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The Use of the Internet Sources in the Professional Development of Preschool Teachers

Predrag Prtljaga[1] and Zoran Savić[2]
[1]*Mihailo Palov Preschool Teacher Training College*
[2]*Faculty of Management – FAM, Nikola Tesla University UNION*

Abstract

In the first part of the paper, the importance of preschool education in modern society is considered with regard to the principles of contemporary education, pointing to the need for the professional development of preschool teachers, so that they are capable of reaching the expected stan
dards. The paper further focuses on the competences and developed reflections of preschool teachers, as well as on the need to create conditions for preschool teachers to shift from the analogue to the digital educational world through ICT trainings, which should lead to the use of adequate Internet sources. The empirical part deals with the answer to the question regarding the extent to which preschool teachers use electronic sources in their professional work as compared to conventional sources, their prior experience and the existing documentation. According to the main research findings, regardless of their gender, work experience or level of education, the preschool teachers use the Internet sources less than other conventional sources in order to improve the quality of their work. On the other hand, certain differences were found between them considering their prior work experience, i.e. subjects with less work experience use electronic sources to a greater extent than their more experienced colleagues. The final part of the paper provides some concluding remarks and implications of the conducted research.

Key words: *competences; reflection; Web portals.*

Introduction

In the age of knowledge, in a sense human capital has become more valuable than material one. The majority of people understand the notion of capital in the sense

of bank accounts, shares, factories, etc. All these are the forms of capital in that they bring income and other useful effects in the course of time. However, it has been acknowledged for some time that the notion of capital does not imply only its material forms. The upbringing of children in a family, schooling and health care are also the forms of capital (Bodroški-Spariosu, 2007, p. 265). As a consequence, the attitude of learning process participants towards knowledge has gradually become similar to the relations between producers and goods, while knowledge has become a form of value. The production of knowledge is seen as goods produced to be sold and it is considered that knowledge is spent and will be spent in order to become valorised in a new product, i.e. in order to be traded. In this way, knowledge has gained its utility value (Gojkov, 2011, p. 47). It is not thus unusual that in the market-oriented economy, upbringing and education are considered to be a certain production process within which the final product is an individual equipped with knowledge, meeting the requirements and the needs of contemporary society. This leads to demands for the efficiency of the process of education on the one hand, as well as for adequate equity or right to equal opportunities on the other hand. In a large-scale longitudinal research *Interpreting the Evidence on Life Cycle Skill Formation* it is stated that investment in human capital creates financial and non-financial effects, both at the level of an individual and at the level of a society (Cunha, Heckman, Lochner, & Masterov, 2006). It is emphasized that economic, i.e. financial effects of investments in education are more researched than their non-financial effects, before all, due to the fact that these effects are more easily operationalized and measured in an empirical study. At the same time, even though they are more difficult to measure, there are empirical proofs that education is associated with many non-financial effects, both at the level of an individual and at the level of a society (Bodroški-Spariosu, 2007). The relation between the invested and the gained, or cost-effectiveness of education, is most evident in early childhood, having in mind that preschool education has a direct influence on the results of learning in subsequent periods; on the other hand, the lack of investment in preschool education and upbringing leads to the relatively low effects of investments in late adolescence and adulthood, since they do not act synergetically; the learning and acquisition of skills develop separately and results are limited (Woessmann, 2008).

Competences of Preschool Teachers

Competences of preschool teachers have come to the limelight in modern Europe since education is expected to give a significant contribution to the development of a learning society, not only through nurturing the idea of learning throughout life, but also through improving educational capacities. Thus, kindergarten teachers have an important role to play, and their competence and its narrower fields, i.e. self-competence and social competence, are considered to be the key competences, not only when professional development is in question, but also when talking about the realization of an individual in personal and social life (Gojkov, 2011, p. 38). The issue of pedagogical competence of preschool teachers has to be approached multidisciplinary (pedagogy,

psychology, sociology, communication sciences, etc.), and the creation of programmes for their initial training and professional development has to be based on scientifically grounded facts, which will in an optimal way address the immediate, general, as well as specific needs of an individual (Kostović-Vranješ & Ljubetić, 2008, p. 148).

In order to achieve this aim and to create all of the presumptions and preconditions of high quality practice and professional engagement of preschool teachers, it is important to pay special attention to the development of the following specific competences:

- creation of social change;
- open communication and dialogue;
- critical reflection: research into complex issues from various perspectives;
- learning through the process of conflicting opinions;
- shared construction/creation of new practice and knowledge with children, parents and colleagues (Vandekerckhove, Trikić, Miškeljin, Peeters, Lakićević, & Koruga, 2013, p. 43).

Professionalism in the field of upbringing and education is closely connected with the ability to critically reflect on pedagogical practices and the ability to change them accordingly. As a key issue, it is expected to motivate professionals to become reflexive practitioners – to continually analyse methods, techniques and strategies they apply in order to understand their meaning and implications for everyday practice and to find a way to change it when needed. To remain competent is a permanent process involving the ability to contribute to the creation and building up of the corpus of professional knowledge, to acquire practical and reflexive skills, and to develop a professional attitude (Lakićević et al., 2013; Vandekerckhove et al., 2013). When considering the complexity of a teacher profession, Gojkov (2011, p. 47) advocates for the standpoint that they are expected to possess complex competences, which may be developed at higher levels of education, along with more emphasized methodological education, so that they could be in a position to develop connections between contemporary theoretical assumptions and possibilities opening up in their own practice. A reflexive practitioner is one of the possible paradigms of life-long learning, development and advancement of an individual. Bandjur and Maksimović point out that this is a completely new conceptual and methodological approach which is based on the improvement of the process of teaching and learning, and that as such, it is opposite to the technical and traditional model of development of a practitioner. This kind of active individual who is testing solutions and various ways of work while finding solutions for the current problems is characterized by a reflexive and open mind; such an attitude is possible only if a person is ready to reconsider his/her own opinion, regardless of how an ideal is compelling or in harmony with his/her initial intention. A reflexive practitioner is always ready to revise and work further on certain aspects of his/her professional work, as well as to identify the segments in which it is necessary to work on and improve, both individually and socially (Bandjur & Maksimović, 2013).

Through his/her work and activity, a competent, reflexive practitioner can significantly influence the quality of preschool education and upbringing, which, as an imperative of modern society, is the main topic of heated discussions in the age of innovation and educational reforms.

Quality and Standards of Education

It is possible to conditionally define the quality of preschool upbringing and education as a set of additional values children acquire when attending a preschool institution, while these values are significant in life and further schooling. The conditionality is derived from the fact that, in reality, there is no way or means according to which the mentioned added value can be precisely measured (Pitkanen, Pavlović, & Nojkić, 2014, p. 45). It is beyond dispute that the notion of quality has been initially established for the needs of industry and management, to be subsequently transferred to the field of education. In parallel with the implementation of standard management ideas on the validation of quality, measurability of quality and possibilities to improve quality, an idea has emerged in the field of education that the care for quality should be systematic and established according to scientific grounds (Mitrović & Radulović, 2011, p. 136). These ideas and the need for education which is measurable mostly according to outcomes, i.e. skills and competences, have initiated the appearance of standards. Since the measurement of quality of education is significantly different from the dimensions observed in industry and management, it is more realistic to monitor educational standards, before all, as an expression of the need to standardize the quality of functioning at national and international levels, i.e. as a sign of globalization uniformity of educational system and levelling of national and local educational characteristics and quality (Gojkov, 2012, p. 24). It is also a fact that, either justifiably or not, a deteriorated image of the quality of studies, as well as education in general, has lately been created in public in Serbia. The private and public sector in education are experienced in different ways, i.e. there is a generally accepted standpoint that it is easier to study at a private faculty, which does not at all have to mean that these studies are of lower quality (Savić, 2015, p. 123); at the same time, in the conditions of market competitiveness, as well as in the race for reaching standards, state higher education institutions have deteriorated their criteria, they have put an accent on the quantity expressed in student pass rate or average marks… A tendency towards as low management costs as possible while striving for a better quality sooner or later leads to a failure. In practice, this initiates a search for additional means on the market, inevitably leading to the commercialization of educational space, time, and curricular contents (Gojkov, 2012, p. 29).

ICT in Education

For education to be in step with the imposed qualitative and quantitative demands, it is necessary to involve modern achievements of information and communicational technologies in all pores of the process. ICT has become an essential component of

modern life, and as such, it is an inevitable part of education which has an innovated role to prepare young individuals for the world of rapid changes and to help them find their place in such a world (Božić & Micić, 2006). At the same time, IT education of the youth is not limited to the creation of workers who will be able to use computers as tools when carrying out their professional tasks, but it also refers to IT literacy of all citizens and imposed itself as a basic issue of modern societies (Djurišić, 2000). Thus, the basic idea and the new approach to education implies that the involvement in modern trends requires fast, efficient and adequate changes in the field in order to follow the technological progress and current needs of the labour market (Šuman, Gligora Marković, & Pogarčić, 2008).

Having in mind that the use of educational resources does not require specific technological knowledge and skills, the teachers' lack of information competences is not a reason for avoiding modern technologies; it is rather possible to discuss whether a teacher is ready or not to get involved in the professional development, research and examination of possibilities these technologies offer for reaching a higher level of efficacy, as well as of many other teaching aspects, e.g. collaboration, communication, team work (Božić, 2014, p. 237). In the newly created circumstances, a school, with all its factors, can be considered one of the initial learning frameworks; on the other hand, continuous life-long learning and education, required in the modern age, seeks for a broader spectrum of resources, forms and ways of education (Starčević & Škrbić, 2014, p. 475).

Methods

The research refers to the use of the Internet sources by preschool teachers in the process of their professional development, leading to the increase in the quality of work in preschool institutions. The participants were supposed to provide answers to the following question: do they use the possibilities offered by Web technologies, especially in order to increase the quality of their own upbringing-educational practice, and if yes, to what extent?

