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School management innovation and principal support systems: toward the agenda for Croatian school reform

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ABSTRACT

In this paper, we discuss if the current educational management practices in Croatian schools are in line with the constructivist prescriptions and what is their relationship with the available principal support tools. Our research is based on previous empirical results, related to the perceived needs of school principals for training and support. Namely, in 2011, the surveyed school principals required additional competencies to be developed in the fields of school marketing and management. At that time, the primary school principals are being surveyed, related to their managerial practices and the obtained results are interpreted in the context of the already announced, comprehensive school reform in Croatia, designed according to the constructivist educational theories. The empirical results demonstrate that the managerial practices of Croatian primary schools are not compatible with the constructivist theory of education. One group of principals (27.6%) have adequate delegation skills and focus on the specific fields of project management and school marketing, while the majority demonstrate one (or several) forms of ineffective practices. There is limited empirical evidence of the statistically significant differences in the usage of principal support tools/approaches, although the specific usage patterns have been identified.

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1. Introduction

Previous empirical research in Croatia has demonstrated the inadequate orientation of school principals towards external stakeholders (Alfrević, Pavičić, & Kutleša, 2008), which has been interpreted in terms of focusing on the internal school environment, instead of opening up the school environment to the relevant external changes. This might not be the effect of principals' inadequate competencies, since a different empirical survey showed that the stakeholders from different levels of the Croatian educational system perceive cooperation as valuable and desirable (Kovač & Buchberger, 2013). Although school principals were not included in this study, the surveyed teachers and university professors employed at the teacher training colleges/universities, assessed the tools and approaches for development

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of cooperation with the key external school stakeholders as inadequate and offered several policy recommendations (Kovač & Buchberger, 2013).

In addition, Croatian school principals were surveyed in 2010, and the empirical results implied that additional principal training and support in the fields of school marketing and management would be helpful in supporting innovation and opening up schools to the external environment (Alfirević, Pavičić, Mihanović, & Relja, 2011). These empirical findings created an inadequate foundation for the curricular reform implementation, as announced by the Croatian Ministry of Science, Education and Sports (MSES), at the time of writing this paper.

Nevertheless, the reform of school management, as a particular field of school reform, has not been fully conceptualised since 2005, when MSES initiated the idea that the job of a school principal should become a licenced profession. This activity was performed in the context of the overall 'Europeanisation' of the Croatian school system, within the efforts to join the European Union, although some limited national efforts for professionalisation and licencing of school principals did exist in the early 1990s.¹

Initial documents, produced by a MSES appointed committee, were followed by several activities and projects. An important milestone had been a workshop on principal professionalisation (Principals' Training and School Management in Croatia: Enhancing Quality and Relevance), organised by the World Bank in June 2007 and involving the MSES and Croatian educational agencies. In the 2007–2009 period, the Croatian Education and Teacher Training Agency² conducted an international project, in cooperation with a specialised Dutch institution, *Nederlandse School voor Onderwijsmanagement*, which already had conducted several successful projects in the wider region (Karstanje & Webber, 2008). The project involved participative initial training and the production of literature, intended for managerial development of school principals.³ Although the principal professionalisation remained on the agenda and has been included in the current Croatian strategy for education, science and technology,⁴ these institutional efforts have not led to an officially accepted programme of principal professionalisation and licencing. An extensive offer of different seminars for school principals are being currently offered by the Education and Teacher Training Agency, as well as by the principals' professional associations.

Several research groups have been working on this issue in Croatia, including the authors of this paper, who have also developed managerial literature for school principals (Alfirević, Pavičić, Kutleša, & Matković, 2010) and launched a new research institution, aimed at understanding the contribution of educational management to school effectiveness.⁵ The still unresolved place and role of principals' professionalisation in the overall educational reform, therefore, remains an interesting issue for the educational public in the wider region, but should be also viewed in the context of developing the regional knowledge base of the discipline of educational management.

