Open Government and E-Leadership in Schools Mediated by ICT

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Abstract

In this study, open government is considered within the context of schools and their educational communities, and its broader implications for the future of e-government and e-leadership at schools. The research was conducted in 10 secondary schools in Spain. By means of quantitative and qualitative methodologies we assessed the educational community's appreciation of the principles of open government and e-leadership applied to schools with the support of ICT. We found that various members who make up educational communities had high expectations for open government policies and principles derived from them –transparency, participation, and collaboration. We further proposed a conceptual framework to guide educational strategies in planning and assessing their open government initiatives. Moreover, we analyzed resources and strategies based on Web 2.0 with the purpose of obtaining the best results for the development of open government through e-leadership.

Key words: *ICT; leadership; open government; school management*

Introduction

One might assume that schools inherently are learning organizations, but as noted by Martin-Kniep (2008, pp. 5-6), they are often "…structured in a way that minimizes collaboration, reflection and innovation, the very elements that support meeting the 21st century demands." On January 21st 2009, shortly after assuming office, the president of the United States, Mr. Obama, issued the Presidential Memorandum on Transparency and Open Government, setting forth three basic principles: transparency, participation, and collaboration (Obama, 2009-2010; Coglianese, 2009; McDermott, 2010; Fung and Weil, 2010; Lathrop and Ruma, 2010; Parycek and Sachs, 2010; White, 2010; Harrison, et al., 2011).

This study is founded in the above outlined philosophy. The research was conducted with the purpose of proving that open and participatory government and leadership are transferrable to the educational settings through a network technology organization which promotes collaboration, transparency, and active participation of everyone in the development of the present and future schools. We present the results of this research based on a multi-case study that laid out the attitudes of the different members of the educational community on school management practices which had been carried out since the incorporation of the principles of open and participatory government, the "Open Government" in those schools in Spain. It was carried out with the support of Information and Communication Technologies (ICT) in 10 secondary schools in the province of Toledo (Spain). The open and participatory management is supported in constant decisions striving to enhance the facilitation of the collaboration of the individuals in the educational community. They work on developing the academic life of the school and communicating everything that is decided or done in an open and transparent manner (Chadwick and May, 2003; Jaeger and Bertot, 2010; Colquitt, Lepine and Wesson, 2011; Vázquez, 2011; Fombona, et al., 2012).

Schools of this century do more than merely meet the academic needs; they function as miniature cities, providing food, facilities, health, security, transportation, and recreation services for their students. All this implies good management of a complex system and requires collaborative resources and strategies to involve people (Chapman, Allen and Harris, 2005; Chen et al., 2007). Likewise, technology can present a collaborative resource to support more items than instructions alone (Bouras, Giannaka and Tsiatsos, 2008; Schein, 2010; Vazquez and Sevillano, 2011). The management of schools should participate in new social settings that are committed to Open Government policies based in certain parameters as are transparency, consistency, openness, participation, effectiveness, and accountability (European Governance, 2011). Today's society and, by extension, schools can qualify for partnership or network schools (OCDE, 2009; UNESCO, 2009; European Commission, 2010; the U.S. Department of Education, 2010).Yet, too often have schools been the silos of isolation; classrooms isolated from other classrooms, teachers isolated from other teachers, and schools isolated from the outside world (Blank, Berg and Melaville, 2006). When people are connected through technology and/or collaborative arrangements and transparency, their effects are multiplied, communities can accomplish their educational goals, and the data are transmitted in an efficient and open way (Taylor and Adelman, 2000; Warren, 2005; Allison, 2010).

Open Government and E-Leadership at Schools: A Necessary Symbiosis

The concept of "collaboration and co-work" has been very productive in the education studies (Chapman, and Boyd, 1986; Lindelow, and Bentley, 1989; Hunton,

Hall, and Price, 1998; Bean, and Apple, 1999; Anderson, 1998; Beyerlein, Freedman, McGee, and Moran, 2003). Recently it has been restructured and extended from a general perspective in 2009, when the USA Democratic Party, through some of their "think tanks," such as the Center for American Progress (http://www.americanprogress.org), stated that Obama's campaign had set a new model with regard to the distribution of information via new media and social networking technology, such as YouTube, Facebook, Twitter, and others. It also introduced ideas on how these technologies can lead to 2.0, a new era of government transparency and citizen participation (Harrison, et al., 2011). This idea of "Open Government" started to define new forms of government that, mediated by digital technologies and electronically distributed networks, intended to serve citizens and seek to be transparent, credible, participatory, and collaborative (Obama, 2009; Orszag, 2009). Many researchers have written about leadership in the educational context. For example, Fullan (2001, p.141) stated that "Almost every single study of school effectiveness has shown both primary and secondary leadership to be the key factors." However, in today's society, it is necessary to rethink the concept of leadership and incorporate ICT in it. This leadership requires new forms and structures that are more open and collaborative. This has become known as e-leadership in other social spheres, such as business (Avolio, Kahaia and Dodge, 2000).

The idea of "open government" is animated by optimism over what can be accomplished through the use of ICT. Lathrop and Ruma (2010, p. 20) describe open government as:"…government that co-innovates with everyone, especially citizens, shares resources that were previously closely guarded; harness[es] the power of mass collaboration, drives transparency throughout its operations, and behaves not as isolated department of jurisdiction, but as something new, a truly integrated and networked organization". The Open Government Directive ultimately foregrounded the principles of transparency, participation, and collaboration as "the cornerstones of an open government," and we think that their application to schools is a powerful theoretical background which can serve to develop new ways of managing the schools. Transparency refers to the availability and the increased flow of timely, comprehensive, relevant, high-quality, and reliable information concerning the activities of the government aimed at the public (Birkinshaw, 2006; De Ferranti, 2009; Brito and Perraut, 2010). At schools, the relationship between information, transparency, and democracy is fundamental and basic. Information is essential to families in order to monitor the progress of their children and it is also the basic criterion for teachers and students to be involved in the management of the institution. Transparency may enhance the integration of families, students, and teachers into the educational project. Participation is the process by which public concerns, needs, and values are incorporated into governmental and corporate decision-making process (Epstein, 2001; Creighton, 2005). As schools get bigger and families get ever busier, in many cases the active participation of families at the school premises is impractical, and is only possible in some small communities. The emergence of ICT makes it possible

to achieve a more dynamic and collaborative leadership and organization of schools (Hiatt-Michael, 2001; Lasky and Moore, 2003). Collaboration can be defined as a form of democratic participation that differs in important ways from the traditional participative and deliberative practices that often take place in circumstances disconnected from decision-making (Turnbull and Turnbull, 2001; Noveck, 2009). Collaboration helps schools and management teams to address educational problems by bringing together families, teachers, administrators, and students, because they possess complementary information that can be used to solve educational problems (Simon and Epstein, 2001; Henderson and Mapp, 2002). In the development of the open government at schools, e-leadership plays a key role. We can point out six pillars to describe this e-leadership in the educational contexts: communication, engagement, innovation, trust, collaboration, and alignment (Gurr, 2004; Avolio, Walumbwa and Weber, 2009; Darleen, 2009; Bishop et al., 2010). We cannot forget that the real learning effectiveness occurs when educational and societal systems get artfully integrated into a seamless whole, in which each system reinforces the others (Bober, 2001). The management of schools should be exercised on the basis of the principles of openness to the educational community in all aspects, such as the academic, organizational, economic, and administrative aspects (Gurr, 2004; Fullan, 2008; Garmston and Wellman, 2009). A changing society requires organizations to adapt and revise their coherence and forms of action in relation to the needs of the environment (Zigurs, 2009). The 21stcentury learning environment blends physical and digital infrastructures to seamlessly support learning, and nowadays, melding face-to-face with online learning is essential for schools.

