



**BALKAN SOCIETY FOR PEDAGOGY AND EDUCATION
LUMINA - THE UNIVERSITY OF SOUTH-EAST EUROPE, BUCHAREST**

**Viorel Nicolescu
Filip Stanciu
Marin Drămnescu
(Eds.)**

**15th International Conference
EDUCATIONAL REFORM IN THE 21st CENTURY
IN BALKAN COUNTRIES**

**Education
and
Pedagogy
in Balkan
Countries
13**

Bucharest, 2014
Lumina Publishing

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**28 - 30 June, 2012
Bucharest, Romania**



Constantin Brâncuși, Table of Silence, Târgu Jiu, 1938

**Lumina Publishing
Bucharest, 2014**

ISBN 978-606-93743-0-6

Lumina Publishing

Descriere CIP a Bibliotecii Naționale a României
INTERNATIONAL CONFERENCE EDUCATIONAL REFORM
IN THE 21ST CENTURY IN BALKAN COUNTRIES (15; 2012; București)
15th International Conference educational reform in the 21st century in Balkan
countries: 28-30 June, Bucharest, Romania/Viorel Nicolescu, Filip Stanciu, Marin
Drămnescu (eds.). - București: Lumina Publishing, 2014
ISBN 978-606-93743-0-6

I. Nicolescu, Viorel (ed.)

II. Stanciu, Filip (ed.)

III. Drămnescu, Marin (ed.)

37(4)(063)

LUMINA-THE UNIVERSITY OF SOUTH-EAST EUROPE

Șos. Colentina nr. 64b, Sector 2

021187 București

România

Cover designed by Assoc. Prof. Dimitris Germanos

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CARDS PROJECT'S EFFECTS ON THE CONTINUING PROFESSIONAL EDUCATION OF TEACHERS IN SERBIA

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Abstract

This paper explores the effects of the programs for continuing professional education (CPE) of teachers involved in CARDS-VET Project in Serbia (as a part of reform processes in the VET domain). A main objective of this empirical study was to explore effects of CARDS-CPE programs on planning and managing similar programs in future.

As main indicators of effects of the CARDS-CPE programs we considered perception of improvement of personal characteristics relevant to profession, changes in basic professional competences, improvement of interpersonal communication competences, and improvement of competences for education planning and management. These effects were investigated considering respondents' beliefs about their own profession, previous experiences in CPE, perception of their own professional experience, expressed needs to participate in other CPE programs, and considering some bio-social and work-related characteristics of the respondents.

The collected data was subjected to principal axis analysis, with the Varimax rotation, Canonical Correlation Analysis and Discriminant Analysis. Research findings imply importance of careful andragogical design of CPE programs based on teacher beliefs, their learning needs and some bio-social and work-related characteristics.

Keywords: continuing professional education of teachers, continuing professional development programs, teachers, CARDS VET Project in Serbia

Introduction

Continuing professional education (CPE) is a dynamic, long-term learning process with influence on professional practice, and with different benefits to participants (maintaining expertise, protection of recognized qualifications). According to Day and Sachs (2004, p. 8-9) CPE "is a term used to describe all activities in which teachers engage during the course of a career which are designed to enhance their work". They identify four conceptions of knowledge associated with teachers' learning and development: knowledge-for-practice, knowledge-of-practice, knowledge-in-practice and knowledge of self, and three current models of CPE – deficit model in which it was assumed that teachers needed to be provided with something (knowledge, skills) which they did not already have, aspirational model which acknowledges that teachers who are already effective at what they do can build on this, and 'post-technocratic' model which emphasizes a symbiotic relationship between individual and organizational needs (Ibidem).

Characteristics of CPE listed in literature are diversified. Some authors consider CPE could be compulsory or voluntary, employer or individual responsibility, oriented toward personal development or organizational learning, values driven or pragmatic development, journey or exploration, part of the process of reform, producing power and identity of profession (Cervero, Wilson, et al., 2001; Scales et al., 2011).

In the broader sense, CPE of teachers "covering all forms of learning undertaken by experienced teachers from courses to private reading to job shadowing", while in narrow sense it

assumes "moving teachers forward in knowledge or skills" (Craft, 2000, p. 9). Main aims of CPE programs, therefore are: personal development of teachers, "improvement for the maximum impact of professional development on classroom practice" (Blandford, 2000, in: *Ibid.*, p. 15). According to Bolam (1986) these programs may vary by different aspects (purpose, location, length, methods, and levels of impact).