2. Theoretical background

Contemporary educational theory confirms the importance of constructivism, which is translated to the requirements of problem- and project-based learning, as well as other teaching approaches, which try to overcome the traditional paradigm of a learner as a passive recipient of information. The learners are supposed to take an active role in the learning process and internalise new knowledge by active interaction with the educator and the

curriculum being taught. According to the constructivist viewpoint, the learning process is highly embedded into the learners' social world (i.e., context) and based on their mental constructions, which are being further developed during the learning process. Towards the end of the 1990s, exogenous constructivism took the central role in the practices and policies, related to the reform of teaching. It emphasises the notion of learning as both a process of information processing, as well as a social process, which depends on the interaction of a learner with his/her social environment (Harris & Graham, 1994).

As for the practice of constructivism as a teaching paradigm, but also as a new approach to involving students in all social processes in the school environment, both a high level of student motivation and a high quality school environment are required (Jordan, Carlile, & Stack, 2008). The transformation of teachers' and students' roles is also expected, as the 'constructivist school' should be based on the cooperation among all relevant stakeholders. In this context, the role of school principals is also being transformed through the innovation of school management practices (Dimmock, 1993). The 'constructivist school principals' are expected to create positive culture and change, as well as to provide leadership and comprehensive development opportunities to teachers and other school employees (Salazar, 2013; Williams-Boyd, 2002). The constructivist school leadership is all about leading and sustaining conversations with stakeholders, based on the fundamental assumption that children's lives are not of 'lesser' value, which requires the values of trust, democracy and authenticity to be shared among children and adults in the school environment. The 'constructivist school' is infused by these values, which shape its leadership and organisational culture, as well as its relationships with the local community and its social actors (Lambert et al., 2002).

This theoretical approach has been accepted by many educational policy actors in the EU, along with the Croatian policy-makers, although the concepts used might be referred to in different ways, including the terms of 'student involvement', 'empowerment', etc. (Levin, 2000). In the national context, and in view of these principles, the Croatian National Educational Standard (CNES) and the National Curriculum Framework (for pre-school, general compulsory and secondary education) have been developed during the 2000s (MSES – Ministry of Science, Education & Sports, 2007, 2009).

On the other hand, the practices and behaviours of principals in Croatian schools have not been evaluated along the lines of the constructivist theory, while a comprehensive reform of school curricula has been announced in early 2015.⁶ The official position has not been described as 'constructivism', although the initial public discussion, as well as the presentations, held by the reform working group (MSES – Ministry of Science, Education & Sports, 2015) hint at its constructionist orientation. This leads to the need for evaluation of Croatian school principals' practices and opportunities for their development toward the 'constructivist principal/leader' ideal type.

Therefore, it is useful to use the dichotomy of traditional (non-constructivist) versus contemporary (constructivist) managerial/principal work practices. These practices are assessed and categorised in constructivist terms, if they are 'anchored' in the social context of the school. The context can be described by three dimensions: the overall (educational) reform patterns and the characteristics of the social environments of a school and its local community (Hausman, Crow, & Sperry, 2000). Simultaneously, another criterion can be applied: if a principal practice/activity is oriented toward the higher level of school social embeddedness, i.e. it aims to develop better stakeholder relationships, it can be assessed as

a 'constructivist' one. It is important to note that this notion is utterly comparable to the idea of market orientation and balancing stakeholder interests, as practiced by educational institutions (Oplatka & Hemsley-Brown, 2007; Pavičić, Alfirević, & Mihanović, 2009; Siu & Wilson, 1998).

In addition to the beneficial effects for stakeholder relationships, principal practices need to address the concerns related to ensuring school effectiveness. In this paper, we will not delve into the common school effectiveness line of research (Teddlie & Reynolds, 2000), but rather refer to the social constructivist interpretation of organisational and managerial effectiveness, which has become widely accepted across the non-profit sector. Namely, non-profit organisations are facing the challenge of realising their mission, within the resource (and other) constraints, in the complex social context, which might be placing different and conflicting demands on the organisations' administrators. For the society at large (i.e., for a wide range of stakeholders), to assess an organisation as (in)effective, the only realistic way is to accept the socially constructed performance measures/indicators (Herman & Renz, 1997). Since stakeholders have a varying degree of power and influence over resource allocation, an organisation needs to concurrently develop and implement different forms of organisational response(s), considering the needs and requirement of relevant stakeholders/constituencies (Padanyi & Gainer, 2004).

