full potential, it alleviates anxiety and creates a motivating and intellectual atmosphere in the classroom (Gojkov, 2006). Primary school teachers must be professionally qualified and moral persons who will by means of personal example and their competences influence the moral development of their pupils. The repertoire of teachers’ social competences also includes interpersonal skills (positive attitude towards others, empathy, participation, social skills, offering support), socially responsible behaviour (observing rules, awareness of the effects of one’s own behaviour on other people), social independence, behaviour control (frustration tolerance, compromising in conflict situations), social cooperation, assertive social skills (initiating communication, undertaking leadership in activities) (Jevtić, 2011). Many authors single out empathy as the key factor of the pedagogical dimension of the primary school teachers’ competence (Goleman, 1997). Nowadays, even the educational style is explained by the ways of intelectual and emotional communication, or as an interaction of didactic and educational competences by which teachers create a social-emotional climate in the classroom (Kostović, 2005). Using Allport’s terminology for behavioural styles, the “adaptive aspect” of the educational style (what a teacher does) is manifested by means of didactic competences (managing, organisation of activities, communication, and affective atmosphere), whereas the “expressive aspect” (how a teacher does something) is manifested by means of educational
competences: authoritarian or democratic (managerial style), direct or indirect (communication style), normative or problem-solving oriented (teaching style), positive or negative emotional tone (affective style) (Kostović, 2005). The intercultural competence of primary school teachers is manifested in specific emotional and cognitive abilities – flexible behaviour and communication, empathy and motivation for adaptation, and acceptance of different points of view (Hrvatić, 2007).

The question of the contribution of research learning to pre-service primary school teachers’ competences in the course of their university studies entails an examination of the relationship between the research-oriented teaching and learning and the systematic, disciplined learning oriented towards the acquisition of knowledge that university studies should also support. The didactic concept of research learning in higher education, aimed at combining students’ research activities with university lectures, was developed at German and European universities and it was based on Humbolt’s idea that research learning results in valuable and fruitful communication and critical thinking, while the transfer of new scientific findings adds quality to university lectures (Huber, 1998). The combination of students’ research activities and lectures, science and learning, and the concept arising from it – scientific learning – can be explained by this idea. The postulate “education through science” implies that the basis of the transferred knowledge that students should acquire does not constitute education in science, but that an educational moment is manifested in scientific features, supported by search and discovery, problematisation and wonder (Huber, 2003).

The conceptions of reflective education of teachers (Dick, 1994), in which reflection and professional practice research are integrated in academic education, are based on the following requirements: (1) The education of the pre-service primary school teachers should allow them to identify and articulate their goals, to choose acceptable means of reaching these goals and to comprehend the contextual criteria in teaching. Pedagogical action implies that there is more than one correct course of action. Primary school teachers’ professional activities and research demonstrate mutually corresponding structures, based on which the competences for the later professional work may be formed through “didactic formation of learning“ (Wildt, 2005). (2) The quality and efficiency of teachers’ education depend, among other things, on “the balance struck between professional practice and science“ (Fried, 1998). Therefore, teachers’ education should mediate theory and practice, and spur the integration of scientific knowledge and practice. Transferred theoretical knowledge should result in action where knowledge, serving as a guide in practice, is formed during reflection on the previous experience (Fichten, 2010). (3) Professional discussions have resulted in a teacher being seen as a professional, the one who builds a research-oriented attitude throughout his/her studies, and who generalises...
knowledge through practice (Schneider & Wildt, 2003). Reflective competence is an important aspect of this interpretation of professionalism (Dirks, 2002; Feindt & Meyer, 2000b; Horstkemper, 2003; in: Fichten, 2010). Students should learn to view teaching as an experiment and an act of research.

Learning through research is therefore a contemporary concept which aids the formation of a research-focused attitude and improves it, while also including reflection, a necessity in overcoming schooling and teaching reality and enabling further professional advancement. Reflection must be scientifically based if it is to be self-critical (Zutavern, 2001; in: Fichten, 2010). The consideration of the research-based approach during one’s studies fits in with contemporary discourse on teacher competence, which views primary school teachers as reflective practitioners. The competences of a present-day, efficient primary school teacher require a professional who conducts research, rather than a professional technician (Fichten, 2010).

**Methodology**

The reflective and research abilities of primary school teachers were the topics of the research. The research goal was to establish how capable teachers are for reflection with regard to their practice. The starting point was to determine the representation of learning through research in the education of the pre-service primary school teachers, given that it is an innovative approach to higher education learning which greatly influences the development of professional competences.