Research Questions

The goal of the present study was to gain more insight into the characteristics of the open government applied in schools through the use of a collaborative electronic leadership. The focus was on answering the three research questions given below:

(1) What is each community members´ appreciation of the benefits of the open government principles applied to schools?

(2) What are the resources 2.0 best rated for promoting open government and e-leadership in schools?

(3) What possible benefits promote an open government policy mediated by ICT in schools?

Method

The purpose of this multi-case study research was to assess the educational community's appreciation of the principles of open government and e-leadership applied to schools with the support of ICT. The purpose of the phenomenological research is not to obtain generalizations, but to describe in detail the breadth and depth of individual experience, along with the phenomenon and the meaning

structures of such experience (Creswell, 2003). Stake (2006, p.8) pointed out that multi-case studies are "studies of particularization more than generalization". This study was delimited to 10 schools in Spain. Stake emphasized the need for commonality of individual cases that can be categorically bound together. Stake referred to the group, category, or phenomenon as a "quintain" (Stake, 2006). The commonality of this particular quintain involved the schools that were recognized for their leadership positions in Toledo (Spain) in both their educational results and community programmes. This multi-case study (Bogdan and Biklen, 1982; Stake, 1995; Merriam, 1998) included data collected by means of interviews which took place in the periods of six days spent in each school. Five key participants acted as co-researchers by providing feedback and collaborating on the inductive analysis of the data. The aim of the constant comparison among various schools, as proposed by Bogdan and Biklen (1982), was to generate hypotheses confronting the theories found in different contexts. The range and types of institutions, rather than representing a difficulty, became a methodological enrichment that generated greater validity of the findings, by providing a general explanation in multiple contexts. Furthermore, the comparison of these schools was productive for the following characteristics:

– From a regulatory point of view, it included a full range of the types of secondary schools that currently exist in Spain and all over the world.

– Replicating the same study, variability, and balance (rural vs. urban and public vs. concerted private vs. private etc.).

– We presented schools with a variable number of students, which provided sample variability.

Thus, by comparing these schools and testing our hypotheses and conclusions in multiple educational settings, we provided a method for generating substantive theories with different levels of depth concerning the amount of information collected and the sample of people involved: students, teachers, families, and school inspectors. Our research process involved the following phases:

1. Refined instruments were applied in the first phase of immersion in all schools; prior to this, a validation of the questionnaire and data collection instrument was performed by the Education Inspection Services.
2. Data were collected during the education inspector's visit and the results were analyzed in different schools in the province to enrich the theory and case study contrasting results.
3. The results were contrasted in different educational areas, and questionnaires or unreliable results were discarded.

Data Collection and Analysis

The multi-case study was carried out during 2011 in 10 schools in the province of Toledo (Spain) with different socio-cultural and economic contexts. Table 1 outlines the characteristics of the data.

Table 1. *School-Community Data*

	Private with concert	Public	Private Schools	Secondary Schools Total
City	2	5	1	8
Rural	0	2	0	2
Number of Students	957	3256	456	4669

Our key informants and techniques employed are presented in Table 2.

Table 2. *Key informants and techniques*

	Teachers		Administrators		Students		Families	
	Male	Female	Male	Female	Male	Female	Male	Female
Questionnaires	32	31	21	17	25	25	35	34
Open Questions	22	21	21	17	20	20	30	30
Semi-structured individual interviews	20	20	20	15	20	20	20	20

The population for this study comprised educational community members of 10 different secondary schools from Toledo (Spain). A convenience sample was drawn from this population (n=220).

Procedure and Instruments

The data were collected in the period of 2 months by means of individual participant interviews, questionnaires, study group, meeting notes, participant reflections, and the researcher's field notes and reflections. Detailed field notes and reflections were maintained on a daily basis, along with an audio record of when and how the data were collected and analyzed. Carefully constructed interview questions about the open government and e-leadership principles supported by ICT were applied in the research carried out in schools. All the interviews were prescheduled, tape-recorded, and transcribed to ensure accuracy. These techniques had an important complementary value, because they helped us understand and grasp what an informant thought and believed, how he/she interpreted his/her world, and what notions he/she used and managed. In contrast, the observation allowed us to analyse the content with precision, i.e. the actions of the informants as they occurred in their natural context of action. The interview questions were designed to focus the participants on the open government strategies applied to school and e-leadership challenges, strategies, and effectiveness. The interview consisted of three basic sections: technology and communication, open government policies and leadership style, and conflicts and closure. On the basis of these aspects, the interviewed participants were requested to describe their observations and perceptions of attitudes based on the open government perspective and e-leadership challenges and strategies associated with a virtual educational context.

Table 3. *Interview format*

Areas	Questions
A. Monitoring and execution of leadership and school government with ICT support.	1. What action based on ICT signifies the improvement of governmental functions? 2. How do you rate the inclusion of ICT in teaching-organizing duties?
B. Digital communication among all members of the educational community.	1. What action based on ICT signifies an improvement of leadership, government and teaching members of the educational community? 2. How do you rate the inclusion of ICT with the purpose of promoting collaborative activities among the members of the educational community
C. Advice, guidance, participation and information with ICT.	1. Rate the use of the virtualized systems in the development of the educational community 2. Rate the use of the virtualized systems in the development of personal and professional competences. 3. Rate the use of virtualized systems in your expectations about the school.

To complementarily examine the current situation, we designed three online questionnaires for families, students, and teachers-administrators. It involved ratings performed by means of the Likert scale (1-5). Internal consistency reliability was tested via Cronbach's alpha coefficient (0.901) and factor analysis was used to identify the underlying constructs. Tests of scaling assumptions, according to the Multitrait-Multimethod Matrix, were used to confirm the hypothesized component structure. The participants were asked to complete either one of these three online questionnaires, depending on their role in the school. The researcher then divided the data into two common themes: the appreciation of open government in schools among the members of the educational communities, and the question of which were the most efficient2.0 resources in supporting e-leadership and the principles of open government in schools. For the Likert items, α-scale construction was carried out by applying the principal component analyses and by calculating Cronbach α-scores. The items which reduced the α-score were excluded from the scales. Subsequently, the mean scores per scale were calculated. In order to assess the influence of the background variables on the design and development of the open-government strategies as well as on the use of ICT for promoting leadership, Pearson correlation coefficients were calculated and multiple regression analyses were carried out. Several strategies were used to check the accuracy of the findings, including peer debriefing, member-checking, and the use of rich description. The cases were peer-reviewed by a faculty member familiar with the project and the educational inspection services. They provided feedback on the comprehensiveness of the cases and literature regarding the issues found within each case. Rich descriptions and detailed excerpts of data for each case were used to encourage the readers to draw their own conclusions. The data from various

monitoring techniques were triangulated to increase the validity of the results of the study by the refinement of the inherent shortcomings of a single method of data collection and the control of the supervisor's personal bias. According to Flick (2004), the "triangulation" of perspectives increases attention to the phenomenon under study.

Triangulations

– Triangulation of data analysis (families, students, teachers, and inspection services).
– Triangulation techniques in collecting data (Likert questionnaire and open questions).
– Triangulation –temporary and permanent longitudinal.
– Triangulation from different sources or different key informants (coordinators, principals, students, and teachers).

Results

The quantitative results obtained were analyzed by means of the SPSS statistical package 16.0. We used descriptive analysis and contingency tables that had frequencies and percentages of the variables analyzed. By means of the questionnaires and interviews, we reviewed the assessment, appreciation, expectations, and recommendations of the different members of the educational community about the principles of open government and policies applied to the management and educational leadership, as well as the impact of ICT on them. The five variables that had been repeated by all the interviewees (students, teachers, families, and administrators) with more representation and the most productive 2.0 resources are shown in Tables 3–7.