There are many pieces of advice, extended to non-profit administrators, related to the nature of non-profit performance's social construction. Those include the opening up of organisation to the external stakeholders and the social context, extensive communications, as well as the application of the 'good practices' (Herman & Renz, 2008). The choice of 'good' (which might be even referred to as the 'best') practices is always debatable, but a range of widely accepted management tools and approaches usually 'settles' in the minds of a wide class of non-profit executives and stakeholders. They become generally appreciated as leading a wide range of organisations toward the adequate performance. In this way, a rather stable perception of practices, which seem to be working, is socially constructed. Those are, further, both believed to produce good performance and create a difference between 'ineffective' and 'effective' organisations (Herman & Renz, 1998). This is the rationale for including a set of managerial practices, considered to be 'contemporary' and 'modern' among the Croatian educational system stakeholders, to the 'constructivist toolbox' of principal activities, deemed relevant for this study.

The constructivist practices of school principals are deemed as essential for the transformation of a 'traditional' into a 'contemporary' school, along the lines of the proposed, comprehensive educational reform. Nevertheless, there have been some previous empirical results, demonstrating that Croatian principles were not ready to accept the constructivist agenda of educational management. This is the reason why we chose to address the following research questions: Are current school management practices in line with the constructivist prescriptions and what is their relationship with the available principal support tools?

The empirical answer to these research questions could not only uncover the patterns and trends of educational management in Croatian schools, but also contribute to modelling the reform of the Croatian educational system.

Table 1. Theoretical model of contemporary (constructivist) versus traditional (non-constructivist) principal practices.

Innovative practices of school principals		Traditional and administrative practices of school principals	
Fundraising and financing (in addition to traditional sources)	'Market research' in local community	Reporting on school activities to authorities	Correspondence & administrative tasks
Project management	Public relations with school stakeholders	Reporting on school finances to authorities	Controlling of everyday activities
Institutional and project evaluations	Public relations, related to school projects	Scheduling tasks	Controlling of other activities
Co-operation with the economy	Media relations	Contacts with the Ministry of science & education, other state institutions, local administration	
Planning future activities and projects		Involvement into accounting	

Source: Educational experts' evaluation.

3. Methodology

Since primary and secondary schools do not share the same characteristics of the educational process, while additional differences may emerge among grammar and vocational (secondary) schools, three separate empirical studies are planned on the topic of 'constructivist' principal practices in the Croatian school system. In this initial study, the practices of primary school principals are covered.

Before the empirical study was conducted, two educational experts from the Croatian Scientific centre of excellence for school effectiveness and management have been asked to assess the principals' practices, based on previous research and their insights. The work of two experts can be summarised by Table 1, which demonstrates the assessment of 'traditional' (non-constructivist), versus 'contemporary' (constructivist) practices. The obtained results are somewhat subjective since the very theoretical background (discussed in the previous section) emphasises the social constructivist nature of the 'right' practices selection. However, the expert assessment has been accepted by a wide range of stakeholders involved in the activities of the Croatian Scientific centre of excellence for school effectiveness and management.

This qualitative assessment has been used to measure the principals' practices in Croatian primary schools, while the operationalisation and measurement for the principals' support approaches/tools are based on previously published research (Alfirević et al., 2011). The standard, five-level measurement scales have been used, pending future research on psychological validation. The high value of the Cronbach alpha (0.912) can be used as the first approximation of such a validity, although it measures only the internal consistency of the used items. A simple questionnaire, using the selected items and the measurement scales, has been distributed by multiple distribution channels, to the randomly selected sample of Croatian primary schools.

The empirical research has been conducted in the period between February and April 2015 and has not been linked to the previous survey, i.e., it was not designed as longitudinal research. The previous research results were used as a significant input for the design of the new survey and one of the guidelines in the interpretation of new empirical data.

Table 2. Managerial practices in Croatian schools.