The main aim is to examine to what extent the Internet sources are used in comparison to conventional sources in the innovation of upbringing-educational process with the purpose of meeting standards and thus increasing the quality of preschool education and upbringing.

In the empirical-explorative research, the method of systematic non-experimental observation was applied. The scaling technique was used as required by a questionnaire constructed for the current purpose, combining closed questions, multiple choice questions and the Likert scale statements. Apart from the empirical method, efforts were made to transform quantity into quality through interpretations in order to establish a link between the obtained data and the theoretical framework. Therefore, it might be claimed that a systematic approach is used according to data synthesis in the research.

Research Hypotheses

The research includes the validation of one general hypothesis and three working hypotheses. According to the general hypothesis (H0), the use of the Internet sources, i.e. Web portals, by preschool teachers should increase the quality of preschool education and upbringing; the working hypotheses are as follows:

- H1 – The extent of the use of the Internet sources which leads to the increase in the quality of preschool education and upbringing is statistically significantly different in regard to the criterion variables, such as: gender, work experience, and level of education.
- H2 – Compared to conventional sources, experience, as well as existing documents and materials, electronic sources are statistically significantly more used for increasing the quality of one's own work and the work of an institution.
- H3 – Preschool teachers' use of the Internet sources is statistically different across the fields of their pedagogical work in the institution, so that, when using the Internet sources, preschool teachers give a priority to planning and realization of upbringing and educational tasks, seen as the most comprehensive and the most complex part of their activities.

Sample and Instrument

The research sample included 293 preschool teachers working in preschool institutions within the municipalities of Belgrade, Vršac, Alibunar and Bela Crkva. The instrument was designed for the current purpose according to the established hypotheses.

The empirical research presented in this paper tends to provide an answer to the question: what kind of sources are used by preschool teachers and how frequently in order to address the *Standards of Quality of Preschool Institutions Work* (the Official Gazette of the Republic of Serbia 7/2011, 68/2012), including guidelines on how to create appropriate conditions and reach a high quality preschool practice? *The Standards* are the basis for accreditation, quality evaluation, licensing and verification of preschool institutions, stated as a requirement in the *Strategy for Education Development in Serbia 2020* (the Official Gazette of the Republic of Serbia 107/2012). The questionnaire used as a research instrument was constructed according to the contents of this document.

The following fields are defined in the questionnaire:

Field 1 – preschool curriculum, annual and developmental plan
Field 2 – educational and upbringing work
Field 3 – children development and progress
Field 4 – ethos
Field 5 – professional development

The aim was to establish which types of sources were used and to what extent they were used by preschool teachers for their professional development, so that

they could meet the required standards. Three possible answers were offered, each scaled according to the principles of the 5-point Likert scale (5=very frequently; 4=frequently; 3=occasionally, 2=rarely; 1=never). So, for the statement *In order to improve the quality of my work professionally, I use* the following options were offered:

- Electronic sources (Internet sites and portals, e-books…)
- Conventional sources (printed materials and books, course books…)
- Personal work experience and the existing documentation and materials.

Procedure

Data processing involved descriptive statistics methods (frequency, mean value, standard deviation), as well as the methods of analytical statistics for the evaluation of significant differences. In order to examine the difference in the extent regarding the use of various sources by the subjects of different gender, the T-test for independent samples was used. A single factor analysis of variance of different groups ANOVA was carried out in order to examine the difference in the extent to which various groups use electronic sources in their work. The subjects were grouped according to years of their work experience and level of education. In order to test statistically significant differences in the responses to different questions, the paired samples T-test was used. In order to analyse the differences in the extent of using various sources in different fields of work, the recorded responses were also grouped and thus formed variables within each of the established work fields.

Results and Interpretation

For the purpose of validating the general hypothesis, the extent of use regarding electronic sources for the improvement of preschool education and upbringing quality was tested in regard to the following criteria variables: gender, level of education and work experience. No statistically significant difference was established when gender and level of education were observed. Research results showed a statistically significant difference only in the participants' work experience. As a consequence, this aspect of research will be further discussed in the paper.

First of all, the influence of work experience on the use of different sources in the work of preschool teachers was considered. As stated above, a single factor analysis of variance showed a statistically significant difference at the level of 0.05 in the use of electronic sources when it came to the work of the subjects with different work experience (Sig. 0.02). According to Cohen's criterion, the significance of mean differences was established (η^2= 0.06).

Figure 1 shows that the subjects with less than 5 years of work experience use electronic sources most frequently (M=3.77), followed by the subjects with the work experience between 5 and 10 years (M=3.57), who use electronic resources more frequently than the subjects with more than 10 years of work experience who use electronic sources least frequently (M=3.29). The obtained results indicate that there

is a statistically significant difference in the extent of electronic resources use between the first and the third group of the subjects, i.e. between those who have less than 5 years of work experience and those who have more than 10 years of work experience. Such difference was found neither between the first and the second group nor between the second and the third groups, leading to a conclusion that the first hypothesis, according to which the extent of the Internet sources use which leads to the increase in the quality of preschool education and upbringing is statistically significantly different in regard to the criteria variables: gender, work experience and level of education was only partially validated.

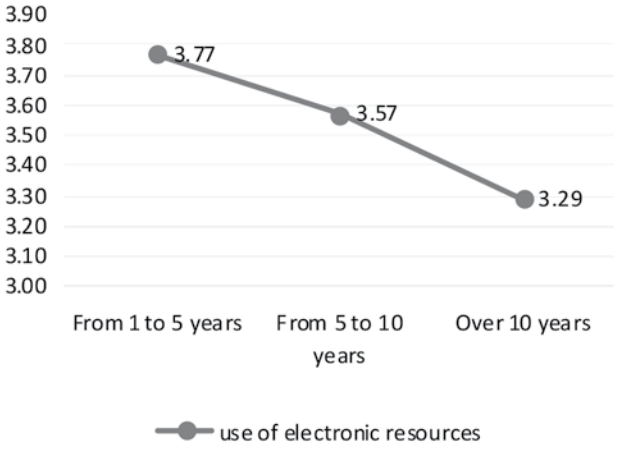


Figure 1. Differences in the extent of use of electronic sources between the three groups of subjects

What follows refers to the findings across the fields of pedagogical work and their correlation with the variable work experience.

According to the above mentioned, there is a statistically significant difference in view of work experience. This variable was observed in regard to the extent of electronic sources use across different fields, i.e. Field 1: Preschool curriculum, annual and developmental plan. Based on the single factor analysis of variance, it was found that there was no statistically significant difference in the extent of electronic sources use in the work of preschool teachers in the observed field. The explanation of the finding seems to be rather simple. Differences did not appear due to the fact that this field of upbringing and educational work is equally significant, complex and mandatory for all preschool teachers, so that they rely on one another, cooperating and exchanging their experiences, especially with senior preschool teachers transferring knowledge and experience to their younger colleagues. At the same time, the exchange is two-directional, so that younger preschool teachers support their older colleagues in the use of electronic sources.

In regard to the differences between the subjects with different work experience and the extent of electronic sources use across different fields – the field of upbringing

and educational work, it can be concluded that, according to the single factor analysis of variance, there is no statistically significant difference in the extent of electronic sources use in the work of preschool teachers in the field of upbringing and educational work between the subjects with different work experience.

What follows regards the analysis of differences between the subjects with different work experience and the extent of electronic sources use according to different fields – the field of monitoring children's development and family support. According to the single factor analysis of variance, it was found that there was a statistically significant difference at the level of 0.05 in the extent of electronic sources use in the work of preschool teachers in the field of monitoring children's development and family support between the subjects with different work experience (Sig. 0.02). According to Cohen's criterion, the significance of mean differences was established (η^2= 0.06).

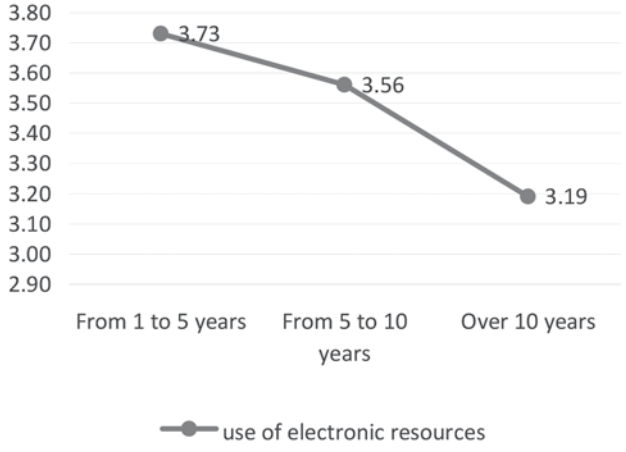


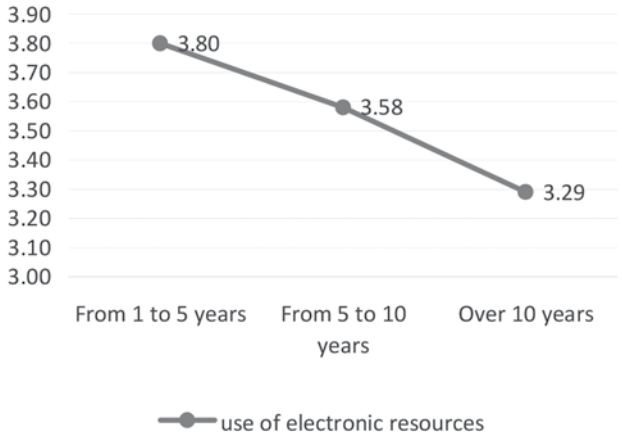
Figure 2. Differences in the extent of use of electronic sources in the field of monitoring children's development and family support between the three groups of subjects

Figure 2 shows that, when the field of monitoring children's development and family support is considered, the subjects with less than 5 years of work experience use electronic sources most frequently (M=3.73), while the subjects with their work experience between 5 and 10 years (M=3.56) use electronic resources less frequently, and the subjects with more than 10 years of work experience use electronic sources least frequently (M=3.19). The obtained results indicate that there is a statistically significant difference in the extent of electronic sources use between the first and the third group of the subjects, i.e. between those who have less than 5 years of work experience and those who have more than 10 years of work experience. This finding is not surprising, having in mind that in general younger preschool teachers use electronic sources more than their older colleagues. They seem to be more skilful since they use them in their everyday lives. This is another indicator that electronic media should be more present in preschool institutions, so that the entire teaching staff could

have equal access to the electronic sources of information related to the immediate tasks of preschool teachers in their pedagogical work within a preschool institution.