Appreciation of the benefits of the open government principles in schools

Table 4. *Descriptive educational community member appreciations of open government*

Items	Total	Range	Minimum	Maximum	Mean	Tp.Dv	Variance
Global participation	220	4	1	5	3.45	.899	.855
Collaboration	220	4	1	5	3.41	1.01	.961
Permeable boundaries and transparency	220	4	1	5	3.01	1.02	1.07
Interdependence	220	4	1	5	2.99	.987	.923
							Cronbach: 0:87

The variables with greater representation in all sectors were *global participation* (n= 3.45-86.25%) and *collaboration* (n= 3.41-85.25%). These two variables, which present the fundamental principles of open government, were highly valued by all the members of the educational community as the two most important and significant advances that the school would get with the adoption of the open government policies.

Expectations of teachers and administrators about the potential of ICT for developing open government and e-leadership

We analyzed the expectations that students, families, teachers, and administrators had about 2.0 resources and its impact on the open government principles. We divided the expectations into five sub-variables. The results obtained regarding the more productive resources 2.0 are presented in Tables 5–8.

Table 5. *Descriptive statistics of teachers and administrators' expectations*

Items	Total	Range	Minimum	Maximum	Mean	Tp.Dv	Variance
Accessibility	101	4	1	5	3.15	.889	.745
Communication and Coordination	101	4	1	5	3.43	1.02	.872
Paperwork Reduction	101	4	1	5	3.48	.912	.891
Publishing Data	101	4	1	5	3.19	.998	1.123
Freedom of Information	101	4	1	5	3.59	.865	0.875
							Cronbach: 0:83

Table 6. *Resources 2.0 for the promotion of open government and e-leadership*

2.0 Resources	Teachers	Administrators
Forums	69%	73%
Electronic Messaging	63%	58%
Video-Tutorials	39%	42%
Working Groups	38%	47%
Agenda and Calendar	47%	53%
Wiki	34%	45%
Peer to Peer E-Information	67%	74%
Chat	49%	68%

The average values showed that teachers and administrators assessed the five sub-variables in a similar manner. The following sub-variables need to be pointed out: *freedom of information* (n= 3.59-89.75%) e.g.: N3: "Video-tutorials and forums help me inform families at the beginning and in the course of the academic year"; p*aperwork reduction* (n= 3.48-87%) e.g.: N12: "When using the virtual agenda and the calendar, I reduce the number of flyers and the amount of paperwork"; *communication and coordination* (n= 3.43-85.75%) e.g.: N7: "Electronic messages, forums, and chats help me stay involved in the academic life of the students and maintain collaboration with families during the year". These three items are the most valued expectations. The most valuable 2.0 resources according to the teachers and administrators for the development of the principles of open government within the schools are *forums* (71%), *e-messaging* (60.5%), and p*eer to peer electronic information* (70.5%).

Expectations of students and families about the potential of ICT for developing open government and e-leadership

Table 7. *Descriptive statistics of students and families' expectations*

Items	Total	Range	Minimum	Maximum	Mean	Tp.Dv	Variance
Accessibility	119	4	1	5	3.18	.789	.645
Communication and Coordination	119	4	1	5	3.53	1.01	.982
Paperwork Reduction	119	4	1	5	3.16	.812	.798
Publishing Data	119	4	1	5	3.39	1.10	1.212
Freedom of Information	119	4	1	5	3.40	.765	0.671
							Cronbach: 0:85

Table 8. *Resources 2.0 for promoting open government and e-leadership*

2.0 Resources	Students	Families
Forums	75%	60%
Electronic Messaging	71%	78%
Video-Tutorials	52%	38%
Working groups	51%	40%
Agenda and Calendar	49%	81%
Wiki	43%	21%
Peer to Peer E-Information	78%	71%
Chat	87%	47%

The average values showed that students and families also assessed the five sub-variables in a similar manner. The following items need to be pointed out as they were found to be the most valued expectations: *communication and coordination* (n= 3.53-88.25%) e.g.: N8: "I receive electronic messages from teachers in order to keep track of the academic progression of my child and this helps me know how to help him in a better way"; *freedom of information* (n= 3.40-85%) e.g.: N1: "Via chat, forums, and wikis I have a complete access to the academic development of my children"; and *Publishing data* (n= 3.39-84.75%) e.g.: N5: "Virtual information is always available and you do not need to go to school to be completely informed".

The most valuable 2.0 resources for the development of the principles of open government according to the students were *chat* (87%), *peer to peer electronic information* (78%), *forums* (75%), and *electronic messaging* (71%). Furthermore, according to the families and depending on their technological literacy, the most valuable 2.0 resources were *agenda* and *calendar* (81%), *electronic messaging* (78%), and *peer to peer electronic information* (71%).

Recommendations of students, families, teachers, and administrators about the potential of ICT for developing open government and e-leadership

Table 9. *Main recommendations of educational communities' members for the development of open government by means of ICT*

Items	Total	Range	Minimum	Maximum	Mean	Tp.Dv	Variance
Foster media richness	220	4	1	5	3.27	.872	.732
Create supportive collaboration environments	220	4	1	5	3.41	1.11	.979
Determine and answer different communication needs	220	4	1	5	3.66	1.11	.991
Consider levels of proficiency in using ICT	220	4	1	5	3.48	1.09	.912
							Cronbach: 0:83

The four recommendations yielded similar results (Table 8). One can see that *determine and answer different communication needs* (n= 3.45-91.5%) and *consider levels of proficiency in using ICT* (n= 3.45-87%) were the two most important dimensions taken into account by the educational leaders to develop open government initiatives and e-leadership. In addition, it was also considered very important to foster media richness and to create supportive collaboration educational environments. The average rating among teachers and administrators as well as students and families with regard to their expectations for developing open government by means of ICT is presented in Table 9.

Table 10. *Descriptive statistics of students and families' expectations*

Items	Students and Families	Teachers and Administrators
Interdependence	n=150-68%	n=156-71%
Permeable boundaries	n=161-73%	n=174-79%
Collaboration	n=202-92%	n=191-87%
Global Participation	n=209-95%	n=196-89%

Anova

The analysis of variance was performed to test whether there was a relationship between the views expressed by the different sectors surveyed and analyzed: students, families, teachers, and administrators (Table 9). The value that acted as a reference for us to accept or reject the null hypothesis was the significance level. As the significance level was less than 0.05, we had to reject the null hypothesis and accept the alternative, i.e. we concluded that there was the relationship of dependency between the opinions of students, families, teachers, and administrators.

Table 11. *Analysis of variance*

Test for homogeneity of variances			
Levene statistic	g11	G12	Sig.
44.993	.99	3745	.012

	Squares Sum	g11	Mean Square	F	Sig.
Inter-Groups	6.345	1	6.524	4.123	0.038
Intra-Group	6112.654	3745	1.499		
Total	6112.456	3880			

Discussion

Our research demonstrates that the educational communities analyzed appreciated very highly the fact that schools must integrate the principles of open government and e-leadership. Besides, the expectation that the principles of open government as defined above with the support of ICT would substantially improve the performance of the schools was found to be common among all the members of the educational community. The open government at schools mediated by ICT could create a learning environment as an aligned and synergistic system of systems that:

- Creates learning practices, human support, and physical environments that support teaching, learning, tutoring, and counselling.
- Supports professional learning communities that enable leaders to collaborate, share good practices, and integrate the ICT skills into school organization.
- Allows equitable access to data, technologies, and resources.
- Provides architectural and interior designs for group, team, and individual learning.
- Supports the expanded community and global involvement in the learning process.

Communication technologies provide pathways for connecting students, parents, families, administrators, and teachers who are at the heart of all strong learning communities. School management information systems based on ICT support transparency, collaboration, and participation through connections that are essential for people to get involved in the education system. Furthermore, e-leadership and online management programs enable busy families to be in contact with the school anytime, anywhere, while fostering the exchange of ideas and good practices with all the members of the educational communities (Kouzes and Posner, 2002). Virtual environments are transforming schools to increasingly use technology to manage the complex array of tasks for which they are responsible, including the management of personnel, food and transportation services, supplies and instructional materials, security, and, of course, student information (Heinrich and Marschke, 2010; Resta and Patru, 2010; Brito and Perraut, 2010; Davis, Kee, and Newcomer, 2010; Dawes, 2010; Tee and Lee, 2011).