With that in mind, the research tasks focused on the following questions: how important for teachers is the role of research and reflection in the complex teacher competences and their own practice? In the wider research, the results of which are presented in this paper, the current researchers observed how much the competences required for reflection on one’s own practice are developed during teacher education (reflective competence, the competence for teamwork, problem solving, research-methodological competence, advice-giving competence and interpretation competence).

The key hypothesis was that teachers do not consider reflection to be a key competence vital to their practice. The narrow assumptions were that during their studies, they do not acquire enough knowledge in a way which would develop reflection, ensure critical thinking and the need to reflect on one’s own practice, as well as that higher education institutions devote little time to learning through research, where special attention should be given to critical thinking.

The research was exploratory in nature, using a systematic non-experimental observation method. A questionnaire was used, designed for the research,
which aimed to gauge the following: teachers’ opinions on the importance of theoretical approaches for their practice; their opinion on theory as support and an opportunity for critical thinking about their own practice; in what ways teachers acquire methodological knowledge and what importance they give to it compared to other competences, especially in regard to the improvement of their own work. The intent of the researchers was to gain insight into the use of critical thinking as a way of acquiring knowledge during university studies, as an act of learning included in explorative tasks and methodological actions during the learning process.

The sample comprised 87 primary school teachers who graduated from a teacher education/pedagogical faculty. Out of this number, 43.6% were teachers with 10 to 20 years of work experience, representing the largest group in the sample. Experimental checks were not conducted, and statistical analyses were conducted using the SPSS statistical package: descriptive analyses, linear regression analyses, the stepwise method, non-linear and linear canonical correlation analyses, factor analysis conducted using the categorical principal components analysis method, hierarchical clustering and between-groups linkage. This paper will present the findings of the descriptive and cluster analyses. The research was conducted in 2016.

Results and Discussion

Teachers’ Opinions on Research Competence and Researching One’s Own Practice

Based on the answers provided, it is clear that a majority of the teachers (67.7%) sees organising educational activities, knowledge transfer and monitoring children’s development as the most important competence in their profession, followed by: creativity, coping, flexibility (59.4%); professional development 44.6%, all competences (38.8%); attitude towards educational goals (35.7%). Research competence is considered important by a mere 27.2% of respondents. Although this points to a lack of recognition of the importance of teachers’ research competence, it is encouraging to note that nearly four-fifths of respondents (78.2%) feel the need to acquire more knowledge regarding the methodology of pedagogical research.

The opinion of respondents regarding conducting research independently in their own practice is distributed in the following way: good idea (32.4%); this is for younger colleagues (21.3%); not possible – too busy (18.1%); not possible – too many pupils in groups (14.6%); yes, with an expert aid (10.5%); I attend seminars and read professional journals, which is enough (9.7%); I do research when working with children (8.8%); there were no opportunities for research (6.5%); work through self-evaluation (6.1%). The data shows that the largest group of respondents (32.4%) considers independent research to be a good
idea. The analysis of the inclusion of respondents in research demonstrates that a majority (54.6%) has not been involved in any research up to now. Given this, it is not surprising that teachers do not use in-class research for reflecting on their own practice. In other words, they evaluate their work using one of the following criteria: feedback on pupils’ further education, self-evaluation, information provided by parents and children’s success, analysis based on principles and curricular tasks, competition results, pupils’ plays, experimental activities, or evaluation from others (associates, or external evaluation).

The data show beyond doubt that respondents do not recognize the importance of knowledge of pedagogical methodology, but that they are somewhat aware of the importance of developing research competences, even though these are not on their priority list. They believe that their practice leads to the development of teachers’ competences. However, this practice clearly lacks methodological activities, leading to the conclusion that their practice is not oriented towards them. Only a small percentage of teachers have experience with research, they believe that they have inadequate conditions for conducting research, and that they did not have opportunities for research.

Primary School Teachers’ Opinions on the Importance of Reflective Competence

To test the primary hypothesis, a hierarchical cluster analysis of all variables was conducted using the between-group linkage. As a unit of distance between clusters, a quadric sum of Euclidian distance was used. The analysis was conducted in 67 stages. For example, in the first stage, the variables of the subject-specific competence and communication skills were joined into one cluster. Furthermore, the category of the most important teachers’ competences