As for the differences between the subjects with different work experience and the extent of electronic sources use according to different fields – the field of ethos, it can be stated that a statistically significant difference was established according to the single factor analysis of variance at the level of 0.05 in the extent of electronic sources use in the work of preschool teachers in the field of ethos between the subjects with different work experience (Sig. 0.02). According to Cohen's criterion, a low level of significant difference was established (η^2= 0.04).

Figure 3. Differences in the extent of use of electronic sources in the



field of ethos between the three groups of subjects

Figure 3 shows that, when the field of ethos is considered, the subjects who have up to 5 years of work experience use electronic sources most frequently (M=3.8), while the subjects who have between 5 and 10 years of work experience (M=3.58) use electronic resources less frequently and the subjects who have more than 10 years of work experience use electronic sources least frequently (M=3.29). The results indicate that there is a statistically significant difference in the extent of electronic sources use between the first and the third group of the subjects, i.e. between those who have less than 5 years of work experience and those who have more than 10 years of work experience. The interpretation of the given finding implies the same reflection as the previous interpretations, i.e. it can be explained according to the characteristic feature of senior preschool teachers, who do not find the use of electronic sources as easy as their younger colleagues do. The second aspect might refer to the fact that they are aware of the importance of experience, accepted value systems, etc., which creates some professional certainty in the case of more experienced preschool teachers who seem to think that what they already know in the field is sufficient for them in their work. As an epistemological theory, constructivism acknowledges such an attitude as a barrier to the acquisition of new knowledge, which might be accepted in this case.

Finally, the differences between the subjects with different work experience and the extent of electronic sources use according to different fields – the field of professional development, were also taken into consideration. According to the single factor analysis of variance, it was found that there was a statistically significant difference at the level of 0.05 in the extent of electronic sources use in the work of preschool teachers in the field of professional development between the subjects with different work experience (Sig. 0.06). According to Cohen's criterion, the significance of mean differences was established (η^2= 0.08).

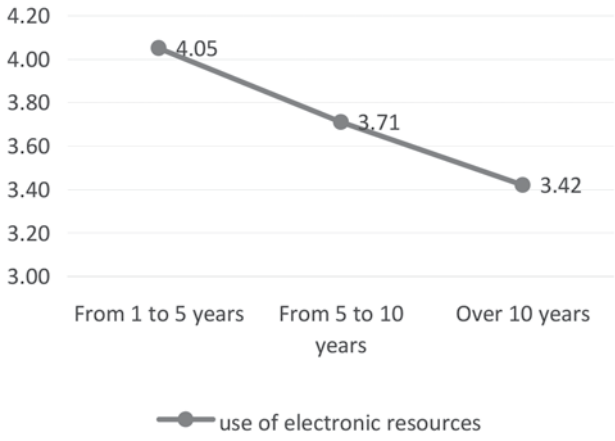


Figure 4. Differences in the extent of use of electronic sources in the field of professional development between the three groups of subjects

Figure 4 shows that, when the field of professional development is in question, the subjects with less than 5 years of work experience use electronic sources most frequently (M=4.05), while the subjects with their work experience between 5 and 10 years (M=3.71) use electronic resources less frequently and the subjects with more than 10 years of work experience use electronic sources least frequently (M=3.42). The results indicate that there is a statistically significant difference in the extent of electronic sources use in the field of professional development between the first and the third group of the subjects, i.e. between those who have less than 5 years of work experience and those who have more than 10 years of work experience. No such difference was found either between the first and the second group or between the second and the third group.

When considering differences between the subjects with different work experience and the extent of electronic sources use according to different fields, it might be concluded that:

- there is a statistically significant difference in the field of preschool curriculum, annual and developmental plan,
- there is no statistically significant difference in the field of upbringing and educational work,

- there is a mean level of influence significance in the field of monitoring children's work and family support,
- there is a low level of influence significance in the field of ethos,
- there is a mean level of influence significance in the field of professional development.

Differences between the Extent of Using Electronic and Other Sources

In order to establish whether electronic sources are used more than other sources, the test of significant differences was conducted in the average values of responses to the question to what extent the participants use both types of sources in their work. The paired samples T-test showed that there was a statistically significant difference in the subjects' responses to the question how frequently they used electronic sources in their work (M=3.58, SD=0.86) as compared to the response to the question how much they used conventional sources in their work in order to improve it (M=3.95, SD=0.59); t (290)=-6.59, P<0.0005 (in both directions). The average difference of the FOST value was -0.37 (SD=0.68), while 95% of the confidence interval ranges from -0.49 to -0.26. The Eta squared value (η^2=0.23) shows that the difference is highly significant.

The paired samples T-test was used to test a statistical significance between the average values in the subjects' responses referring to the use of electronic sources in general as compared to those referring to the use of experience and existing documents and materials in their work. The T-test showed that there was a statistically significant difference in the subjects' responses to the question how frequently they used electronic sources in their work (M=3.58, SD=0.86) as compared to the responses to the question to what extent they used their prior work experience and existing documents and materials in their work in order to improve it (M=3.89, SD=0.61); t(290)=-4.29, P < 0.0005 (in both directions). The average difference of the FOST value was -0.31 (SD=0.88), while 95% of the confidence interval ranges from -0.46 to -0.17. The Eta squared value (η^2= 0.11) shows that the difference is moderate.

The findings led to a conclusion that there was a statistically significant difference in the extent of electronic sources use as compared to the extent of conventional sources use, experience, as well as existing documents and materials in the work of preschool teachers. In other words, electronic sources are significantly less used than conventional sources, prior experience, existing documents and materials with the aim of improving the quality of both one's own work and the work of preschool institution in general. Consequently, the general hypothesis (H0) was rejected, according to which the use of the Internet sources, i.e. Web portals, by preschool teachers is in the function of increasing the quality of preschool education and upbringing. Furthermore, the first working hypothesis (H1), according to which the extent of using the Internet sources which leads to the increase in the quality of preschool education and upbringing is statistically significantly different in regard to the criteria variables: gender, work experience and level of education, was also rejected.

Table 1

Results of the paired samples T-tests used to determine differences in the subjects' responses referring to the use of various sources in work

Paired Samples Statistics		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Electronic sources total	3.58	292	0.86	0.07
	Conventional sources total	3.95	292	0.59	0.05
Pair 2	Electronic sources total	3.56	292	0.86	0.07
	Experience & existing documentation total	3.89	292	0.61	0.05

Paired Samples Test		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	El. s. total - Conv. s. total	-0.37	0.68	0.06	-0.49	-0.26	-6.59	290	0.00
Pair 2	El. s. total - Experience & documentation total	-0.31	0.88	0.07	-0.46	-0.17	-4.29	290	0.00

Differences in the Use of Electronic Sources within Different Fields of Work

In order to find out if electronic sources are used more frequently in the planning and realization of upbringing and educational work (Field 2) than in other fields, paired samples T-tests were carried out, testing the significance of responses to the questions regarding the extent of electronic sources use in the planning and realization of upbringing and educational work (Field 2) as compared to the remaining four fields (Field 1: preschool curriculum, annual and developmental plan, Field 3: monitoring children's development and progress; Field 4: ethos; Field 5: professional development). The findings are as follows:

- The paired samples T-test showed that there was statistically significant difference in the subjects' responses to the question how frequently they used electronic sources in their work in the planning and realization of upbringing and educational work – Field 2 (M=3.46, SD=0.85) as compared to the responses to the question how much they used electronic sources in their work in preschool curriculum, annual and developmental plan – Field 1 (M=3.10, SD=1.22); t (290)=-3.94, P<0.0005 (in both directions). The average difference regarding the FOST value was 0.36 (SD=1.10), while 95% of the confidence interval ranges from 0.18 to 0.54. The Eta squared value ($\eta 2$=0.1) shows that the difference is mean, i.e. moderate. The results imply that the subjects use electronic sources more in the field of planning and realization of upbringing and educational tasks than in the field of preschool curriculum, annual and developmental plan.