ICT, by supporting open government, primarily promote the following aspects:

- Interdependence. While sharing skills and information, each member of the educational community devotes their own contribution to the common goal of education fulfilment.
- Permeable boundaries. The strong interdependence of participants renders blurred organizational boundaries, because teachers, students, and families enter into cooperative agreements.
- Collaboration. With ICT involvement, virtual office nowadays can use desktop video-conferencing, collaborative software, and intranet systems to enhance the flow of information among team members, teachers, and families.
- Global participation. Thanks to ICT as the primary communication means, school participation does not depend on location. Innovative technologies have enabled families to collaborate independently of place or time, and have provided connectivity between each other.

Through open-ended questions conducted in personal interviews, some recommendations to foster open government and e-leadership with the support of ICT can be pointed out:

- Families recommended leaders to employ media richness, including the common media (e.g. e-mail and telephone call) as well as those advanced technologies (e.g. flash meeting and video-conferencing).
- Teachers and families recommended leaders to be aware of the fact that technologies were only a partial element of team success, and that they had to determine their future goals and develop supportive collaboration educational environments.
- Student and teacher communication needs determine the types of Computer Mediated Communication Systems that are appropriate. For example, group discussion of a critical issue on tutoring or counselling may require a richer communication channel due to the need for a high degree of interaction, immediacy of feedback, as well as the need to view others' comments in a synchronous manner. In contrast, when distributing a monthly meeting memo among team members, e-mail may be the effective vehicle because less interaction or immediate feedback is required in that case.
- Families and teachers recommended leaders to be aware and conscious of the educational community members' varying levels of proficiency in using advanced technologies. Clearly, effectiveness will be optimized when team members possess the complementary skills, knowledge, and experience with technology manipulation (McCauley, Van Velsor and Ruderman, 2010).

Conclusions

Open government and e-leadership together present a necessary and highly productive symbiosis for schools in the 21st century. ICT play a decisive role in

this symbiosis to materialize educational and management proposals to make schools more dynamic, collaborative, participatory, and transparent to the whole society. Irrespective of how technologies change, people need to feel that they are important part of the organization and active citizens in the decision-making process. Connecting the school and their members through ICT is one of the best ways to promote open government. All community members may work together on service projects, collaborate in school programmes, participate in decision-making, develop inner relationships, know what is happening inside the school, and feel active in the educational process in different dimensions.

A robust virtual infrastructure, designed for flexibility and growth, can facilitate these connections and develop strategies of open government that are highly valued by families and teachers. Leaders are encouraged to use those critical thinking skills mediated by ICT through promoting the principles of open government: examine assumptions; gather and share data from many sources; envision alternative scenarios; provide open decision-making, surveys, and polls to subsequently make an informed choice. In these days of limited resources and high expectations, technology planning must be handled intelligently. To break through, schools need to foster new forms of professional relationships that build organizational capacity and enhance personal growth.

The learning environments of current and future schools must encompass a rich mix of media and devices, varied cultures, as well as virtual and real-life relationships to foster and develop collaboration, transparency, and support professional and organizational learning. E-leaders must help them by articulating and communicating the aim towards which an organization is working and the strategy for achieving that aim, and by fostering qualities, such as honesty, responsiveness, vigilance, and willingness. Open government initiatives at schools with ICT support may ultimately have the effect of stimulating deeper changes in the structure and organization of schools by exposing the ways in which more transparent, participative, and collaborative administrative mechanisms produce more open and participative educational communities. The goal of the open government initiatives is to make information and decision-making processes at schools accessible to families, teachers, and students with the purpose of creating the democratic structures that will improve the educational processes.

The roles of open government and e-leadership supported by ICT can be described with the words of president Obama presented at the United Nations General Assembly in 2010: "In all parts of the world, we see the promise of innovation to make schools more open and accountable. Now, we must build on that progress. (…) we should bring specific commitments to promote transparency; to fight corruption; to energize civic engagement; and to leverage new technologies so that we strengthen the foundation of freedom in our own schools, while living up to the ideals that can light the world."

Study Limitations and Further Research

This research focused on 10 different Spanish schools of different socio-educational profiles. Although the sample is sufficiently representative because it involves a large number of members of the educational communities, future research should be extended to different international contexts to generate different perspectives on the overall improvement of the management and organization of schools.

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Otvorena uprava i e-vodstvo u školama posredovani informacijsko-komunikacijskim tehnologijama

Sažetak

Ovo istraživanje bavi se otvorenom upravom u školama i obrazovnim zajednicama te njezinim širim utjecajem na budućnost e-uprave i e-vodstva u školama. Istraživanje je provedeno u 10 srednjih škola u Španjolskoj te je kvantitativnom i kvalitativnom metodologijom procijenjeno mišljenje edukacijske zajednice o principu otvorene uprave i e-uprave u školama uz potporu informacijsko-komunikacijskih tehnologija. Ispitivalo se imaju li članovi obrazovne zajednice visoka očekivanja od politike otvorene uprave i principa izvedenih iz nje – transparentnosti, sudjelovanja i suradnje. Nadalje, predložen je konceptualni okvir za edukacijske strategije pri planiranju i ocjenjivanju inicijative otvorene uprave te su analizirani Web 2.0 materijali i strategije, u svrhu postizanja vrhunskih rezultata za razvoj otvorene uprave putem e-uprave.

Ključne riječi: *ICT; otvorena uprava; školsko vodstvo; vodstvo*

Uvod

Moglo bi se pretpostaviti da je za škole svojstveno upravo to da su organizacije učenja, no, kao što je primijetio Martin-Kniep (2008: 5−6), one su često „...organizirane na način koji umanjuje one elemente edukacije koje je potrebno ostvariti kako bi se ispunile potrebe 21. stoljeća, odnosno suradnju, promišljanje i inovaciju." Dana 21. siječnja 2009. godine, ubrzo nakon preuzimanja dužnosti, predsjednik Sjedinjenih Američkih Država, g. Obama, izdao je Memorandum o transparentnosti i otvorenoj upravi, postvivši time temelje trima osnovnim principima: transparentnosti, sudjelovanju i suradnji (Obama, 2009-2010; Coglianese, 2009; McDermott, 2010; Fung i Weil, 2010; Lathrop i Ruma, 2010; Parycek i Sachs, 2010; White, 2010; Harrison, i dr., 2011).

Ovaj rad utemeljen je u navedenoj filozofiji te predstavlja istraživanje kojime se pokušalo dokazati da su otvorena i sudionička uprava i vodstvo prenosive na edukacijsko okruženje kroz mrežu tehnoloških organizacija koje promoviraju

suradnju, transparentnost i aktivno sudjelovanje svake jedinke u razvoju sadašnjih i budućih škola. Predstavljamo rezultate toga istraživanja prikupljene od različitih članova obrazovne zajednice i dobivene na temelju studije višestrukih slučajeva. Predstavljaju se podaci o različitim praksama u upravljanju školom u 10 srednjih škola u provinciji Toledo koje su se u tim školama provodile od trenutka uvođenja principa otvorene i sudioničke uprave uz potporu informacijsko-komunikacijskih tehnologija (ICT). Otvoreno i sudioničko upravljanje utemeljeno je na odlukama koje se donose u cilju olakšanja suradnje sudionika edukacijske zajednice u svrhu razvoja akademskog života škole te otvorene i transparentne komunikacije o svemu što se odlučuje ili čini (Chadwick i May, 2003; Jaeger i Bertot, 2010; Colquitt, Lepine i Wesson, 2011; Vázquez, 2011; Fombona, i dr., 2012).