Contemporary practices	Score	Traditional practices	Score
Fundraising and financing (in addition to traditional sources)	3.74	Reporting on school activities to authorities	3.40
Project management	3.30	Reporting on school finances to authorities	3.20
Institutional and project evaluations	3.39	Scheduling tasks	3.74
Co-operation with the economy	3.12	Contacts with the Ministry of science & education, other state institutions, local administration	3.67
Planning future activities and projects	3.73	Involvement into accounting	2.76
'Market research' in local community	3.15	Correspondence & administrative tasks	3.96
Public relations with school stakeholders	3.86	Controlling of everyday activities	4.42
Public relations, related to school projects	3.55	Controlling of other activities	4.27
Media relations	3.37		

Source: Research results.

The population of Croatian primary schools is officially defined by the Ministry of Science, Education and Sports (MSES) and is available over the internet,⁷ in an Excel file, containing 887 entries. We have randomly selected one third of the sampling frame (i.e., 296 schools), whose principals were invited to fill in the questionnaire. The majority of questionnaires were distributed by email, although some were printed and mailed, while a minor amount of questionnaires were distributed by personal contact. We obtained a total of 170 completed questionnaires, which brings the response rate to the satisfactory value of 57.43%. The collected data were coded and entered into the IBM SPSS/PASW software package, which was used for the statistical analysis.

4. Results of empirical research

First, the descriptive statistics on the managerial practices (Table 2) and the usage of the available principal support tools/systems were computed (Table 3). The usage of arithmetic means can be accepted due to the perceptive equidistance of each level of the measurement scales.

The obtained results demonstrate that 'non-constructivist' ('traditional') practices are still in the surveyed schools: on the five-level scale, usage of principals' working time is scored at 3.68 for 'non-constructivist' and at 3.47 for 'constructivist' practices. The most important practices are controlling and administrative tasks. On the other hand, principals are being heavily engaged in some 'constructivist' practices, including public relations in their communities, planning projects and fundraising (to obtain additional funds, with the traditional financing from the public budget still being in place).

For all 'constructivist' practices, the overall mean value is 3.46 (with the standard deviation of 0.61), while the same value for 'non-constructivist' practices equals 3.68 (with the standard deviation of 0.49). The statistically significant difference between the means for the two groups of principal practices is reported by the paired samples *t*-test ($t=5.836$; $p=0.000$). This empirical finding answers the first part of the research question in terms of the statistically significant predominance of traditional ('non-constructivist') principal practices in the Croatian primary schools.

The usage of the available principal support tools/systems is rather low, with the official information session/events (as organised by the Croatian Ministry of science, education and sports, Education and teacher training agency, etc.), information sessions/events, organised

Table 3. Managerial support tools/systems and their usage.

Support tool/approach	Score	Support tool/approach	Score
Receiving information from the non-profit sector	2.67	Organised, in-house training	2.98
Receiving information from 'official channels' (Ministry, educational agencies, etc.)	3.12	Training on educational topics (organised for general public)	2.83
Receiving information from educational organisations & academic sector	2.80	Training on educational management topics (organised for general public)	2.61
Receiving advice from individual educational experts	2.71	Workshops on educational topics	2.53
Receiving advice from individual experts, specialised in educational management	2.56	Workshops on educational management topics	2.34

Source: Research results.

by other educational institutions and in-house training sessions achieving a somewhat higher score. Unfortunately, the topic mostly neglected by the Croatian primary school principals is educational management itself, with educational management workshops being scored at 2.34 only, i.e., the worst score on the list.

In order to reduce the number of items related to both main constructs of the study, factor analyses of principal practices and usage of principal support tools/systems were performed. In both cases, inspection of the correlation matrix and the values of the Kaiser-Meyer-Olkin and the Bartlett's sphericity test (KMO measure = 0.834; Bartlett's test sig. = 0.000 for the principal practices; KMO measure = 0.824; Bartlett's test sig. = 0.000 for the principal support tools) indicated that the required statistical preconditions are satisfied. We used the traditional principal component analysis (PCA) as the factor extraction method, with both an unrotated solution and a solution, applying the Varimax rotation. The rotated solution provided a much easier interpretation of factor loadings of principal practices (see Table 4) and support tools/systems (see Table 5), which is consistent with the methodological guidelines for factor analysis.