- The paired samples T-test was used to test if there was a statistically significant difference in the subjects' responses to the question how frequently they used electronic sources in their work in the field of planning and realization of upbringing and educational work, as compared to their responses to the question how much they used electronic sources in their work in the field of monitoring children's development and family support. It was established that there was no statistically significant difference in their responses to the question how frequently they used electronic sources in their work in the planning and realization of upbringing and educational work – Field 2 (M=3.46, SD=0.85), as compared to their responses to the question how much they used electronic sources in their work in the field of monitoring children's development and family support – Field 3 (M=3.53, SD=0.98); t (290)=1.5, P < 0.0005 (in both directions). The average difference regarding the FOST value was -0.08 (SD=0.62), while 95% of the confidence interval ranges from -0.18 to 0.02. So, the results imply that the differences in the extent to which the subjects use electronic sources in the field of planning and realization of upbringing and educational tasks and in the field of monitoring children's development and family support is not statistically significant.
- The paired samples T-test showed that there was a statistically significant difference in the subjects' responses to the question how frequently they used electronic sources in their work in the planning and realization of upbringing and educational work – Field 2 (M=3.46, SD=0.85), as compared to their responses to the question how much they used electronic sources in their work in the field of ethos – Field 4 (M=3.59, SD=1.08); t (290)=-1.2 , P < 0.0005 (in both directions). The average difference regarding the FOST value was -0.14 (SD=0.83), while 95% of the confidence interval ranges from 0.27 to 0. The Eta squared value ($\eta 2$= 0.03) shows that the difference is small in favour of the field of ethos. This difference, even though statistically significant, is rather small.
- Finally, the T-test was used in the same way to establish a statistically significant difference in the responses regarding professional development – Field 5 (M=3.46, SD=0.85), as compared to the field of planning and realization of upbringing and educational work – Field 2 (M=3.78, SD=0.99); t(290)=-5.29, P < 0.0005 (in both directions). The average difference considering the FOST value was -0.32 (SD=0.73), while 95% of the confidence interval ranges from -0.44 to -0.2. The Eta squared value ($\eta 2$= 0.16) shows that the difference is significant.

The use of electronic sources by preschool teachers is statistically significantly different according to the fields of pedagogical work in preschool institutions. When using electronic sources in their professional work, preschool teachers give a priority to the planning and realization of upbringing and educational work, as the most comprehensive and the most complex part of their activities, as well as in the field of their own professional development. The finding leads to a conclusion that the third working hypothesis was confirmed.

Table 2

Results of the paired samples T-tests used to determine differences in the subjects' responses referring to the use of electronic sources within different fields of work

Paired Samples Statistics		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Field 2. Electronic s.	3.46	292	0.85	0.07
	Field 1. El. s.	3.10	292	1.22	0.10
Pair 2	Field 2. El. s.	3.46	292	0.85	0.07
	Field 3. El. s.	3.53	292	0.98	0.08
Pair 3	Field 2. El. s.	3.46	292	0.85	0.07
	Field 4. El. s.	3.59	292	1.08	0.09
Pair 4	Field 2. El. s.	3.46	292	0.85	0.07
	Field 5. El. s.	3.78	292	0.99	0.08

Paired Samples Test		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Field 2. E.s. - Field 1. E.s.	0.36	1.10	0.09	0.18	0.54	3.94	290	0.00
Pair 2	Field 2. E.s. - Field 3. E.s.	-0.08	0.62	0.05	-0.18	0.02	-1.50	290	0.14
Pair 3	Field 2. E.s. - Field 4. E.s.	-0.14	0.83	0.07	-0.27	-0.00	-1.20	290	0.05
Pair 4	Field 2. E.s. - Field 5. E.s.	-0.32	0.73	0.06	-0.44	-0.20	-5.29	290	0.00

Conclusions

Having tested the first working hypothesis H1, it is possible to claim that it was partially confirmed. In regard to the second working hypothesis H2, a conclusion can be made that it was rejected, having in mind that the subjects use conventional sources, work experience, as well as the existing documents and materials more than electronic sources in order to improve the quality of their own work, along with the work of their preschool institutions.

Having tested the third working hypothesis H3, it might be concluded that it was confirmed. Namely, considering the research results showing the extent to which electronic sources were used in various fields of work, it can be concluded that the subjects use electronic sources in the field of upbringing and educational work more than in the field of preschool curriculum, annual and developmental plan. At the same time, the subjects use electronic sources in the field of upbringing and educational work to the same extent as they use them in the field of monitoring children's development and family support, as well as in the fields of ethos and professional development.

Implications of the Conducted Research

Having in mind the findings of the conducted research, it should be considered why electronic sources are not more frequently used than other sources, i.e. conventional sources, experience, existing documents and materials. The reasons might be found in the following:

- preschool teachers are not interested in electronic sources;
- preschool teachers do not have appropriate knowledge and skills needed to use electronic sources;
- preschool institutions do not have suitable technical preconditions for the use of electronic sources;
- there are no adequate electronic sources that preschool teachers could use in order to increase the quality of their own work.

The above stated assumptions have in a sense already been discussed in the paper. Namely, the statistical data processing showed that the increase in work experience leads to more intense reliance on one's own personal experience and documentation. In other words, the more experienced preschool teachers are, the less they use electronic sources. Older preschool teachers become more rigid in time, they develop certain sense of superiority in their work with preschool children and do not search for the (best) ways to improve the quality of their work. Unfortunately, they are wrong, having in mind that the children with whom they work do not depend only on them and their parents as the main sources of information. Children acquire knowledge through modern media and its scope often overcomes the scope of knowledge preschool teachers have. It is also possible to notice that the younger subjects express an increased interest in the use of electronic sources in general. Thus, it can be expected that electronic sources will be more intensively used in the future for improving the work quality.

The second assumption can be commented in the same way. Namely, younger preschool teachers possess some greater knowledge and skills for using electronic sources, even though it is known that there is no professional development programme offered to preschool teachers dealing with the issue of using digital resources in the work with children; at the same time, there is no online professional development or e-learning form for preschool teachers (Pavlović Breneselović, 2012, p. 321). On the other hand, preschool teachers should be life-long learners who permanently acquire new knowledge and skills through various forms of education: IT courses, seminars in the IT field and various websites, in order to develop their professional competences for the application of ICT in the work with preschool children (Veličković, 2014, p. 377). What is necessary is greater engagement of the Ministry, various agencies, as well as experts in the field of ICT, in order to find and apply a pedagogical-didactical form of hermeneutic strategies and strategies of creative learning which (may) influence the increase in quality when the work related to upbringing and education is discussed.

Since there are no data available on the number of preschool institutions, employed staff, etc., it is not possible to find out how these institutions are equipped in terms of ICT equipment. Even though only 104 subjects (35.6%) claimed that they used computers both at home and at work, it does not exclude the possibility that electronic equipment is available to a greater number of the teaching staff in preschool institutions, but they simply do not use it. What is also to be expected is

that, if preschool institutions were better equipped with modern equipment, preschool teachers would be motivated to use such equipment more – if they were interested and well-trained, of course.

Finally, there are certainly adequate electronic sources on the Internet which could be used by preschool teachers to help them increase the quality of their own work. However, they are often in a foreign language (English). Apart from the language barrier, the problem may also refer to the contents, having in mind that they are adjusted to the system of preschool education and upbringing in the Anglo-Saxon countries, which is different from the system in Serbia. Portals in the Serbian language cover certain fields of work in preschool institutions but they do not offer an adequate, i.e. comprehensive approach to the issue. This statement, supported by the fact that the general and two working hypotheses were not confirmed, points to an urgent need to create adequate portals for preschool education, following their popularization, as one of the possible solutions for increasing the quality of work in Serbian preschool institutions.

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Predrag Prtljaga
Mihailo Palov Preschool Teacher Training College,
Omladinski trg 1, 26300 Vršac, Serbia
jpivan@sezampro.rs

Zoran Savić
Faculty of Management – FAM, Nikola Tesla University UNION
Njegoševa 1a, 21205 Sremski Karlovci, Serbia
savicz@famns.edu.rs

Uporaba internetskih izvora u profesionalnom razvoju odgajatelja

Sažetak

U prvom dijelu rada razmatra se važnost predškolskog obrazovanja u suvremenom društvu s obzirom na načela suvremenog obrazovanja te ukazuje na potrebu stručnog usavršavanja odgajatelja koji će biti sposobni dostići očekivane standarde. Rad se zatim bavi kompetencijama i razvijenom refleksijom odgajatelja, kao i nužnim stvaranjem uvjeta u kojima će se odgajatelji udaljiti od svijeta analognog i približiti svijetu digitalnog obrazovanja putem ICT usavršavanja, što će dovesti do uporabe odgovarajućih internetskih izvora. U empirijskom dijelu rada traži se odgovor na pitanje do koje se mjere u profesionalnom radu odgajatelji koriste elektroničkim izvorima u usporedbi s konvencionalnim izvorima informacija, njihovim prethodnim iskustvom i postojećim dokumentima. Prema glavnim istraživačkim rezultatima, bez obzira na rod, radno iskustvo ili obrazovnu razinu, odgajatelji se koriste internetskim izvorima manje nego konvencionalnim izvorima da bi unaprijedili kvalitetu rada. No, utvrđene su određene razlike među njima s obzirom na radno iskustvo, to jest ispitanici koji imaju kraće radno iskustvo više se koriste elektroničkim izvorima od svojih iskusnijih kolega. U završnom dijelu rada nude se zaključci i praktične implikacije provedenog istraživanja.