U ovome stoljeću škole čine više od pukog ispunjavanja akademskih potreba; djeluju poput minijaturnih gradova, osiguravajući svojim učenicima hranu, dodatne sadržaje, zdravstvene usluge, sigurnost, prijevoz i rekreaciju. Vođenje takvoga kompleksnog sustava zahtijeva suradničke resurse i strategije za uključivanje ljudi (Chapman, Allen i Harris, 2005; Chen i dr., 2007). Tehnologija također može biti suradnički resurs koji je više od pukih davanja uputa (Bouras, Giannaka i Tsiatsos, 2008; Schein, 2010; Vazquez i Sevillano, 2011). Školske uprave trebaju sudjelovati u novim društvenim okruženjima koja su predana politikama otvorene uprave te uključuju parametre kao što su transparentnost, dosljednost, otvorenost, sudjelovanje, učinkovitost i odgovornost (Europsko upravljanje, 2011). Današnje društvo i škole koje djeluju kao produžetak društva, mogu se kvalificirati za partnerstva ili umreženost (OCDE, 2009; UNESCO, 2009; European Commission, 2010; U.S. Department of Education, 2010). Međutim, škole su prečesto djelovale kao izolacijske komore: razredi izolirani od drugih razreda, učitelji izolirani od drugih učitelja, škole izolirane od vanjskog svijeta (Blank, BergiMelaville, 2006). Kad su ljudi povezani putem tehnologije i/ili dogovorom o suradnji i transparentnosti, njihovi učinci se umnogostručuju, zajednice mogu postići svoje odgojno-obrazovne ciljeve, a podaci se prenose na učinkovit i otvoren način (Taylor i Adelman, 2000; Warren, 2005; Allison, 2010).

Otvorena uprava i e-uprava u školama: neophodna simbioza

Koncept suradnje i zajedničkog rada zastupljen je u obrazovnim studijama (Chapman i Boyd, 1986; Lindelow i Bentley, 1989; Hunton, Hall i Price, 1998; Bean i Apple, 1999; Anderson, 1998; Beyerlein, Freedman, McGee i Moran, 2003). Godine 2009. ovaj je koncept restrukturiran i proširen kada je Demokratska stranka SAD-a putem Centra za američki napredak (http://www.americanprogress.org), objavila da je Obamina kampanja postavila novi model širenja informacija putem novih medija i tehnologija društvenog povezivanja kao što su to YouTube, Facebook, Twitter i dr. Tad je također uvedena i zamisao o tome kako te tehnologije mogu voditi do novog doba transparentnosti uprave i građanskog sudioništva (Harrison i dr., 2011). Zamisao o otvorenoj upravi počela je definirati nove oblike upravljanja koji putem

digitalnih tehnologija i elektronički raširenih mreža imaju svrhu služiti građanima i biti transparentnima, vjerodostojnima i suradničkima (Obama, 2009; Orszag, 2009). U edukacijskom kontekstu, mnogi su istraživači pisali o takvoj upravi. Primjerice Fullan (2001: 141) navodi da je „gotovo svaka studija školske učinkovitosti pokazala da su primarna i sekundarna uprava ključni čimbenici". Međutim, u današnjem svijetu važno je nanovo promisliti koncept uprave koji bi se uključio u informacijsko-komunikacijske tehnologije. Ta uprava zahtijeva nove oblike i strukture koje su otvorenije i sklonije suradnji i postala je poznata pod nazivom e-uprava u ostalim društvenim sferama (Avolio, Kahaia i Dodge, 2000).

Zamisao o otvorenoj upravi potaknuta je optimizmom po pitanju onoga što se može postići uporabom informacijsko-komunikacijskih tehnologija. Lathrop i Ruma (2010: 20) opisuju otvorenu upravu kao: „upravu koja zajedno sa svima uvodi inovacije, naročito s građanima, dijeli resurse koji su prethodno bili pomno čuvani, nastoji upregnuti moć masovne suradnje, uvodi transparentnost u sve postupke i ne ponaša se kao izolirani nadležni odjel, već kao nešto novo, kao istinski integrirana i umrežena organizacija". U Direktivi o otvorenoj upravi istaknuti su principi transparentnosti i suradnje kao „kameni temeljci" te smatramo da je njihova primjena na škole snažna teorijska pozadina za razvoj novih načina upravljanja školama. Transparentnost se odnosi na javnu dostupnost i pojačan protok informacija koje se tiču aktivnosti uprave (Birkinshaw, 2006; De Ferranti, 2009; Brito i Perraut, 2010). U školama su odnosi među informacijama, transparentnosti i demokracijom temeljni i osnovni. Informacije su ključne za obitelji kako bi pratile napredovanje svoje djece, a to je osnovni kriterij za uključenost učitelja i učenika u instituciju obrazovanja. Transparentnost može pospješiti integraciju obitelji, učenika i učitelja u edukacijski projekt. Sudioništvo je proces kojime se interesi, potrebe i vrijednosti javnosti uključuju u upravno i korporativno odlučivanje (Epstein, 2001; Creighton, 2005). Kako škole postaju sve veće, a obitelji sve zaposlenije, često obiteljima nije praktično aktivno sudjelovati u školama, osim u nekim malim zajednicama. Pojavljivanje informacijsko-komunikacijskih tehnologija omogućilo je postizanje dinamičnije i suradničke uprave u školama (Hiatt-Michael, 2001; Lasky i Moore, 2003). Konačno, suradnja se može definirati kao oblik demokratskog sudjelovanja koje se znatno razlikuje od tradicionalne sudioničke i savjetodavne prakse koja često postoji na mjestima i u uvjetima koji nisu povezani s odlučivanjem (Turnbull i Turnbull, 2001; Noveck, 2009). Suradnja omogućuje školama i upravljačkim timovima bavljenje edukacijskim problemima (Simon i Epstein, 2001; Henderson i Mapp, 2002). E-uprava ima ključnu ulogu u razvoju otvorene uprave u školama. Ističemo šest temeljnih vrijednosti kojima se može opisati e-uprava u kontekstu edukacije: komunikacija, uključenost, inovacija, povjerenje, suradnja i ravnopravan odnos (Gurr, 2004; Avolio, Walumbwa i Weber, 2009; Darleen, 2009; Bishop i dr., 2010). Ne zaboravimo da se prava učinkovitost u učenju postiže onda kad su edukacijski i društveni sustav vješto integrirani u jednu cjelinu u kojoj jedan sustav potiče drugi na djelovanje (Bober, 2001). Upravljanje školama potrebno je provoditi na temelju principa otvorenosti edukacijske zajednice u svim aspektima,

kao što su akademski, organizacijski, ekonomski i administrativni (Gurr, 2004; Fullan, 2008; Garmston i Wellman, 2009). Društvo koje je u procesu promjene zahtijeva da organizacije prilagode i preispitaju svoju koherentnost i oblike djelovanja s obzirom na potrebe okoline (Zigurs, 2009). Okolina učenja dvadeset i prvoga stoljeća sjedinjuje fizičke i digitalne infrastrukture u svrhu podrške učenju pa je povezivanje s učenjem na daljinu ključno za današnje škole.

Istraživačka pitanja

Cilj istraživanja bio je steći uvid u karakteristike otvorene uprave primijenjene u školama putem suradničkog elektroničkog upravljanja. Pokušalo se odgovoriti na tri istraživačka pitanja:

(1) Koje je mišljenje članova društva o blagodatima principa otvorene uprave u školama?

(2) Koji su *2.0 materijali* najbolje ocijenjeni za promoviranje otvorene uprave i e-uprave u školama?

(3) Koje blagodati promovira politika otvorene uprave posredovana informacijsko-komunikacijskim tehnologijama u školama?