In the case of principal practices, five factors were extracted, explaining 68.54% of total variance, which is considered to be satisfactory. The existence of five separate factors was also confirmed by the visual inspection of the scree plot. Their interpretation is relatively easy, as individual items loadings demonstrate that principal practices factors relate to: (1) project management and reporting on school activities; (2) implementation and controlling of fundraising; (3) marketing and public relations with media and the local community; (4) controlling only (which hints at 'micro-management' practices of some 'helicopter-principals'); and (5) administrative work (although, surprisingly, mixed with the local community involvement).

The analysis of principal support/systems resulted in the extraction of three factors, which explained as much as 73.36% of the total variance. The number of factors, based on eigenvalues, has been confirmed by the scree plot examination. Just as in the case of principal practices, the logical interpretation of factors is based on factor loadings in Varimax rotation. Factor 1 is related to all sorts of training and workshops, factor 2 to different forms of consulting (i.e., receiving assistance from individual experts) and factor 3 to receiving information from various channels, including the sessions organised by the relevant state institutions.

A simple correlation, involving the factor scores for the two groups of variables (see Table 6), uncovers several significant associations for the usage of support tools/systems, by principals who use project management, fundraising and marketing practices. This

Table 4. Factor analysis of principal practices: rotated components matrix (Varimax method).

	Factor 1 (project management)	Factor 2 (fundraising)	Factor 3 (marketing)	Factor 4 (‘micro’ mgmt.)	Factor 5 (administration)
Fundraising and financing (in addition to traditional sources)		0.713			
Reporting on school activities to authorities	0.834				
Reporting on school finances to authorities	0.765				
Project management	0.830				
Institutional and project evaluations	0.819				
Scheduling tasks	0.620				
Co-operation with the economy		0.724			
Planning future activities and projects	0.523				
Contacts with the Ministry of science & education, other state institutions, local administration		0.755			
Involvement into accounting					0.833
Correspondence & adminis- trative tasks					0.724
Controlling of everyday activities				0.894	
Controlling of other activities				0.886	
‘Market research’ in local community		0.493			0.426
Public relations with school stakeholders			0.833		
Public relations, related to school projects			0.796		
Media relations			0.732		

Source: Research results.

finding indicated that there might be several clusters of principals, comparable in their managerial practices, as well as several typical managerial profiles that might exist within this population.

Hierarchical cluster analysis was used, since the dataset is rather limited and there was no certain prior knowledge on the number of managerial (principal) profiles, which could be used as a reliable guidance to decide on the potential number of principal clusters. The visual inspection of the obtained dendrogram led to the conclusion of the existence of five principal clusters. Cluster membership variables, produced by SPSS, were used to compute mean values for principal practices’ factor scores. As demonstrated by Table 7, for all groups of principal activities, there are statistically significant differences across the obtained clusters (at the significance level of $p < 0.01$), which have been computed by analysis of variance (ANOVA).

The mean factor scores (describing the principal practices) have also been visualised by using the radar plot in Microsoft Excel (see Figure 1), which provides a useful practical tool for further empirical research of primary school principals in Croatia.

Namely, members of each cluster can be described as:

Table 5. Factor analysis of principal support tools/systems usage: Rotated components matrix (Varimax method).

	Factor 1 (Training & workshops)	Factor 2 (Consulting)	Factor 3 (Receiving information)
Receiving information from the non-profit sector			0.632
Receiving information from 'official channels' (Ministry, educational agencies, etc.)			0.914
Receiving information from educational organisations & academic sector		0.406	0.676
Receiving advice from individual educational experts		0.874	
Receiving advice from individual experts, specialised in educational management		0.831	
Organised, in-house training	0.759		
Training on educational topics (organised for general public)	0.837		
Training on educational management topics (organised for general public)	0.816		
Workshops on educational topics	0.722		
Workshops on educational management topics	0.803		

Source: Research results.