---

2 List of cluster analysis variables: 1. Years of work experience in education.
Importance of pedagogical theoretical approaches for formation of pedagogical views: 2. Pedagogical theoretical approaches are important for practice; 3. Pedagogical theoretical approaches are important, but experience is more important; 4. Pedagogical theoretical approaches are an important segment of knowledge acquisition; 5. Pedagogical theoretical approaches are not important, practice is what matters.
How much does pedagogical practice prepare you for work: 6. Pedagogical practice does not prepare you for work; 7. Pedagogical practice should last longer; 8. A good mentor is important; 9. Practice does prepare one for work; 10. Practice helps in gaining experience; 11. Practice helps in forming one’s personal pedagogical views; 12. Practice enables the formation of a life-long attitude towards children; 13. Practice is important for the application of theoretical knowledge; 14. The practice is too short to enable full preparedness for work; 15. Students do not take practice seriously; 16. The number of students interested in practice is low; 17. The value of practice is finding meaning in theory; 18. Practice does not prepare one fully, because students do not work alone; 19. The value of theory or practice in training employees in education 20. The evaluation of the representation of research tasks during studies; 21. The evaluation of the opportunities for the development of research concepts during studies.
The need to provide students with more opportunities to acquire knowledge of the methodology of pedagogical research: 22. Good idea; 23. Future teachers should have more opportunities to acquire methodological knowledge through research; 24. Extremely useful for developing a critical stance towards work; 25. Unnecessary; 26. More knowledge on the methodology of pedagogical research is needed; 27. Ideas are reconsidered.
Methods used for acquiring knowledge of the methodology of pedagogical research during their undergraduate...
does not include those which would encompass reflective competence, which confirms the hypothesis on an inadequate methodological competence of practitioners, as well as that reflection is not considered to be a part of practice. Our observation of the remaining clusters only further confirms this.

Distance between clusters rescaled

Figure 1: Dendrogram

studies: 28. Participation in professors' research with minimal accountability or activity, 29. Active inclusion in school projects with a partial responsibility, 30. Doing independent research with consultations with teachers; 31. The methods used to acquire the knowledge of the methodology of pedagogical research are important for one's practice.

Competences developed through pedagogical practice while in training: 32. Acquisition of subject-specific competences; 33. Acquisition of communication skills; 34. Organisational and pedagogical-didactic competences; 35. A different view on self development.

The most important competences of a primary school teacher: 36. All competences; 37. Creativity, resourcefulness, flexibility; 38. Leading activities, knowledge transfer, tracking children's development; 39. Professional development; 40. Attitudes towards educational goals.


Opinions on independently conducted research: 51. It is meant for younger colleagues; 52. Good idea; 53. Not possible due to oversized groups; 54. Conducted through self-evaluation at school; 55. Good, with an expert aid; 56. Not possible – too busy; 57. There were no opportunities for doing research; 58. I attend seminars and read professional journals; 59. Every researcher researches when working with children; 60. Included in research since the start of practice.

Methods of evaluating one's own work: 61. Analysis based on teaching principles and curricular objectives; 62. Information provided by parents and children's success; 63. Self-evaluation; 64. Others evaluate me, 64. Questionnaire for parents; 66. Feedback on pupils' further education; 67. Through competitions, plays, experimental activities; 68. University/college degree.
The findings indicate that teachers who participated in the research do not attribute special importance to reflection, which confirms the key hypothesis. Another possible interpretation is that reflection is not taken into account enough when evaluating the quality of work. Furthermore, the findings give room for speculations about the extent of developing the pre-service teachers’ competences that should enable them to reflect on their own work (reflexivity, team work competence, problem-solving competence, research-methodological competence). The research results also question the level of efficacy of tertiary education didactics in overcoming the dominant receptive forms of teaching and learning, as well as the level of the pre-service teachers’ preparedness through research learning for using theoretical knowledge in analysing and creating their future professional environment as reflective practitioners. According to the results, the methodological-didactic academic courses do not focus enough on the development of the competences related to the reflexivity of the professional knowledge, i.e., the adoption of the research-oriented attitudes as an element of professional work. Given that the respondents rarely learnt through research in the course of their university studies, that they were not included in research projects, nor did they conduct any small-scale research, it is not surprising that they favour experience over other competences. Generally speaking, they acquired methodological knowledge by means of experiential learning. In their opinion, reflecting upon their practice is good for planning everyday work, but it is more useful for younger colleagues and the colleagues who have more time available, who work with smaller groups, and so on. The conclusion is that the primary school teachers who participated in this research are not fully trained to be able to reflect on their work, and they had few opportunities to use research learning in the course of their studies. They believe that learning through research should be included in the compulsory course content and that research should be a necessary element of complex competences.