Metoda

Svrha ove studije višestrukih slučajeva bila je ispitati mišljenje obrazovne zajednice o primjeni principa otvorene uprave i e-uprave u školama posredstvom informacijsko-komunikacijskih tehnologija. Svrha fenomenološkog istraživanja nije pronalaženje poopćenja, već detaljan opis širine i dubine individualnog iskustva te pojave i značenja struktura takvoga iskustva (Creswell, 2003). Stake (2006: 8) istaknuo je da su studije višestrukih slučajeva „studije potankosti prije nego poopćavanja". Ova je studija ograničena na 10 škola u Španjolskoj. Stake je naglasio potrebu za pronalaženjem zajedničkih karakteristika unutar individualnih slučajeva koji se mogu povezati u kategorije. Stake se referirao na skupinu, kategoriju ili pojavu terminom „quintain" (Stake, 2006). „Quintain" ovoga istraživanja imao je jednu zajedničku karakteristiku. Sudjelovale su škole u Toledu koje su prepoznate po svojim vodećim pozicijama u obrazovnim rezultatima i društvenim programima. Ova studija višestrukih slučajeva (Bogdan i Biklen, 1982; Stake, 1995; Merriam, 1998) sadržavala je podatke s intervjua prikupljene tijekom šest dana provedenih u svakoj školi. Pet ključnih sudionika imalo je ulogu istraživača suradnika tako što su davali povratne informacije i surađivali u provođenju induktivne analize podataka. Stalna usporedba među raznim školama kakvu su predložili Bogdan i Biklen (1982) ima za cilj generiranje suprotnih teorija naučenih u različitim kontekstima. Raspon i vrste institucija ne predstavljaju poteškoću, već metodološko bogatstvo koje generira veću vjerodostojnost rezultata, pružajući opće obrazloženje u višestrukim kontekstima. Nadalje, usporedba tih škola produktivna je u smislu sljedećih karakteristika:

– S regulativnog gledišta uključuje potpun raspon vrsta srednjih škola koje trenutno postoje u Španjolskoj i širom svijeta.

– Ponavljanje iste studije, varijabilnost i uravnoteženost ruralnog nasuprot urbanom, udruženog nasuprot privatnom itd.)

– Predstavili smo škole s različitim brojem učenika, čime smo postigli varijabilnost uzorka.

Stoga, usporedbom ovih škola i testiranjem naših hipoteza i zaključaka u višestrukim edukacijskim okruženjima predstavljamo metodu generiranja samostalnih teorija različitih razina s obzirom na broj prikupljenih informacija i uzorak ispitanika: učenika, učitelja, obitelji i školskih inspektora. Proces istraživanja uključivao je sljedeće faze:

1. U prvoj fazi uključivanja škola primijenjeni su istančani instrumenti. Prethodno su Službe prosvjetne inspekcije provele vrjednovanje upitnika i instrumenata upotrijebljenih za prikupljanje podataka.

2. Podaci su prikupljeni pri posjeti prosvjetnog inspektora, a rezultati su analizirani u različitim školama u okviru provincije, u cilju obogaćivanja poredbenih rezultata teorije i studije slučaja.

3. Rezultati su uspoređeni u okviru različitih edukacijskih područja, a nepouzdani upitnici i rezultati su odbačeni.

Prikupljanje i analiza podataka

Studija višestrukih slučajeva provedena je tijekom 2011. godine u 10 škola iz različitih sociokulturnih i ekonomskih područja španjolske provincije Toledo. U Tablici 1 prikazane su karakteristike podataka.

Tablica 1.

U Tablici 2 prezentirani su ključni ispitanici i upotrijebljene tehnike.

Tablica 2.

Populacija koja je sudjelovala u ovom istraživanju sastojala se od članova edukacijske zajednice iz 10 različitih škola iz Toleda. Prigodni uzorak izlučen je iz te populacije (n=220).

Postupak i instrumenti

Podaci su prikupljani tijekom dva mjeseca tehnikom intervjua provedenog s individualnim sudionicima, putem upitnika, radom u radnim skupinama, bilješkama sa sastanaka, osvrtom sudionika i bilješkama i osvrtima istraživača. Svakodnevno su vođene detaljne bilješke i osvrti kao i trag o tome gdje i kad su podaci prikupljeni i analizirani. Razvijena su istraživačka pitanja o otvorenoj upravi i principima e-uprave primijenjenim u školama uz podršku informacijsko-komunikacijskih tehnologija. Svi su intervjui prethodno dogovoreni, snimljeni kazetofonom i transkribirani kako bi

se osigurala točnost. Te tehnike imaju važnu komplementarnu vrijednost jer mogu pomoći u razumijevanju i poimanju onoga što ispitanik/ispitanica misli i vjeruje i kako interpretira svoj svijet. Nasuprot tome, promatranje nam pomaže precizno ocijeniti sadržaj, odnosno aktivnosti informanata s obzirom na to da se nalaze u svojem prirodnom kontekstu djelovanja. Pitanja pripremljena za razgovor s ispitanicima osmišljena su tako da usmjere sudionike prema strategijama otvorene uprave primijenjenim u školama te prema izazovima, strategijama i uspješnosti e-uprave. Intervju se sastojao od tri temeljne sekcije: tehnologija i komunikacija, politika i stil vodstva otvorene uprave te zaključak. Na temelju tih aspekata ispitanici su trebali opisati svoja opažanja i stavove prema otvorenoj upravi i izazovima te strategijama e-uprave u kontekstu virtualne edukacije.

Tablica 3.

Kako bi se dodatno ispitala trenutna situacija, izradili smo tri upitnika izrađena po principu Likertove skale (1 – 5), kojima se moglo mrežno pristupiti, a koji su bili namijenjeni obiteljima, učenicima i učiteljima administratorima. Pouzdanost unutarnje dosljednosti testirana je Cronbachovim alfa koeficijentom (0.901), dok je faktorska analiza upotrijebljena za identifikaciju temeljnih konstrukcija. Testovi niza pretpostavki, prema multiosobinskoj imultimetodskoj matrici, upotrijebljeni su u cilju potvrđivanja hipotetske komponentne strukture. Ispitanici su trebali popuniti jedan od ova tri upitnika na mreži, ovisno o tome koja je bila njihova uloga u školi. Istraživač je potom podijelio podatke u dvije zajedničke teme: mišljenje članova edukacijske zajednice o otvorenoj upravi u školama i koji su *2.0 materijali* najbolja podrška e-vodstvu i principima otvorene uprave u školama. U analizi podataka dobivenih na Likertovoj skali, upotrijebljena je skala tipa Cronbach alfa te je primijenjena komponentna analiza i izračunati Cronbachovi alfa koeficijenti. Elementi koji su smanjivali alfa koeficijent isključeni su iz skala. Potom su izračunate srednje vrijednosti po skali. Kako bi se ispitao utjecaj pozadinskih varijabli na dizajn i razvoj strategija otvorene uprave te na uporabu informacijsko-komunikacijskih tehnologija u promoviranju vodstva, izračunati su koeficijenti Pearsonove korelacije i provedene su multiple regresijske analize. Nekoliko je strategija upotrijebljeno kako bi se provjerila točnost rezultata, između ostalih razgovor s vršnjacima, provjera članova te uporaba opisa. Slučajeve su pregledali kolege, odnosno članovi nastavnog osoblja upoznati s projektom i službama prosvjetne inspekcije u svrhu dobivanja povratne informacije o sveobuhvatnosti slučajeva i literature u vezi problema pronađenih u svakom slučaju. Upotrijebljeni su bogati opisi i detaljni izvadci iz podataka vezanih uz svaki slučaj kako bi se uključilo čitatelje i potaknulo ih na donošenje vlastitih zaključaka. Izvršena je triangulacija informacija prikupljenih različitim tehnikama praćenja u svrhu povećanja vjerodostojnosti rezultata istraživanja pročišćavanjem problema prirođenih uporabi jedne metode prikupljanja podataka i kontrolom osobnih naklonosti voditelja. Prema Flicku (2004) triangulacija gledišta povećava pažnju usmjerenu na proučavanu pojavu.