- Cluster 1 members (27.6% of the sample; overall mean of 'constructivist' practices = 3.81; overall mean of 'non-constructivist' practices = 3.99) in terms of balancing their traditional (non-constructivist) practices with the orientation toward project management and school marketing;
- Cluster 2 members (24.3% of the sample; overall mean of 'constructivist' practices = 3.80; overall mean of 'non-constructivist' practices = 3.99) as 'micro-managers', who emphasise controlling and behavioural checks, with an average orientation toward other managerial practices;
- Cluster 3 members (17.8% of the sample; overall mean of 'constructivist' practices = 2.79; overall mean of 'non-constructivist' practices = 3.41) as passive principals, who only invest a minimum of their efforts into the performance of their jobs;
- Cluster 4 members (15.3% of the sample; overall mean of 'constructivist' practices = 3.39; overall mean of 'non-constructivist' practices = 3.15) as 'below-average' principals, principally interested in their own marketing (and it can be hypothesised that their fundamental motivation is to get re-elected to the same position);
- Cluster 5 members (11.8% of the sample; overall mean of 'constructivist' practices = 3.32; overall mean of 'non-constructivist' practices = 3.52) as 'traditional' principals, emphasising the administrative aspects of their job, but being interested in a mix of fundraising and school management activities (which have been classified as 'contemporary', i.e. constructivist).

The reported self-assessment scores for the different principal profiles can be interpreted in terms of the (self-) perceived effectiveness, which is defined according to Buble (2008), in terms of the 'quantity' of activities/practices performed (as opposed to efficiency, which deals with the adequate input/output ratio of organisational and managerial activities).

It is important to note that the both Cluster 1 and 2 members seem to be equally effective, although the managerial profile of Cluster 2 principals might be associated with a high level of delegation issues. As expected, members of Cluster 3 are the least effective, with the lowest score for the 'constructivist' practices. However, the real surprise is related to Cluster

Table 6. Correlation between principal practices and support tools/systems usage (factor scores).

		Workshops & lectures	Consulting	Receiving information
Project management	Pearson Correlation	0.082	0.304**	0.198*
	Sig. (2-tailed)	0.318	0.000	0.016
Fundraising	Pearson Correlation	0.194*	0.109	0.209*
	Sig. (2-tailed)	0.018	0.186	0.010
Marketing	Pearson Correlation	0.140	0.064	0.207*
	Sig. (2-tailed)	0.088	0.436	0.011
'Micro' management	Pearson Correlation	-0.008	-0.006	0.153
	Sig. (2-tailed)	0.918	0.946	0.062
Administrative activities	Pearson Correlation	0.103	0.137	0.053
	Sig. (2-tailed)	0.211	0.096	0.523

Source: Research results.

*significant at 5% level.

**significant at 1% level.

Table 7. Analysis of variance for principal activities (factor scores) among clusters.

		Sum of Squares	df	Mean Square	F	Sig.
Project management	Between groups	52.207	4	13.052	19.421	0.000
	Within groups	98.793	147	0.672		
	Total	151.000	151			
Fundraising	Between groups	19.807	4	4.952	5.548	0.000
	Within groups	131.193	147	0.892		
	Total	151.000	151			
Marketing	Between groups	67.059	4	16.765	29.359	0.000
	Within groups	83.941	147	0.571		
	Total	151.000	151			
'Micro' management	Between groups	60.627	4	15.157	24.654	0.000
	Within groups	90.373	147	0.615		
	Total	151.000	151			
Administrative activities	Between groups	73.536	4	18.384	34.887	0.000
	Within groups	77.464	147	0.527		
	Total	151.000	151			

Source: Research results.

4 principals. They are the only 'true constructivist' group of analysed principles, although their performance (from the social constructivist viewpoint) seems to be much lower than for Cluster 1 and 2 principals, while the motivation for their practices also seems to be quite pragmatic. This leads to the notion that the 'constructivist' principal practices are, currently, not associated with the perceived managerial effectiveness (measured by self-assessment of principal managerial practices). Although such a proposition needs to be further empirically verified, it hints that the 'constructivist' reform of the Croatian educational system might not be supported by principals, at least in primary schools.

These results could be interesting to the institutional actors of the Croatian educational system, who might be interested in identifying individual principal needs for professional and managerial development. The Cluster 3 and 4 members should serve as principal targets of such activities, while all primary school principals should be further introduced and trained in 'constructivist' practices in educational management, if the announced educational reform is to be successful. This finding can be further described by the limited empirical evidence of the statistically significant differences in the usage of principal support tools/approaches (see Table 8).