Critical learning, as a part of the European Qualifications Framework, should be given more space and attention in the current system of university training of pre-service primary school teachers. It seems that university courses organised in line with Bologna process should focus more on the concept of competences in terms of taking into account not only the knowledge, but also the complex abilities that students expect to develop and the work market requires, but that cannot be developed solely through training. This observation is not a new one, as Humbolt’s tradition of university studies implies competence-oriented learning that requires, apart from professional training, the development of intellectual and methodological abilities. The only novelty is the term “competence” which calls for a more intense didactical approach to academic learning.
According to the research findings, primary school teachers are not fully-developed reflective practitioners and they generally hold that university studies should provide them with practical skills which they can apply later on in their career. University courses should be more oriented towards science because it is focused on competences that students develop by doing research and analysing the findings. If education is to be a significant factor in the development of the society, students as its main actors are expected to possess the competences related to critical thinking, original ideas, ability to make decisions based on incomplete or limited information. Therefore, primary school teachers must possess scientific competence which, apart from abilities and methods needed for pedagogical research, requires the ability to conduct a critical analysis, as well as to evaluate and synthesise new and complex ideas and theories. Students, particularly the ones who already work as teachers, should have a wide, detailed, and critical understanding of the latest trends in pedagogy and didactics, they should be included in the research of theoretical concepts and approaches in educational practice, and they should be able to make conclusions and give feedback to educational policy by using their own reasoning and critical understanding.

Conclusion

Professional competences of the pre-service primary school teachers are complex and their development should be approached holistically. These competences encompass different areas of knowledge and skills used in the teachers’ work. For this reason, primary school teachers have to develop their competences by researching, testing, evaluating and constantly innovating their own practice. The changes in didactical orientations, trends and models of contemporary teaching require appropriate innovations in the domain of teacher training. Apart from general education academic courses related to the teachers’ profession, primary teacher training curricula should predominantly contain pedagogical-psychological and methodological courses, as well as professional practice programmes.

Reflective primary school teachers as professionals must be confident of their research skills and be able to conduct small-scale research in order to test and evaluate the efficacy of new ideas in the classroom. Such teachers will not simply adopt didactic models offered in the relevant literature, but will continue searching for answers and then they will decide if the ideas are worth testing in the classroom with necessary adaptations and, eventually, if they should be adopted. In order to do all this, teachers must be familiar with research work and critical thinking strategies. The proactive feature of a reflective teacher is the basis of professional competences that help teachers to realise that problems encountered in their work are a part of a complex process of teaching and learning.
Accordingly, higher-education didactics should overcome the dominant receptive forms of teaching and learning. The Committees of the European Union engaged in discussion regarding these issues have reached the conclusion (Terhart, 2000) that it is necessary for teachers to be trained via research learning (Hamburg Committee, Keuffer & Oelkers, 2001) and critical learning to be able to act as reflective practitioners who test theoretical assumptions and adapt them to their own environment.

This surely implies the ability of reflective professional knowledge (the adoption of a research-oriented attitude) as a part of one's professional activities acquired at methodological-didactic academic courses. Research learning should therefore be incorporated in the compulsory curricula, becoming a necessary element of the complex competences required for modern teaching.

Habituating pre-service primary school teachers to think critically and discuss is important because pedagogical action implies that any given situation does not have only one correct course of action, but at least several, which can all be differently theoretically verified. An important reason for using heuristic didactic strategies in higher education teaching is the fact that critical thinking today is considered to be a meta-competence giving meaning and direction to specific competences.

Training pre-service primary school teachers at teacher education/pedagogical faculties implies the development of their meta-competences, so that they may choose appropriate didactic-methodological solutions when working with pupils. It is important for professors – mentors to teach their students to view their classes as experiments and research actions.

The main reason for the use of heuristic-didactic strategies at teacher education faculties is to encourage pre-service primary school teachers to learn through research and discovery, and they will in turn understand the need to influence their future pupils in the same way.

Through discussions, workshops and research papers, pre-service primary school teachers can successfully be trained in the following: self-responsible learning, systematic, independent and critical work, creative thinking, the practical application of knowledge, innovation, flexibility, controlling change, accepting the plurality of ideas, tolerating independence in a cognitive sense and developing initiative in a conative sense, readiness to take risks, and self-reflection.

The development of teachers’ multidimensional competences (pedagogical, social, emotional, cognitive, work-action, etc.) is a prerequisite for an effective contemporary teaching in which pupils will develop the skills of analytical thinking, knowledge acquisition, problem and conflict solving, teamwork and participation, fast identification and use of information, decision-making, evaluation, reflection, self-initiative, tolerance, and life-long learning.
References