Triangulacije
- Triangulacija analize podataka (obitelji, učenici, učitelji i službe inspekcije)
- Triangulacijske tehnike upotrijebljene pri prikupljanju podataka (upitnik s Likertovom skalom i otvorena pitanja).
- Triangulacija – privremena i trajna longitudinalna.
- Triangulacija iz različitih izvora ili od različitih ključnih ispitanika (koordinatora, ravnatelja, učenika i učitelja).

Rezultati

Kvantitativni rezultati analizirani su pomoću SPSS statističkog programa 16.0. Upotrijebljena je deskriptivna analiza i kontingencijske tablice koje su sadržavale frekvencije i postotke analiziranih varijabli. Pomoću upitnika i intervjua ispitali smo procjenu, mišljenje, očekivanja i preporuke različitih članova edukacijske zajednice o principima otvorene uprave i politika primijenjenih na upravljanje i edukacijsko vodstvo te utjecaj informacijsko-komunikacijskih tehnologija na iste. Pet varijabli koje su ponovili ispitanici na svim intervjuima (učenici, učitelji, obitelji i administratori) s višom zastupljenosti i produktivnijim *2.0 materijalima* prikazane su u Tablicama 3–7.

Mišljenje o prednostima principa otvorene uprave u školama

Tablica 4.

Varijable s višom zastupljenosti u svim sektorima bile su *globalno sudjelovanje* (n=3,45–86,25%) i *suradnja* (n=3,41–85,25%). Te dvije varijable, koje čine temeljne principe otvorene uprave, visoko cijene svi članovi obrazovne zajednice kao dva najvažnija doprinosa koje bi škola dobila usvajanjem politike otvorene uprave.

Očekivanja učitelja i administratora o potencijalu informacijsko-komunikacijskih tehnologija za razvoj otvorene uprave i e-vodstva

Analizirali smo očekivanja učenika, obitelji, učitelja i administratora o *2.0 materijalima* i njihovom utjecaju na principe otvorene uprave. Podijelili smo očekivanja u pet sekundarnih varijabli. Rezultati koji se tiču produktivnijih *2.0 materijala* predstavljeni su u Tablicama 5–8.

Tablica 5.

Tablica 6.

S obzirom na dobivene srednje vrijednosti, možemo reći da su učitelji i administratori slično ocijenili pet sekundarnih varijabli. Istaknimo nekoliko primjera: *sloboda informacije* (n=3,59–89,75%), npr. N3: „Video vodstva i forumi olakšavaju mi poslati obavijesti obiteljima na početku i tijekom akademske godine.“; smanjena papirologija (n=3,48–87%), npr. N12: „Kad koristim virtualni plan i kalendar, smanjujem letke i papirologiju.“; *komunikacija i koordinacija* (n=3,43–85,75%), npr. N7: „Slanje elektronskih poruka, forumi i prostori za čavrljanje (engl. chat) pomažu mi biti uključenim/om u akademski život učenika te pri suradnji s obiteljima tijekom godine.“

Ova tri elementa najviše su cijenjena očekivanja. Učitelji i administratori smatraju da su najvrjedniji *2.0 materijali* za razvoj principa otvorene uprave u školama forumi (71%), e-poruke (60,5%) i e-informacije među kolegama (70.5%).

Očekivanja učenika i obitelji o potencijalu informacijsko-komunikacijskih tehnologija za razvoj otvorene uprave i e-vodstva

Tablica 7.

Tablica 8.

S obzirom na dobivene srednje vrijednosti, možemo reći da su učenici i obitelji slično ocijenili pet sekundarnih varijabli. Ističemo neke primjere: *komunikacija i koordinacija* (n=3,53−88,25%), npr. N8: „Primam elektronske poruke od učitelja kojima me obavještavaju o akademskom napretku svoga djeteta kojemu sam tako u mogućnosti bolje pomoći.“; *sloboda informacije* (n=3,40−85%), npr. N1: "Mogućnosti čavrljanja, forum i Wiki omogućuju mi potpun pristup akademskom razvoju svojega djeteta.“; *objavljivanje podataka* (n=3,39−84,75%), npr. N5: „Virtualne su informacije uvijek dostupne te ne trebam ići u školu da bih bio/bila potpuno informiran/informirana.“ Ovi elementi predstavljaju očekivanja ocijenjena kao najvrjednija.

Učenici smatraju da su najvrjedniji *2.0 materijali* za razvoj principa otvorene uprave mogućnost čavrljanja (87%), e-informacije među kolegama (78%), forumi (75%) i elektronske poruke (71%). Mišljenje obitelji ovisilo je o njihovoj tehnološkoj pismenosti. Obitelji su smatrale da su najvrjedniji *2.0 materijali* plan i kalendar (81%), elektronske poruke (78%) i e-informacije među kolegama (71%).

Preporuke učenika, obitelji, učitelja i administratora o potencijalu informacijsko-komunikacijskih tehnologija za razvoj otvorene uprave i e-vodstva

Tablica 9.

Četiri preporuke pokazuju slične rezultate (Tablica 8). Primjećuje se da su elementi *Odrediti različite komunikacijske potrebe i odgovoriti na njih* (n=3,45−91,5%) i *Razmotriti razinu vrsnosti u uporabi informacijsko-komunikacijskih tehnologija* (n=3,45−87%) dvije najvažnije dimenzije koje edukacijski voditelji uzimaju u obzir za razvoj inicijative otvorene uprave i e-vodstva. Također, važnim su smatrali i *Poticanje medijskog obilja* i *Razvoj edukacijskih sredina s kreativnom suradnjom/podrškom*. Prosječna procjena očekivanja učitelja i administratora o razvoju otvorene uprave putem informacijsko-komunikacijskih tehnologija prikazana je u Tablici 9.

Tablica 10.

Anova

Analiza varijance provedena je u svrhu testiranja postojanja odnosa među stavovima koje su izrazile različite skupine ispitanika: učenici, obitelji, učitelji i administratori

(Tablica 9). Referentna vrijednost za prihvaćanje ili odbacivanje nulte hipoteze bila je stupanj značajnosti. S obzirom na to da je on bio manji od 0,05, nulta hipoteza je odbačena te je prihvaćena alternativa. Drugim riječima, zaključili smo da postoji zavisni odnos između stavova učenika, obitelji, učitelja i administratora.

Tablica 11.

Rasprava

Naše je istraživanje pokazalo da analizirane obrazovne zajednice visoko cijene to što škole moraju integrirati u svoj rad principe otvorene uprave i e-vodstva. Osim toga, očekivanje da će principi otvorene uprave, kako su prethodno definirani uz podršku informacijsko-komunikacijskih tehnologija, znatno unaprijediti rad škola bilo je zajedničko članovima edukacijske zajednice. Otvorena vlast u školama posredovana informacijsko-edukacijskim tehnologijama mogla bi izgraditi okolinu za učenje kao usklađen i sinegričan sustav koji:

- Stvara praksu učenja, ljudsku podršku i fizičku okolinu koja podržava poučavanje, učenje, mentorstvo i savjetodavstvo.
- Podržava profesionalne zajednice za učenje koje omogućavaju voditeljima da surađuju, dijele primjere dobre prakse i integriraju informacijsko-komunikacijske tehnologije u organizaciju škole.
- Omogućava nepristran pristup podacima, tehnologijama i izvorima.
- Pruža arhitekturu i unutarnji dizajn za skupno, timsko i individualno učenje.
- Podržava proširenu društvenu i globalnu uključenost u proces učenja.