	Project management	Fundraising	Marketing	"Micro-managing"	Administration
1	0.600	-0.221	0.437	-0.163	0.586
2	0.300	0.500	0.079	0.986	-0.223
3	-0.186	-0.507	-1.399	0.054	-0.055
4	-0.239	-0.039	0.355	-0.880	-1.259
5	-1.252	0.276	0.366	-0.411	0.894

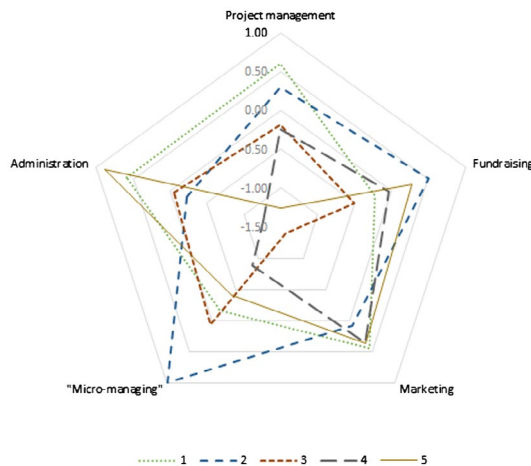


Figure 1. Principal activities' profiles. Source: Author's calculation.

Note: Cluster 1 – Project- and marketing-oriented, still fulfil traditional obligations, good delegation skills. Cluster 2 – 'Micro-managers', 'look over your shoulder', with an average orientation on all other practices. Cluster 3 – Only minimum of activities. Cluster 4 – Do-little, emphasis on 'personal marketing'. Cluster 5 – Traditional administrators, with a 'marketing twist'.

Analysis of variance (see Table 8) shows that only the information sessions attendance differs significantly across the (previously described) principal clusters. The obtained results provide an empirical answer to the second part of the research question: there are differences among the principal clusters (defined according to their practices), according to their usage of the available support tools/approaches. Nevertheless, only the usage of different channels for receiving information proves to be statistically significant.

A somewhat different empirical finding from previous research (Alfirević et al., 2011) associated the use of principal support tools in the field of educational marketing and management with the efficiency of their stakeholder orientation. Although the research topic has been changed, it seems that the principal profiles have not changed much, since the 'active' principals, interested in educational management/marketing, do achieve an adequate level of balanced stakeholder interests (as demonstrated several years ago). Those can be associated with the Cluster 1 members, as defined by this study, who are perceived as 'constructivist' principals.

To provide an illustrative overview of the principal support tools/approaches, their visualisation, based on factor scores, has been created in Microsoft Excel, by using the radar plot (see Figure 2). The resulting clusters can be described in the following terms:

- Cluster 1 members – use all the available tools/approaches (and would probably use even the new ones);
- Cluster 2 members – like to 'sign on' to the official sessions and events, where the relevant information is distributed, with individual advice being appreciated, as well;

Table 8. Analysis of variance for usage of support tools/approaches (factor scores) among clusters.

		Sum of Squares	df	Mean Square	F	Sig.
Workshops & lectures	Between groups	8.411	4	2.103	2.135	0.079
	Within groups	141.828	144	0.985		
	Total	150.239	148			
Consulting	Between groups	6.555	4	1.639	1.665	0.161
	Within groups	141.694	144	0.984		
	Total	148.249	148			
Receiving information	Between groups	12.398	4	3.099	3.669	0.007
	Within groups	121.657	144	0.845		
	Total	134.054	148			

Source: Research results.