Purpose of CPE programs may be defined as assurance of professional competence, improvement of teacher's and/or school's performance, way of teacher's career development, increasing of professional knowledge, improvement of teacher's education, etc. Due to location one could distinguish off-site, school-based, and school-focused CPE programs. Opportunities of CPE may vary from long (1-3 years), short (2-20 days), to incidental (1 day or less). Direct impact could include individual teacher and/or whole staff, team, department or school performance, while indirect impact assumes children's learning and achievement, colleagues/teams, etc.

Ovesni (2009) consider that CPE have very important and complex andragogical dimension as a part of the process of professionalization – in promotion of professional associations, obtaining both internal and external autonomy, in the process of professional standardization, in development of professional affiliation and identity thus forming specific professional subculture, in actualization of professional knowledge. Cervero (1992) underlines different cores of knowledge one should obtain in the CPE programs – basic skills, application of theoretical knowledge and/or basic principles, critical analysis and free actions based on empirical insights.

Methodology

Several groups of skills and competences, and personal characteristics one should develop in CPE programs were distinguished based on such theoretical perspectives, and on the evidence about current CARDS-CPE programs: personal characteristics relevant for professional practice, basic professional skills and competences, interpersonal skills related to colleagues, interpersonal skills related to students, organizational skills and competences, managerial skills and competences.

One principal and few secondary questions guided this study: What are main effects of CARDS-CPE programs on planning and managing similar programs in future? Which professional and bio-social characteristics influence skills, competences, and personal characteristics one should develop in CPE programs? Which beliefs about own profession and reasons for engagement into CARDS-CPE programs dominated among respondents? Which relationship beliefs about teacher profession and about participation in CARDS-CPE programs with personal characteristics relevant for professional practice, traces paths for obtaining: basic professional skills and competences, interpersonal skills related to colleagues, interpersonal skills related to students, and organizational and managerial skills and competences?

In this study we used the survey research method. Data was collected by complex instrument which included survey and five-point Likert-type scales, very high in reliability (Cronbach's $\alpha=0.972$; aver.inter-item.corr.=0.00), which suggest acceptability in social sciences researches. Consensual content validity was established by a cohort of 3 experts in the field of adult education and methodology of social science research (Delphi method). The respondents were 151 teachers, employed in the VET-domain in Serbia, who participated in CARDS-Project.

Besides information on aforementioned main indicators of effects of the CARDS-CPE programs, we collected data about some bio-social (gender, age, marital status) and work-related characteristics of the sample -- level of education; work-place; length of school-related career, distinguished at five broad phases, as Fessler and Christensen (1992) suggested; teaching subject. Additionally, we collected data about respondents' beliefs about own profession and reasons for engagement into CARDS-CPE programs, based on Pejatovic (1994), as well as data about previous experiences in CPE, perception of own professional experience, expressed needs to participate in other CPE programs, and considering some bio-social and work-related characteristics of the respondents.

Findings

Results showed us that gender, marital status, work-place, and length of school-related career haven't influence on skills, competences, and personal characteristics one should develop in CPE programs significant on $p < 0.01$ level.

Table 1 Wilks' Lambda -- tests on functions -- results significant on $p < 0.01$ level

	Wilks' λ	Chi-squa	df	Sig.
age	0.117	248.052	195.000	0.006
level of education	0.037	375.333	260.000	0.000
school-related career	0.059	325.784	260.000	0.003
teaching subject	0.205	176.001	130.000	0.004

On the other hand, as Table 1 indicates, based on age, Discriminant Analysis showed one function significant on $p < 0.01$ level, which allowed us to distinguish group of 31-40 years old respondents who perceived development of communication skills, motivation for collaboration with colleagues, conflict management, counseling skills, problem solving, knowledge transfer, and collaboration and partnership during participation in CARDS-CPE programs.

Based on level of education, we were allowed, among four others to distinguish a group of the respondents who obtained faculty diploma who perceived that after participation in CARDS-CPE programs that they still can not perform Power-Point presentations, to develop relationship with students based on collaboration and partnership, to develop relevant learning resources, and to transfer knowledge to their colleagues, which strongly indicates necessity of integration of andragogical, pedagogical, didactic and methodology-relevant actual knowledge both in graduate studies curriculum and into CPE programs for teachers in VETdomain.