Ključne riječi: *kompetencije; mrežni portali; refleksija.*

Uvod

U doba znanja ljudski je kapital na neki način postao vredniji od materijalnog kapitala. Većina ljudi shvaća pojam kapitala u bankarskom, dioničarskom, tvorničkom i sličnom smislu. Sve su to oblici kapitala jer tijekom vremena sa sobom donose dobit i druge korisne učinke. No, već se neko vrijeme priznaje da pojam kapital ne podrazumijeva samo materijalno. Odgoj djece u obitelji, školovanje i zdravstvena skrb također su oblici kapitala (Bodroški-Spariosu, 2007, str. 265). Stoga dionici procesa učenja znanje promatraju slično kao odnos između proizvođača i robe, pri čemu je znanje postupno poprimilo oblik vrijednosti. Znanje se promatra kao roba proizvedena za prodaju, te se smatra da će se trošiti i potrošiti kako bi se valoriziralo u nekom novom proizvodu, odnosno kako bi se njime trgovalo. Na taj je način znanje

dobilo svoju uporabnu vrijednost (Gojkov, 2011, str. 47). Tako nije neobično da se u tržišno orijentiranoj ekonomiji odgoj i obrazovanje smatraju proizvodnim procesom u kojem je krajnji proizvod pojedinac opskrbljen znanjem koje zadovoljava zahtjeve i potrebe suvremenog društva, a to pak dovodi do potrebe za učinkovitim obrazovnim procesom s jedne strane i odgovarajućim jednakostima ili pravom na jednake mogućnosti s druge strane. U opsežnom longitudinalnom istraživanju Tumačenje dokaza o formiranju cjeloživotnih vještina navodi se kako ulaganje u ljudski kapital daje financijske i nefinancijske učinke na razini pojedinca i na razini društva (Cunha, Heckman, Lochner, i Masterov, 2006). Istaknuto je da se više istražuju ekonomski, to jest financijski, nego nefinancijski učinci ulaganja u obrazovanje prije svega zbog činjenice da ih je lakše operacionalizirati i mjeriti u empirijskom istraživanju. U isto vrijeme, premda teže mjerljivi, postoje empirijski dokazi o povezanosti obrazovanja s brojnim nefinancijskim učincima na objema razinama – individualnoj i društvenoj (Bodroški-Spariosu, 2007). Odnos između uloženog i dobivenog ili učinkovitost obrazovanja u troškovnom smislu najočitiji je u ranom djetinjstvu, imajući u vidu da predškolsko obrazovanje izravno utječe na rezultate učenja u narednim razdobljima; s druge strane, nedostatno ulaganje u predškolski odgoj i obrazovanje vodi relativno slabim učincima ulaganja u kasnoj adolescenciji i odrasloj dobi jer oni ne djeluju sinergijski; učenje i usvajanje vještina razvijaju se odvojeno, a rezultati su ograničeni (Woessmann, 2008).

Kompetencije odgajatelja

Kompetencije odgajatelja privlače pozornost u suvremenoj Europi jer se od obrazovanja očekuje da značajno pridonese razvoju društva učenja ne samo njegovanjem ideja o cjeloživotnom učenju nego također poboljšanjem obrazovnih kapaciteta. Odgajatelji u vrtićima imaju tako važnu ulogu, a njihova se kompetencija i njezina uža područja, to jest individualna kompetencija i društvena kompetencija, smatraju ključnim ne samo kada je u pitanju profesionalni razvoj nego i kada se razgovara o realizaciji pojedinca u osobnom i društvenom životu (Gojkov, 2011, str. 38). Pitanju pedagoške kompetencije odgajatelja treba pristupiti višedisciplinarno (pedagogija, psihologija, sociologija, komunikacijske znanosti itd.), a koncipiranje programa za njihovo inicijalno obrazovanje i profesionalno usavršavanje mora se zasnivati na znanstveno utemeljenim činjenicama, optimalno usmjerenim na neposredne, opće i specifične potrebe pojedinca (Kostović-Vranješ i Ljubetić, 2008, str. 148).

Da bi se taj cilj ostvario i da bi se stvorile sve pretpostavke i preduvjeti za visokokvalitetnu praksu i profesionalni angažman odgajatelja, važno je obratiti osobitu pozornost na razvoj sljedećih specifičnih kompetencija:

- stvaranje društvene promjene;
- otvorena komunikacija i dijalog;
- kritička refleksija: istraživanje složenih pitanja iz različitih perspektiva;

- učenje procesom suprotstavljanja mišljenja;
- konstruiranje/kreiranje nove prakse i znanja zajedno s djecom, roditeljima i kolegama (Vandekerckhove, Trikić, Miškeljin, Peeters, Lakićević, i Koruga, 2013, str. 43).

Profesionalizam u području odgoja i obrazovanja tijesno je povezan sa sposobnošću kritičkog osvrta na pedagoške prakse i s odgovarajućom sposobnošću njihova mijenjanja. Najvažnije je to kako se od profesionalaca očekuje da budu motivirani da bi postali refleksivnim praktičarima – koji će kontinuirano analizirati metode, tehnike i strategije koje primjenjuju da bi shvatili njihovo značenje i posljedice po svakodnevnu praksu te pronašli način kako je promijeniti kada je to potrebno. Ostati kompetentan predstavlja trajni proces koji obuhvaća mogućnost doprinosa stvaranju i izgradnji korpusa stručnog znanja, usvajanju praktičnih i refleksivnih vještina, kao i razvoju profesionalnog stava (Lakićević i sur., 2013; Vandekerckhove i sur., 2013). Razmatrajući složenost učiteljske profesije, Gojkov se zalaže za stajalište prema kojem se od učitelja očekuju složene kompetencije, mogućnost razvoja na visokoškolskoj razini s naglašenijim metodičkim pristupom tako da mogu biti u situaciji stvarati poveznice između suvremenih teorijskih pretpostavki i mogućnosti koje im se otvaraju u vlastitoj praksi (Gojkov, 2011, str. 47). Refleksivni praktičar jedna je od mogućih paradigmi cjeloživotnog učenja, razvoja i napredovanja pojedinca. Bandjur i Maksimović (2013) naglašavaju da je to jedan potpuno novi koncepcijski i metodički pristup utemeljen na usavršavanju procesa učenja i poučavanja, pa je oprečan tehničkom i tradicionalnom modelu razvoja praktičara. Takav aktivni pojedinac, koji provjerava rješenja i različite načine rada dok traži izlaz za trenutne probleme, obilježen je refleksivnim i otvorenim umom; takvo je stajalište moguće samo ako je osoba spremna iznova razmatrati vlastita stajališta bez obzira na to kako je neki ideal zanimljiv ili usklađen s njegovom/njezinom početnom namjerom. Refleksivni praktičar uvijek je spreman revidirati određene aspekte svog profesionalnog rada, identificirati segmente na kojima je potrebno dalje raditi te ih poboljšati individualno i društveno (Bandjur i Maksimović, 2013).

Kompetentan, refleksivan praktičar može, svojim radom i aktivnostima, značajno utjecati na kvalitetu predškolskog obrazovanja i odgoja, što je, kao imperativ suvremenog društva, glavna tema uzavrelih rasprava u doba inovacija i obrazovnih reformi.

Kvaliteta i standardi obrazovanja

Kvaliteta predškolskog odgoja i obrazovanja može se uvjetno definirati kao niz dodanih vrijednosti koje djeca usvajaju pohađajući predškolsku ustanovu, pri čemu su te vrijednosti važne u životu i daljnjem školovanju. Ta uvjetovanost proizlazi iz činjenice da u stvarnosti ne postoji način ili sredstvo prema kojem se spomenuta dodana vrijednost može precizno mjeriti (Pitkanen, Pavlović, i Nojkić, 2014, str. 45). Nedvojbeno je da je pojam kvalitete početno ustanovljen za potrebe industrije i menadžmenta da bi zatim bio prenesen u područje obrazovanja. Paralelno s

primjenom standardnih ideja menadžmenta o vrednovanju kvalitete, mjerljivosti kvalitete i mogućnosti poboljšanja kvalitete, pojavila se ideja u području obrazovanja o tome da bi briga za kvalitetu trebala biti sustavna i znanstveno utemeljena (Mitrović i Radulović, 2011, str. 136). Te su ideje i potreba za obrazovanjem koje je mjerljivo uglavnom prema ishodima, to jest vještinama i kompetencijama, potaknule pojavu standarda. Budući da je *mjerenje kvalitete* obrazovanja značajno drukčije od dimenzija koje se promatraju u industriji i menadžmentu, realnije je promatrati obrazovne standarde prije svega kao izraz potrebe za standardizacijom kvalitete funkcioniranja na nacionalnim i međunarodnim razinama, odnosno kao znak globalizacijske uniformiranosti obrazovnog sustava te ujednačavanja nacionalnih i lokalnih obrazovnih karakteristika i kvalitete (Gojkov, 2012, str. 24). Također je činjenica da se u novije vrijeme u srbijanskoj javnosti, opravdano ili ne, stvorila iskrivljena slika o kvaliteti studija i obrazovanja općenito. Privatni i javni obrazovni sektor različito se doživljavaju, to jest postoji općeprihvaćeno gledište da je lakše studirati na nekom privatnom fakultetu, a ne mora značiti da su ti studiji lošije kvalitete (Savić, 2015, str. 123); u isto vrijeme, u uvjetima tržišne konkurentnosti i utrke za dostizanjem određenih standarda, državne visokoškolske institucije iskrivljuju kriterije i stavljaju naglasak na kvantitetu izraženu stopom prolaznosti ili prosjekom ocjena… Nastojanje da se postignu što niži troškovi menadžmenta, dok se teži boljoj kvaliteti, prije ili kasnije dovodi do neuspjeha. To u praksi inicira potragu za dodatnim sredstvima na tržištu dovodeći neizbježno do komercijalizacije obrazovnog prostora, vremena i nastavnih sadržaja (Gojkov, 2012, str. 29).

IKT u obrazovanju

Da bi obrazovanje išlo u korak s nametnutim zahtjevima za kvalitetom i kvantitetom, potrebno je uključiti suvremena dostignuća informacijsko-komunikacijskih tehnologija u sve pore tog procesa. IKT je postala suštinska komponenta suvremenog života, a time predstavlja neizostavan dio obrazovanja koje ima novu ulogu pripremiti mlade pojedince za svijet brzih promjena i pomoći im da pronađu svoje mjesto u takvom svijetu (Božić i Micić, 2006). U isto vrijeme IT obrazovanje mladih nije ograničeno na stvaranje djelatnika koji će se znati koristiti računalima kao alatima pri izvršenju svojih profesionalnih zadataka, nego se također odnosi na IT pismenost svih građana te se sama po sebi nameće kao glavno pitanje suvremenog društva (Djurišić, 2000). Na taj način temeljna ideja i novi pristup obrazovanju podrazumijevaju kako uključenost u suvremena kretanja zahtjeva brze, učinkovite i odgovarajuće promjene u obrazovanju da bi se pratili tehnološki napredak i trenutne potrebe na tržištu rada (Šuman, Gligora Marković, i Pogarčić, 2008).