Komunikacijske tehnologije stvaraju poveznice među učenicima, roditeljima, obiteljima, administratorima i učiteljima koji se nalaze u srcu svih snažnih zajednica učenja. Informacijski sustavi upravljanja školama utemeljeni u informacijsko-komunikacijskim tehnologijama podržavaju transparentnost, suradnju i sudjelovanje putem veza neophodnih za uključivanje ljudi u edukacijski sustav. Osim toga, e-vodstvo i programi upravljanja putem mreže (engl. online) omogućuju zaposlenim obiteljima da budu u kontaktu sa školom u bilo kojem trenutku, bilo gdje te ujedno potiču razmjenu zamisli i dobre prakse sa svim članovima edukacijske zajednice (KouzesiPosner, 2002). Virtualne okoline transformiraju škole s ciljem povećane uporabe tehnologije kako bi se nosile s kompliciranom paletom zadataka za koje su odgovorne, uključujući upravljanje osobljem, hranom i transportom, zalihama i materijalima za poučavanje, sigurnošću i, naravno, učeničkim informacijama, kao što se vidi iz literature (HeinrichiMarschke, 2010; RestaiPatru, 2010; BritoiPerraut,2010; Davis, KeeiNewcomer, 2010; Dawes,2010; TeeiLee,2011).

Podržavajući otvorenu upravu, informacijsko-komunikacijske tehnologije primarno promoviraju sljedeće aspekte:

- Međuovisnost

Pri dijeljenju vještina i informacija, svaki član edukacijske zajednice daje svoj vlastiti prilog zajedničkom cilju provođenja edukacije.

- Propusne granice

Snažna međuovisnost sudionika dokida organizacijske granice jer učitelji, učenici i obitelji ulaze u sporazume suradnje.

- Suradnja

Uključivanjem informacijsko-komunikacijskih tehnologija, virtualni se ured može koristiti videokonferencijom na svom sučelju, softverom izrađenim u svrhu suradnje te unutarmrežnim sustavima kako bi se povećao protok informacija među članovima tima, učiteljima i obiteljima.

- Globalna suradnja

Zahvaljujući informacijsko-komunikacijskim tehnologijama kao glavnom načinu komunikacije, školsko sudjelovanje ne ovisi o lokaciji. Inovativne tehnologije su omogućile obiteljima suradnju neovisno o mjestu i vremenu te su omogućile povezanost među njima.

Na temelju odgovora na pitanja otvorenoga tipa dobivenih u intervjuima mogu se istaknuti neke preporuke za promicanje otvorene uprave i e-vodstva uz podršku informacijsko-komunikacijskih tehnologija.

- Obitelji savjetuju voditeljima da upotrijebe bogatstvo medija, uključujući uobičajene medije (npr. e-poštu i telefonski poziv) te napredne tehnologije (npr. brzi sastanak (engl. flashmeeting) i videokonferenciju).
- Učitelji i obitelji preporučuju voditeljima da budu svjesni činjenice da su tehnologije samo djelomičan element timskog uspjeha i da moraju odrediti svoje buduće ciljeve te razviti poticajnu suradnju među edukacijskim okolinama.
- Potrebe komunikacije među učenicima i učiteljima određuju tipove primjerenih računalno posredovanih komunikacijskih sustava. Primjerice, skupna rasprava o kritičnom pitanju mentorstva ili savjetodavstva može zahtijevati bogatiji komunikacijski kanal uslijed potrebe za visokim stupnjem interakcije, brze povratne informacije te potrebe da se simultano vide komentari sudionika. S druge strane, kad se članovima tima šalje memorandum o mjesečnom sastanku, e-pošta može biti učinkovito sredstvo jer je u tom slučaju potrebno manje interakcije ili neposredne povratne informacije.
- Obitelji i učitelji preporučuju voditeljima da budu svjesni različitih razina vještine članova edukacijske zajednice u služenju naprednim tehnologijama. Naravno, učinkovitost će biti optimizirana onda kad članovi tima budu posjedovali odgovarajuću razinu vještine, znanja i iskustva služenja tehnologijom (McCauley, VanVelsoriRuderman, 2010).

Zaključci

Otvorena uprava i e-vodstvo čine neophodnu i visoko produktivnu simbiozu za škole dvadeset i prvog stoljeća. Informacijsko-komunikacijske tehnologije igraju odlučujuću ulogu u toj simbiozi pri ostvarivanju prijedloga obrazovne uprave o tome

da škole postanu institucije veće dinamike, suradnje, sudjelovanja i transparentnosti prema cijelome društvu. Bez obzira na to kako se tehnologije mijenjale, ljudi moraju osjećati da su one važan dio organizacije i aktivnih građana u procesu odlučivanja. Povezivanje škole i njezinih članova putem informacijsko-komunikacijskih tehnologija jedan je od najboljih načina promoviranja otvorene uprave. Svi članovi zajednice mogu surađivati na projektima i u školskim programima, sudjelovati u donošenju odluka, razvijati međusobne odnose, znati što se događa u školi i osjećati se aktivnima u različitim dimenzijama obrazovnoga procesa.

Virtualna infrastruktura izrađena u svrhu fleksibilnosti i razvoja, može pospješiti mreže i razviti strategije otvorene uprave: istražiti pretpostavke, prikupiti i podijeliti podatke iz različitih izvora, osmisliti alternativne scenarije otvorenog donošenja odluka te studije i istraživanja mišljenja u svrhu postizanja informiranoga izbora. U ove dane ograničenih materijalnih sredstava i visokih očekivanja, planiranju tehnologije kojom se škole koriste mora se pristupiti na inteligentan način. Kako bi napredovale, škole moraju graditi nove oblike profesionalnih odnosa na kojima se temelje organizacijski kapaciteti i potiče osoban rast.

Okoline učenja današnjih i budućih škola moraju uključiti bogatu kombinaciju medija i sredstava, različitih kultura te virtualnih i stvarnih odnosa u svrhu njegovanja i razvoja suradnje, transparentnosti te poticanja profesionalnog i organizacijskog učenja. E-uprave im moraju pomoći artikulirajući i komunicirajući ne samo to kamo se organizacija kreće, već i kako stići do cilja njegujući vrijednosti kao što je iskrenost, razumijevanje, bdijenje i dobra volja. Inicijative otvorene uprave u školama uz podršku informacijsko-komunikacijskih tehnologija mogu u konačnici imati učinak poticanja dubljih promjena u strukturi i organizaciji škola iznošenjem načina na koje transparentni i suradnički administrativni mehanizmi, koji uključuju sve strane u obrazovnome procesu, proizvode otvorenije i uključenije edukacijske zajednice. Cilj inicijative otvorene uprave jest učiniti informacije i proces odlučivanja u školama dostupnim obiteljima, učiteljima i učenicima u svrhu izgradnje demokratskih struktura kojima se unaprjeđuju edukacijski procesi.

Na razmatranje otvorene uprave i e-vodstva u školama putem informacijsko-komunikacijskih tehnologija možemo primijeniti riječi predsjednika Obame izrečene na Općoj skupštini Ujedinjenih naroda održanoj 2012. godine: „U svim dijelovima svijeta vidimo obećanje inovacije za izgradnju otvorenih i odgovornih škola. Sad moramo graditi na temelju tog napretka. (…) trebali bismo donijeti posebne dužnosti u svrhu promoviranja transparentnosti, borbe protiv korupcije, jačanja uključenosti građana te unapređenja novih tehnologija kako bismo ojačali temelje slobode u našim školama dok postižemo ideale kojima možemo osvijetliti svijet."

Ograničenja studije i daljnja istraživanja

U istraživanju smo se usredotočili na deset španjolskih škola različitih društveno-edukacijskih profila. Iako je uzorak dovoljan i reprezentativan jer uključuje velik broj

članova edukacijskih zajednica, u budućim bi se istraživanjima trebao proširiti uzorak sa svrhom pokrivanja različitih međunarodnih konteksta kako bi se iznjedrile nove perspektive za opće unaprjeđenje uprave i organizacije škola.

Zahvale