Analysis related to school-related career opened possibility to distinguish group significant on $p < 0.01$ level of "beginners" who perceived that during participation in CARDS-CPE programs they developed IT literacy related skills. Differentiation among respondents according to teaching subject revealed significantly on $p < 0.01$ level that one of two distinguished subgroups (of teachers who do not teach social science and humanities related subjects) perceived that they developed collaboration and partnership with colleagues, team work skills, skills of sharing information, performance of Power-Point presentations, and self-respect during participation in CARDS-CPE programs.

Table 2 Eigenvalues -- Extraction: Principal axis factoring

		% total	Cumul.	Cumul.
	Eigenval	Variance	Eigenval	%
1	2.991535	23.01	2.991535	23.01
2	2.025398	15.58	5.016933	38.59

Applied principal axis analysis, with the Varimax rotation allowed extraction of two dominant reasons for engagement into CARDS-CPE programs (Table 2). First extracted component (social pressure in organization) explains 23.01% of common variance, while second extracted component (improvement of my own skills and competences) explains additionally 15.58% of common variance. Same statistical procedure allowed extraction of three dominant beliefs about own profession after respondents take part in CARDS-CPE programs (Table 3).

First extracted component (having important influence on students) explains even 25.66% of common variance; second extracted component (importance of theoretical knowledge for teacher's profession) explains 7.10% of common variance, while third extracted component (importance of practical knowledge for teacher's profession) explains 5.98% of common variance.

Table 3 Eigenvalues -- Extraction: Principal axis factoring

		% total	Cumul.	Cumul.
	Eigenval	Variance	Eigenval	%
1	4.875	25.66	4.875	25.66
2	1.349	7.10	6.224	32.76
3	1.136	5.98	7.360	38.74

These results, which imply relevance of social pressure in organization, and raising awareness of: necessity for improvement of professional skills and competences, obtaining relevant theoretical and practical knowledge, as well as raising self-confidence as main incentives for participation in CPE programs, and for professionalization of teachers', what corresponds to many research findings (detailed in: Ovesni, 2009).

The most interesting findings were obtained through Canonical Correlation Analysis. Reasons for engagement into CARDS-CPE programs (Table 4) allowed extraction of one canonical function significant on $p < 0.01$ level, which indicated (considering personal characteristics) that possibility of improvement: credibility among colleagues, professional status, professional practice, professional skills and competences, pleasure, curiosity, and lucrative reasons have influence could improve self-confidence, self-assurance, self-respect, autonomy, tolerance, openness, independence, self-importance, and to raise levels of aspirations; needs for success, flexibility.

Table 4 Chi-Square Tests with Successive Roots Removed

	CI.R	CI.R-sqr.	Chi-sqr.	df	p	λ'
personal characteristics	0.712	0.507	281.566	169.000	0.000	0.127
	0.636	0.404	250.351	143.000	0.000	0.162
	0.515	0.266	179.122	120.000	0.000	0.272
basic professional skills	0.485	0.235	136.663	99.000	0.007	0.370
	0.656	0.430	282.247	156.000	0.000	0.127
interpersonal skills w. colleague	0.604	0.365	205.293	132.000	0.000	0.223
organizational skills	0.674	0.454	191.292	104.000	0.000	0.253

Further analysis of the reasons for engagement into CARDS-CPE programs allowed extraction of three canonical function significant on $p < 0.01$ level, which indicated that possibility of improvement of: professional status, professional practice, credibility among colleagues, and pleasure are important incentives in development basic professional skills in general, while other extracted functions indicated influence of perceived possibility of improvement of professional skills and competences onto logical reasoning, and perceived fear of loosing job at obtaining IT skills.

Analysis of the reasons for engagement into CARDS-CPE programs also allowed extraction of two canonical function significant on $p < 0.01$ level, which indicated that perceived possibility of improvement of professional status, credibility among colleagues, and socializing with colleagues indicated influence of perceived possibility of improvement of interpersonal skills with colleagues in general, and that pleasure and lack of social pressure in organization, and obligatory participation in CARDS-CPE programs indicated influence of perceived possibility of improvement of cooperation among colleagues and sharing relevant information, which are prerequisites for development organization climate supportive for learning.

Also, analysis of the reasons for engagement into CARDS-CPE programs allowed extraction of one canonical function significant on $p < 0.01$ level, which indicated that curiosity, pleasure, and possibility of socializing with colleagues have impact on development of some organizational skills (usage of IT, perform Power-Point presentations, develop relevant learning resources).