Imajući u vidu da uporaba obrazovnih resursa ne zahtijeva specifično tehnološko znanje i vještine, nedostatak informacijskih kompetencija učitelja nije razlog da se izbjegavaju suvremene tehnologije; prije je moguće raspravljati o tome je li učitelj spreman ili nije uključiti se u stručno usavršavanje, istraživanje i provjeravanje

mogućnosti koje spomenute tehnologije nude za postizanje učinkovitosti na višoj razini, kao i mnoge druge vidove obrazovanja, kao što su suradnja, komunikacija, timski rad (Božić, 2014, str. 237). U novonastalim uvjetima škola se sa svim svojim čimbenicima može smatrati jednim od početnih okvira za učenje; s druge strane kontinuirano cjeloživotno učenje i obrazovanje, potrebno u suvremeno doba, traži širi spektar resursa, formi i načina obrazovanja (Starčević i Škrbić, 2014, str. 475).

Metode

Tematski ovo je istraživanje povezano s uporabom internetskih izvora među odgajateljima u procesu njihova stručnog usavršavanja, što ih vodi prema kvalitetnijem radu u predškolskim odgojno-obrazovnim institucijama. Ispitanici su trebali odgovoriti na sljedeća pitanja: koriste li se i koliko mogućnostima mrežnih tehnologija, osobito da bi poboljšali kvalitetu svog odgojno-obrazovnog rada u praksi?

Glavni je istraživački cilj utvrditi koliko se internetski izvori koriste u odnosu na konvencionalne izvore pri inoviranju odgojno-obrazovnog procesa da bi se zadovoljili standardi te postigla bolja kvaliteta predškolskog odgoja i obrazovanja.

U empirijsko-eksplorativnom istraživanju koristila se metoda sustavnog i neeksperimentalnog promatranja. Primijenjen je upitnik, konstruiran za potrebe ovog istraživanja u kojem su kombinirana pitanja zatvorenog tipa i višestrukog izbora, kao i tvrdnje na Likertovoj ljestvici. Osim empirijske metode, tumačenjem se nastojalo transformirati kvantitativne u kvalitativne podatke kako bi se dobiveni rezultati povezali s teorijskim okvirom. Moglo bi se, dakle, tvrditi da je primijenjen sustavni pristup sintezi rezultata istraživanja.

Istraživačke hipoteze

Istraživanje obuhvaća vrednovanje jedne opće hipoteze i triju radnih hipoteza. Prema općoj hipotezi (H0) uporaba je internetskih izvora, to jest mrežnih portala, među odgajateljima u funkciji poboljšanja kvalitete predškolskog odgoja i obrazovanja; radne hipoteze su sljedeće:

- H1 – stupanj uporabe internetskih izvora koji dovode do bolje kvalitete predškolskog odgoja i obrazovanja statistički je značajno različit u odnosu na varijable: rod, radno iskustvo i obrazovna razina.
- H2 – u usporedbi s konvencionalnim izvorima, iskustvom, postojećim dokumentima i materijalima, elektronički se izvori statistički značajno više koriste za poboljšanje kvalitete osobnog rada i rada institucije.
- H3 – uporaba internetskih izvora među odgajateljima statistički je različita u područjima pedagoškog rada u instituciji tako da odgajatelji, kada se koriste internetskim izvorima, daju prednost planiranju i realizaciji zadataka pri odgojno-obrazovnom radu kao najcjelovitijem i najsloženijem dijelu svojih aktivnosti.

Uzorak i instrument

Istraživački se uzorak sastojao od 293 odgajatelja iz predškolskih institucija na području općina Beograd, Vršac, Alibunar i Bela Crkva. Instrument je konstruiran za potrebe ovog istraživanja prema postavljenim hipotezama.

U empirijskom istraživanju opisanom u ovom radu tražio se odgovor na pitanje: kojom se vrstom izvora koriste odgajatelji i koliko često da bi odgovorili na *Standarde kvalitete rada u predškolskim institucijama* (Narodne novine Republike Srbije 7/2011, 68/2012), uključujući smjernice o tome kako stvoriti odgovarajuće uvjete i ostvariti kvalitetnu praksu. Standardi su temelj za akreditaciju, vrednovanje kvalitete, licenciranje i verifikaciju predškolskih institucija, kako se zahtijeva u *Strategiji razvoja obrazovanja u Srbiji do 2020. godine* (Narodne novine Republike Srbije 107/2012). Upitnik koji se kao instrument koristio u ovom istraživanju izrađen je prema sadržaju toga dokumenta.

Sljedeća su područja definirana u upitniku:
Područje 1 – predškolski kurikul, godišnji i razvojni plan
Područje 2 – obrazovno-odgojni rad
Područje 3 – dječji razvoj i napredak
Područje 4 – etos
Područje 5 – profesionalni razvoj.

Namjera je bila utvrditi kojim se vrstama resursa odgajatelji koriste za svoj profesionalni razvoj i u kojoj mjeri da bi mogli zadovoljiti postavljene standarde. Ponuđena su tri moguća odgovora, prema načelima Likertove ljestvice (5=vrlo često; 4=često; 3=povremeno, 2=rijetko; 1=nikada). Tako su za tvrdnju *Da bih poboljšao kvalitetu svog stručnog rada, koristim se* ponuđene sljedeće opcije:

- elektroničkim izvorima (internetskim stranicama i portalima, e-knjigama…)
- konvencionalnim izvorima (tiskanim materijalima i knjigama, udžbenicima…)
- osobnim radnim iskustvom, postojećom dokumentacijom i materijalima.

Postupak

Obrada podataka obuhvaćala je metode deskriptivne statistike (frekvencije, srednje vrijednosti, standardne devijacije) i metode analitičke statistike za utvrđivanje značajne razlike. Da bi se utvrdila razlika u stupnju korištenja raznim izvorima prema rodu ispitanika, koristio se T-test za nezavisne uzorke. Jednofaktorska analiza varijance za različite grupe ANOVA provedena je s ciljem određivanja razlike u stupnju korištenja elektroničkih izvora među različitim grupama ispitanika. Ispitanici su bili podijeljeni u grupe prema godinama radnog iskustva i obrazovnoj razini. Da bi provjerili statistički značajne razlike u odgovorima na različita pitanja, primijenjen je T-test za zavisne uzorke. Za potrebe analize razlika u stupnju uporabe raznih izvora u različitim područjima rada odgovori su također grupirani formirajući varijable unutar svakog od tih područja.

Rezultati i tumačenje

Da bi se provjerila opća hipoteza, testiran je stupanj uporabe elektroničkih sredstava za poboljšanje kvalitete predškolskog obrazovanja i odgoja s obzirom na sljedeće varijable: rod, obrazovna razina i radno iskustvo. Nije utvrđena statistički značajna razlika kada su analizirani rod i obrazovna razina. Rezultati su pokazali statistički značajnu razliku samo u slučaju radnog iskustva ispitanika. Stoga će ovaj vid istraživanja poslije biti predstavljen u radu.

Prije svega, razmatran je utjecaj radnog iskustva na uporabu različitih izvora u radu odgajatelja. Kao što je već navedeno, jednofaktorska analiza varijance pokazala je statistički značajnu razliku od 0,05 u primjeni elektroničkih sredstava u radu ispitanika s različitim radnim iskustvom (Sig. 0,02). Prema Cohenovu kriteriju, utvrđena je njezina srednja vrijednost (η^2= 0,06).

Slika 1

Slika 1. pokazuje da se ispitanici koji imaju manje od 5 godina radnog iskustva češće koriste elektroničkim izvorima (M=3,77), da se ispitanici s radnim iskustvom između 5 i 10 godina (M=3,57) rjeđe koriste elektroničkim izvorima, a da se ispitanici s radnim iskustvom dužim od 10 godina najrjeđe koriste elektroničkim izvorima (M=3,29). Rezultati ukazuju na to da postoji statistički značajna razlika u tome koliko se prva i treća grupa ispitanika, to jest oni s manje od 5 godina i oni s više od 10 godina radnog iskustva, koristi elektroničkim izvorima. Takva razlika nije pronađena ni između prve i druge grupe, a ni između druge i treće grupe ispitanika, što navodi na zaključak da je prva hipoteza, prema kojoj se stupanj uporabe internetskih izvora koji dovode do bolje kvalitete predškolskog obrazovanja i odgoja statistički značajno razlikuje s obzirom na rod, radno iskustvo i obrazovnu razinu, samo djelomično potvrđena.

U nastavku su predstavljeni rezultati s obzirom na područja pedagoškog rada i njihova korelacija s varijablom radno iskustvo. U tom je smislu utvrđena statistički značajna razlika kada je u pitanju *radno iskustvo*. Spomenuta je varijabla promatrana u odnosu na stupanj uporabe elektroničkih izvora prema različitim područjima, to jest području 1: predškolski kurikul, godišnji i razvojni plan. Na temelju jednofaktorske analize varijance utvrđeno je da ne postoji statistički značajna razlika u tome koliko se elektronički izvori koriste u radu odgajatelja u promatranom području. Objašnjenje tog rezultat čini se prilično jednostavnim. Razlike se nisu pojavile zbog činjenice da je to područje odgojno-obrazovnog rada jednako značajno, složeno i obavezno za sve odgajatelje tako da se oni oslanjaju jedni na druge, surađuju i razmjenjuju iskustva, osobito sa starijim odgajateljima koji prenose svoje znanje i iskustvo mlađim kolegama. Razmjena je istodobno dvosmjerna tako da mlađi odgajatelji daju potporu starijim kolegama kada je riječ o uporabi elektroničkih izvora.