	Workshops/lectures	Receiving information	Consultations
1	.3531721	.2639050	.2728262
2	-.0492232	.0949604	.3226394
3	-.2363903	-.2632710	-.4051343
4	-.2507892	-.2341043	-.2073468
5	.0101782	-.0660020	-.1338539

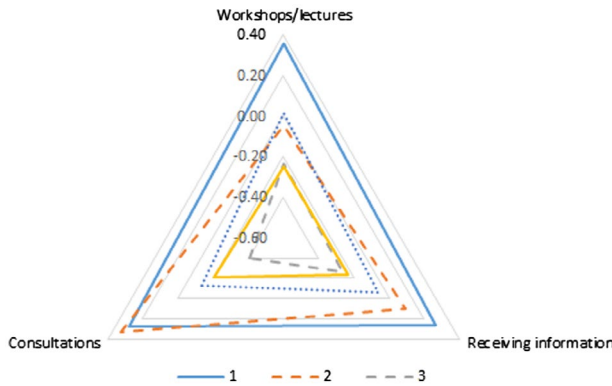


Figure 2. Support tools/approaches usage profiles. Source: Author’s calculation.

Note: Cluster 1 – Use everything available. Cluster 2 – Receive information & seek individual assistance. Cluster 3 – Use the bare minimum. Cluster 4 – Use little, except of showing up at the official information sessions. Cluster 5 – ‘Balanced’ support tools/approaches usage.

- Cluster 3 members – use the bare minimum of the available support tools/approaches, including the required official sessions and events;
- Cluster 4 members – comparable to the ‘passive’ principals (Cluster 3), although they do show up at the official sessions and events;
- Cluster 5 members – interested in a ‘balanced mix’ of different support tools/approaches.

5. Conclusion

This study has empirically demonstrated the existence of several managerial profiles among primary school principals in Croatia. It has also indicated that the managerial practices that considered to be compatible with the constructivist approach to education do not prevail in

Croatian primary schools. In addition, the practices of those principals who are considered to be most effective (from the social constructivist viewpoint, which was previously widely applied to the non-profit sector), have not been associated with the constructivist theory of education. Since this theory seems to form the fundamental approach to comprehensive reform of Croatian education, a significant amount of resistance from primary school principals can be expected (although, it is still probably unaccounted for). Similar studies, focusing on principals of secondary schools and other educational institutions, should be performed to develop comparable empirical findings within the other sections of the Croatian educational system. It is also important to note that the lack of delegation does not seem to bother the principals in their self-assessment of their high effectiveness, which is not acceptable from the viewpoint of the contemporary management theory.

The success of the forthcoming comprehensive reforms requires the effective usage of principal support tools/approaches. This usage is currently quite inadequate, although it should be noted that there is only limited empirical evidence for the statistically significant differences in their usage across principal groups (defined according to their managerial practices). Significant differences are only found for the usage of the channels for distribution of relevant information. This might hint at the inadequate development of the more complex principal support tools/approaches, although this proposition needs to be verified by further empirical research. Nevertheless, it is interesting that those principals considered to be most effective (Cluster 1 and 2 members) actively use the majority of the available tools/approaches, while the principals considered to be less effective seem to be more passive in their utilisation.

Notes

1. See an address by Katarina Milković, official for educational policy in the city of Zagreb administration, held in Tallinn, Estonia: <http://www.tallinn.ee/est/g5354s35159> (accessed 14 February 2016).
2. CARNet The Agency's web pages are available in Croatian only, with a short summary in English: http://www.azoo.hr/index.php?option=com_content&view=article&id=1999:education-and-teacher-training-agency&Itemid=343 (accessed 14 February 2016).
3. See: 'Ravnatelj škole – upravljanje – vođenje' (in Croatian only), available at: http://www.azoo.hr/images/izdanja/Ravnatelj_skole-upravljanje-vodjenje_2009.pdf (accessed 14 February 2016).
4. See: 'Strategija znanosti, obrazovanja i tehnologije' (in Croatian only), available at: <http://www.kvalifikacije.hr/fgs.axd?id=713> (accessed 14 February 2016).
5. The research centre, called 'Scientific centre of excellence for school effectiveness and management' has been based on competitive national funding, managed by the Croatian Agency for science and higher education.
6. CARNet (Croatian Academic and Research Network). 'CARNet as a member of the Expert Working Group for implementation of Comprehensive Curricular Reform', http://www.carnet.hr/rnet_news?news_id=3512 (accessed 2 March 2015).
7. MSES (Ministry of Science, Education and Sports), www.mzos.hr/datoteke/Ustanove/USTANOVE_OS.xls (accessed 2 March 2015).

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