Canonical Correlation Analysis of beliefs about own profession after respondents take part in CARDS-CPE programs (Table 5) allowed extraction of:

	CLR	CLR-sqr	Chi-sqr.	df	p	λ'
personal characteristics	0.751	0.565	463.331	247.000	0.000	0.031
	0.680	0.462	352.352	216.000	0.000	0.071
	0.612	0.375	269.554	187.000	0.000	0.133
	0.549	0.301	206.779	160.000	0.008	0.212
basic professional skills	0.675	0.456	315.721	209.000	0.000	0.096
	0.623	0.388	233.786	180.000	0.004	0.176
interpersonal skills w. colleagues	0.667	0.444	364.324	228.000	0.000	0.066
	0.624	0.390	285.609	198.000	0.000	0.119
	0.522	0.273	219.392	170.000	0.007	0.195
interpersonal skills w. students	0.728	0.531	334.272	209.000	0.000	0.083
	0.620	0.385	232.523	180.000	0.005	0.177
organizational skills	0.715	0.511	315.984	152.000	0.000	0.098
	0.615	0.379	218.622	126.000	0.000	0.200
	0.521	0.272	153.884	102.000	0.001	0.323
education management skills	0.764	0.583	363.467	190.000	0.000	0.068
	0.614	0.376	245.265	162.000	0.000	0.163
	0.579	0.335	181.495	136.000	0.006	0.261

- Four canonical function significant on $p < 0.01$ level, which indicated correlation of perception of: (a) easier obtaining relevant information, increased influence on parents and local community with increased self-confidence, self-assurance, self-respect, and self-importance, (b) importance of theoretical knowledge with perception of higher level of responsibility and professional autonomy, (c) decreased influence on students with independence, and (d) correlation of reduced perception of colleagues as main resources of professional knowledge with raising level of needs for success.

- Two canonical function significant on $p < 0.01$ level, which indicated (a) correlation of perception of CARDS-CPE programs as main resources of professional knowledge, and perception of easier obtaining relevant information with perception of obtained basic professional skills in general, and (b) perception of decreased influence on management with obtained IT skills.

- Three canonical function significant on $p < 0.01$ level, which indicated correlation of perception of (a) increased influence on colleagues, student's parents, and management with improvement of professional competition skills, (b) professional incompetence with perception of lack of cooperation, and collaboration with colleagues, and (c) CARDS-CPE programs as main resources of professional knowledge, and easier obtaining relevant information with administrative duties.

- Two canonical function significant on $p < 0.01$ level, which indicated (a) correlation of perception of easier obtaining relevant information and self-education as generator of relevant knowledge with increase of cooperation, team-work, and supportive behavior with students; and (b) correlation of perception of increased influence on student's parents with increase of collaboration and partnership related to students.

- Three canonical function significant on $p < 0.01$ level, which indicated correlation of perception of (a) easier obtaining relevant information, relevance of practical knowledge, and CARDS-CPE programs as main resources of professional knowledge with organizational skills in general, (b) lack of

professional knowledge obtained at faculty and in professional practice with incompetence of planning of learning outcomes, and (c) decreased influence on colleagues with competence for educational planning.

• Three canonical function significant on $p < 0.01$ level, which indicated correlation of perception of (a) easier obtaining relevant information, and possibility for career development with education management skills in general, (b) professional knowledge obtained at faculty with problem solving approach usage, and (c) theoretical knowledge as main resources of professional knowledge with individual approach usage.

Conclusion

The research findings strongly suggest continuing involvement in carefully designed CPE programs, especially younger VET teachers, those who haven't obtained MA or PhD degrees, and those who haven't obtained adequate teaching-related knowledge during professional preparation. Social pressure in organization, need for professional improvement, awareness of importance of professional knowledge and basic knowledge about pedagogy and andragogy are most important incentives for participation in CPE programs. Participation in CARDS-CPE programs helped teachers to raise levels of self-confidence, self-assurance, self-respect, autonomy, tolerance, openness, independence, self-importance, aspirations, needs for success, flexibility.

Moreover, one of main outcomes of analyzing effects of CARDS-CPE programs on planning and managing similar programs in future is that significant efforts should be focused at development of learning supportive organizational climate with integration of elements of learning organization concept, i.e. commitment, team work, sharing vision, cooperation, constructive problem solving, clear communication, critical thinking, autonomy. Such approach assumes integration of broader spectrum of andragogical, pedagogical, psychological, and human resource development knowledge.

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ISBN 978-606-93743-0-3



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