S obzirom na razlike između ispitanika s različitim radnim iskustvom i stupnjem uporabe elektroničkih izvora prema različitim područjima – područje odgojno-obrazovnog rada, može se zaključiti da, prema jednofaktorskoj analizi varijance, nije utvrđena statistički značajna razlika u stupnju uporabe elektroničkih izvora u području

odgojno-obrazovnog rada između ispitanika s različitim radnim iskustvom.

Slijedi analiza razlika između ispitanika s različitim radnim iskustvom i stupnjem uporabe elektroničkih izvora prema ostalim područjima – praćenje dječjeg razvoja i obiteljske podrške. Prema jednofaktorskoj analizi varijance utvrđeno je da postoji statistički značajna razlika na razini 0,05 kada je riječ o stupnju uporabe elektroničkih izvora u radu odgajatelja u području praćenja dječjeg razvoja i podrške u obitelji između ispitanika s različitim radnim iskustvom (Sig. 0,02). Prema Cohenovu kriteriju određena je njezina srednja vrijednost (η^2= 0,06).

Slika 2.

Slika 2 pokazuje da, kada je u pitanju područje praćenja dječjeg razvoja i podrške u obitelji, ispitanici s manje od 5 godina radnog iskustva najčešće se koriste elektroničkim izvorima (M=3,73), ispitanici s radnim iskustvom između 5 i 10 godina njima se koriste rjeđe (M=3,56), a oni s radnim iskustvom dužim od 10 godina njima se koriste najrjeđe (M=3,19). Rezultati ukazuju na postojanje statistički značajne razlike u stupnju uporabe elektroničkih izvora između prve i treće grupe ispitanika, odnosno između onih koji imaju manje od 5 i onih koji imaju više od 10 godina radnog iskustva. Taj podatak nije iznenađujuć ako se ima u vidu da se mlađi odgajatelji općenito češće koriste elektroničkim izvorima u odnosu na svoje starije kolege. Čini se da su vještiji jer se njima koriste u svakodnevnom životu. To je još jedan pokazatelj da elektronički mediji trebaju biti prisutniji u predškolskim institucijama tako da svaki odgajatelj može imati jednak pristup elektroničkim izvorima informacija povezanim s njihovim neposrednim pedagoškim zadacima u predškolskim institucijama.

Što se tiče razlike među ispitanicima s različitim radnim iskustvom i stupnjem uporabe elektroničkih sredstava prema različitim područjima – etos, može se reći da je utvrđena statistički značajna razlika prema jednofaktorskoj analizi varijance od 0,05 u odnosu na stupanj uporabe elektroničkih izvora u radu odgajatelja u tome području između ispitanika s različitim radnim iskustvom (Sig. 0,02). Prema Cohenovu kriteriju utvrđeno je da je ta razlika na niskoj razini (η^2 = 0,04).

Slika 3.

S obzirom na područje etosa Slika 3 pokazuje da se ispitanici s radnim iskustvom do 5 godina češće koriste elektroničkim izvorima (M=3,8), ispitanici s radnim iskustvom od 5 do 10 godina radnog iskustva rjeđe (M=3,58), a oni s više od 10 godina radnog iskustva najrjeđe (M=3,29). Rezultati pokazuju statistički značajnu razliku u stupnju uporabe elektroničkih resursa između prve i treće grupe ispitanika, to jest između onih s manje od 5 godina i više od 10 godina radnog iskustva. Tumačenje rezultata implicira istu refleksiju kao u prijašnjim tumačenjima. Dakle, to se može objasniti općim karakteristikama generacije starijih odgajatelja kojima uporaba elektroničkih izvora nije tako jednostavna kao mlađim odgajateljima. Drugi bi se aspekt mogao odnositi na činjenicu da su oni svjesni važnosti iskustva, prihvaćenog sustava vrijednosti itd.,

što stvara profesionalnu sigurnost u slučaju iskusnijih odgajatelja koji, čini se, smatraju da im je dovoljno na poslu ono što su već naučili u tom području. Kao epistemološka teorija, konstruktivizam priznaje takav stav kao prepreku usvajanju novog znanja, što bi se u ovom slučaju moglo prihvatiti.

Konačno, razmatrane su također razlike između ispitanika s različitim radnim iskustvom i stupnjem uporabe elektroničkih izvora prema različitim područjima – profesionalni razvoj. Na temelju jednofaktorske analize varijance utvrđena je statistički značajna razlika od 0,05 u stupnju uporabe elektroničkih izvora među odgajateljima kada je u pitanju profesionalni razvoj ispitanika s različitim radnim iskustvom (Sig. 0,06). Prema Cohenovu kriteriju određena je njezina srednja vrijednost (η^2=0,08).

Slika 4

S obzirom na područje profesionalnog razvoja Slika 4. pokazuje da se ispitanici s radnim iskustvom do 5 godina najčešće koriste elektroničkim izvorima (M=4,05), zatim oni s radnim iskustvom između 5 i 10 godina (M=3,71) pa na kraju oni s radnim iskustvom dužim od 10 godina (M=3,42). Rezultati ukazuju na statistički značajnu razliku u stupnju uporabe elektroničkih resursa u području profesionalnog razvoja između prve i treće grupe ispitanika, to jest između onih s radnim iskustvom do 5 godina i onih s više od 10 godina. Takva razlika nije pronađena ni između prve i druge, a ni između druge i treće grupe ispitanika.

Kada se pogledaju razlike među ispitanicima s različitim radnim iskustvom i stupnjem uporabe elektroničkih izvora prema različitim područjima, moglo bi se zaključiti da:

- postoji statistički značajna razlika u području predškolskog kurikula, godišnjeg i razvojnog plana
- ne postoji statistički značajna razlika u području odgojno-obrazovnog rada
- postoji srednja razina utjecaja značajnosti u području praćenja dječjeg razvoja i podrške u obitelji
- postoji niska razina utjecaja značajnosti u području etosa
- postoji srednja razina utjecaja značajnosti u području profesionalnog razvoja.

Razlike između stupnja uporabe elektroničkih i ostalih izvora

Da bi se utvrdilo koriste li se elektronički više od ostalih izvora, testirane su razlike između prosječnih vrijednosti dobivenih od ispitanika s pomoću odgovora na pitanje koliko se u svom radu koriste objema vrstama izvora. T test za zavisne uzorke pokazao je statistički značajnu razliku u njihovim odgovorima na pitanje o učestalosti uporabe elektroničkih izvora (M=3,58, SD=0,86) u odnosu na pitanje o uporabi konvencionalnih izvora s ciljem unapređivanja rada (M=3,95, SD=0,59); t (290)=-6,59, P<0,0005 (u oba smjera). Prosječna razlika u FOST vrijednosti iznosila je -0,37 (SD=0,68), a 95% intervala pouzdanosti imalo je raspon od -0,49 do -0,26. Vrijednost Eta kvadrata (η^2= 0,23) pokazuje da je ta razlika vrlo značajna.

T-test za zavisne uzorke koristio se za testiranje statističke značajnosti između

prosječnih vrijednosti u odgovorima na pitanje o uporabi elektroničkih izvora u radu općenito u usporedbi s odgovorima na pitanje o primjeni iskustva, postojećih dokumenata i materijala. T-test je pokazao statistički značajnu razliku u odgovorima na pitanje o tome koliko se često ispitanici koriste elektroničkim izvorima (M=3,58, SD=0,86) u usporedbi s odgovorima na pitanje o tome koliko primjenjuju prethodno radno iskustvo te postojeću dokumentaciju i materijale da bi unaprijedili svoj rad (M=3,89, SD=0,61); t (290)=-4,29, P<0,0005 (u oba smjera). Prosječna razlika u FOST vrijednosti iznosila je -0,31 (SD=0,88), a raspon od 95 % intervala pouzdanosti kretao se od -0,46 do -0,17. Vrijednost Eta kvadrata (η^2=0,11) pokazuje da je ta razlika umjerena.

Tablica 1

Rezultati navode na zaključak da postoji statistički značajna razlika u stupnju uporabe elektroničkih izvora u odnosu na stupanj uporabe konvencionalnih izvora, iskustva, postojeće dokumentacije i materijala u radu odgajatelja. Drugim riječima, elektronički se izvori značajno manje koriste od konvencionalnih izvora, prethodnog iskustva, postojećih dokumenata i materijala da bi se poboljšala kvaliteta nečijeg rada i rada predškolske institucije općenito. Stoga je odbačena opća hipoteza (H0) prema kojoj je uporaba internetskih izvora, to jest mrežnih portala, u funkciji poboljšanja kvalitete predškolskog obrazovanja i odgoja. Štoviše, odbačena je također i prva radna hipoteza (H1), prema kojoj je stupanj uporabe internetskih izvora koji dovode do poboljšanja kvalitete predškolskog odgoja i obrazovanja statistički značajno različit s obzirom na varijable: rod, radno iskustvo i obrazovna razina.

Razlike u uporabi elektroničkih izvora unutar različitih područja rada

Da bi se utvrdilo koriste li se elektronički izvori češće u području planiranja i realizacije odgojno-obrazovnog rada (Područje 2) nego u drugim područjima, proveden je t-test za zavisne uzorke, testirana je značajnost proizašla iz odgovora na pitanja o stupnju uporabe elektroničkih izvora u području planiranja i realizacije odgojno-obrazovnog rada (Područje 2) u odnosu na preostala četiri područja (Područje 1: predškolski kurikul, godišnji i razvojni plan; Područje 3: dječji razvoj i napredak; Područje 4: etos; Područje 5: profesionalni razvoj). Slijede rezultati:

- T-test za zavisne uzorke pokazao je statistički značajnu razliku kod odgovora na pitanje o tome koliko se često ispitanici koriste elektroničkim izvorima u području planiranja i realizacije odgojno-obrazovnog rada – Područje 2 (M=3,46, SD=0,85) u usporedbi s odgovorima na pitanje o tome koliko se koriste elektroničkim izvorima u području predškolskog kurikula, godišnjeg i razvojnog plana – Područje 1 (M=3,10, SD=1,22); t (290)=-3,94 , p< 0,0005 (u oba smjera). Prosječna razlika u FOST vrijednosti iznosila je 0,36 (SD=1,10), a 95 % intervala pouzdanosti bilo je u rasponu od 0,18 do 0,54. Vrijednost Eta kvadrata (η2= 0,1) pokazuje da je ta razlika prosječna, to jest umjerena. Rezultati impliciraju da se

ispitanici koriste elektroničkim izvorima više u području planiranja i u realizaciji odgojno-obrazovnih zadataka nego u području predškolskog kurikula, godišnjeg i razvojnog plana.

- T-test za zavisne uzorke koristio se da bi se utvrdilo postoji li statistički značajna razlika kod odgovora na pitanje o tome koliko se često ispitanici koriste elektroničkim izvorima u području planiranja i realizacije odgojno-obrazovnog rada u usporedbi s odgovorima na pitanje o tome koliko se mnogo koriste elektroničkim izvorima u području nadgledanja dječjeg razvoja i obiteljske podrške. Nije utvrđena statistički značajna razlika u njihovim odgovorima na pitanje koliko se često koriste elektroničkim izvorima u području planiranja i realizacije odgojno-obrazovnog rada – Područje 2 (M=3,46, SD=0,85) u usporedbi s odgovorima na pitanje o uporabi elektroničkih izvora u području praćenja dječjeg razvoja i obiteljske potpore – Područje 3 (M=3,53, SD=0,98, t (290)=1,5, p<0,0005 (u oba smjera). Prosječna razlika u FOST vrijednosti iznosila je -0,08 (SD=0,62), a 95% intervala pouzdanosti bilo je u rasponu od -0,18 do 0,02. Rezultati stoga impliciraju da razlika u tome koliko se ispitanici koriste elektroničkim izvorima u području planiranja i u realizaciji odgojno-obrazovnih zadataka i u području praćenja dječjeg razvoja i obiteljske potpore nije statistički značajna.
- T-test za zavisne uzorke pokazao je statistički značajnu razliku kod odgovora na pitanje o tome koliko se često ispitanici koriste elektroničkim izvorima u području planiranja i realizacije odgojno-obrazovnog rada – Područje 2 (M=3,46, SD=0,85) u usporedbi s odgovorima na pitanje o tome koliko se mnogo koriste elektroničkim izvorima u području etosa – Područje 4 (M=3,59, SD=1,08); t (290)=-1,2, p<0,0005 (u oba smjera). Prosječna razlika u FOST vrijednosti iznosila je -0,14 (SD=0,83), a 95% intervala pouzdanosti bilo je u rasponu od 0,27 do 0. Vrijednost Eta kvadrata (η2= 0,1) pokazuje da je razlika mala u korist područja etosa. Ta je razlika, iako statistički značajna, prilično mala.
- Na kraju se koristio t-test na isti način kako bi se utvrdila statistički značajna razlika u odgovorima koja se odnose na profesionalni razvoj – Područje 5 (M=3,46, SD=0,85) u usporedbi s područjem planiranja i realizacije odgojno-obrazovnog rada – Područje 2 (M=3,78, SD=0,99); t (290)=-5,29 , p<0,0005 (u oba smjera). Prosječna razlika u FOST vrijednosti iznosila je -0,32 (SD=0,73), a 95% intervala pouzdanosti bilo je u rasponu od -0,44 do -0,2. Vrijednost Eta kvadrata (η^2 0,16) pokazuje da je ta razlika značajna.

Tablica 2

Uporaba elektroničkih izvora među odgajateljima statistički je značajno različita prema područjima pedagoškog rada u predškolskoj instituciji. Kada koriste elektroničke izvore u svom stručnom radu odgajatelji daju prioritet planiranju i realizaciji odgojno-obrazovnog rada kao najobuhvatnijem i najsloženijem dijelu svojih aktivnosti kao i u području svog profesionalnog razvoja. Taj rezultat dovodi do zaključka da je treća radna hipoteza potvrđena.

Zaključci

Nakon testiranja prve radne hipoteze (H1) moguće je tvrditi da je ista djelomično potvrđena. Što se tiče druge radne hipoteze (H2) zaključak je kako je ista odbačena imajući u vidu da ispitanici više koriste konvencionalne izvore, radno iskustvo te postojeću dokumentaciju i materijale nego elektroničke izvore da bi poboljšali kvalitetu svog rada i rada predškolskih institucija.

Nakon testiranja treće radne hipoteze (H3) moglo bi se zaključiti da je ista potvrđena. Naime, razmatrajući rezultate istraživanja koji pokazuju koliko se elektronički izvori koriste u različitim područjima rada, može se zaključiti da ispitanici koriste elektroničke izvore više u području odgojno-obrazovnog rada nego u području predškolskog kurikuluma, godišnjeg i razvojnog plana. Istovremeno, podjednako koriste elektroničke izvore u područjima odgojno-obrazovnog rada i praćenja dječjeg razvoja i podrške u obitelji, te u područjima etosa i profesionalnog razvoja.

Implikacije provedenog istraživanja

Polazeći od rezultata provedenog istraživanja, trebalo bi razmotriti zašto se elektronički izvori ne koriste češće od ostalih, to jest konvencionalnih izvora, iskustva te postojećih dokumenata i materijala. Razlozi bi se mogli pronaći u sljedećem:

- odgajatelji nisu zainteresirani za elektroničke izvore;
- odgajatelji ne raspolažu odgovarajućim znanjem i vještinama potrebnim za uporabu elektroničkih izvora;
- predškolske institucije nemaju odgovarajuće tehničke preduvjete za uporabu elektroničkih izvora;
- ne postoje odgovarajući elektronički izvori koje bi odgajatelji mogli koristiti u funkciji poboljšanja kvalitete svog rada.

Gore navedene pretpostavke već su na neki način razmatrane u radu. Statistička obrada podataka pokazala je naime da duži radni staž dovodi do intenzivnijeg oslanjanja na osobno iskustvo i dokumentaciju. Drugim riječima, što su iskusniji, odgajatelji manje koriste elektroničke izvore. Stariji odgajatelji vremenom postaju rigidniji, postižu određeni osjećaj nadmoći u radu s predškolskom djecom i ne tragaju za načinima unapređenja kvalitete svog rada. Nažalost, nisu u pravu ako se ima u vidu da djeca s kojom rade ne ovise samo o njima i svojim roditeljima kao glavnim izvorima informacija. Djeca usvajaju znanje pomoću suvremenih medija, a to često nadilazi znanje kojim raspolažu odgajatelji. Moguće je također primijetiti da mlađi ispitanici pokazuju veće zanimanje za uporabu elektroničkih izvora općenito. Stoga se može očekivati da će se elektronički izvori intenzivnije koristiti u budućnosti da bi se unaprijedila kvaliteta rada.

Druga se pretpostavka može komentirati na isti način, to jest mlađi odgajatelji raspolažu većim znanjem i vještinama kada je uporaba elektroničkih izvora u pitanju, čak iako se zna da se odgajateljima ne nudi nikakav program stručnog usavršavanja

koji bi se odnosio na korištenje digitalnih resursa u radu s djecom; u isto vrijeme, ne postoji nikakav oblik internetskog stručnog usavršavanja ili e-učenja za odgajatelje (Pavlović Breneselović, 2012, str. 321). S druge strane, odgajatelji trebaju učiti tijekom cijelog života i stalno stjecati nova znanja i vještine kroz razne oblike edukacije, kao što su IT tečajevi, IT seminari i razne mrežne stranice, da bi razvili stručne kompetencije za odgajatelje koji će primjenjivati IKT u radu s predškolskom djecom (Veličković, 2014, str. 377). Nužan je veći angažman Ministarstva, raznih agencija, stručnjaka za IKT, da bi se pronašao i primijenio pedagoško-didaktički oblik hermeneutičkih strategija i strategija za kreativno učenje koji će utjecati na povećanje kvalitete odgojno-obrazovnog rada.

Budući da nema dostupnih podataka o broju predškolskih institucija, zaposlenika, itd., nije moguće utvrditi kako su te institucije informatički opremljene. Iako samo 104 ispitanika (35,6%) tvrde da koriste računalo kod kuće i na poslu, to ne isključuje mogućnost dostupnosti elektroničke opreme većem broju odgajatelja u predškolskim institucijama, ali oni ju jednostavno ne koriste. Potrebno je također očekivati da bi odgajatelji bili motiviraniji koristiti spomenutu opremu, pod uvjetom da su zainteresirani i dobro obučeni, da su predškolske institucije bolje opremljene u suvremenom smislu.

Konačno, na internetu dakako postoje odgovarajući elektronički izvori koje bi odgajatelji mogli koristiti za unapređivanje kvalitete svog rada. Oni su, međutim, često na stranom (engleskom) jeziku. Osim jezične prepreke, problem može također biti u sadržaju ako se ima u vidu da su oni prilagođeni sustavu predškolskog obrazovanja i odgoja u anglosaksonskim zemljama, koji se razlikuje od onog u Srbiji. Portali na srpskom jeziku pokrivaju određena područja rada u predškolskim institucijama, ali ne nude odgovarajući, odnosno sveobuhvatan pristup navedenom problemu, što ukazuje na hitnu potrebu stvaranja odgovarajućih portala za predškolsko obrazovanje s obzirom na njihovu popularnost kao na jedno od mogućih rješenja za poboljšanje kvalitete rada u predškolskim institucijama u Srbiji. Navedenom ide u prilog činjenica da opća i dvije radne hipoteze nisu potvrđene.