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**ONLINE SCHOOL COMMUNITIES:
THE ROLE OF PARENTS IN BUILDING THE SCHOOL THROUGH
NETWORKING.**

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Abstract: *Digital communication and management of the school through networks makes educational communities (families, teachers and students) to be integrated in a more productive and beneficial way at the school. To this end, in this current Information Society, the school communities need institutional support based on interactive tools that are operative in this digital context. Parents should be informed and participate constantly about the progress of their children but also they must be involved in the knowledge of tasks, exercises and activities that are performed in the classroom and school. These aspects: school organization, digital communication among all members of school communities, educational programming, along with teaching functions can be significantly improved with the use of institutional interactive networks that include communicative functions and school management in a virtualized way. We present in this article a quantitative and qualitative evaluation of these virtual tools in improving the quality of educational institutions.*

Key words: *Networking. School Communities. School Organization. Tutoring and Coaching. Collaborative Virtual Environments.*

I. INTRODUCTION

The new forms of school organization are betting on the introduction of corporate management networks to enable and enhance virtualized school organization and teaching functions. The functions that mainly enhance are: functions related to communication process of teaching programming, e-learning to support the face to face sessions and communication among teachers, students and families electronically. Social computing represents a new research frontier for information systems. For example, it is transforming various aspects of software development: the development process is becoming participatory and often voluntary; the type of tools used is changing, and computing is moving to a more network-centric, and less of a desktop-bound stage. It transforms the way individuals process and interact with information, rendering a much more dynamic and mobile information domain centered on individual participants who interact with it through a wide variety of devices. The need for organisations to learn and to innovate rapidly is a consistent theme in approaches to novel organisational forms (Fulk & DeSanctis, 1995). It seems that hierarchies are being replaced by communication and influence relationships (Reich, 1991), resulting in more flexible organisational forms that rely on peer-to-peer collaboration in achieving their objectives. We develop a research in which we analyze the assessment by different sectors of the educational community of

the functionality of these new management tools and virtualized communication in improving educational quality and relationships in schools.

The advances of technology have changed the ways communities communicate. From the 1990s, computers have allowed bringing together people who did not necessarily know each other before meeting online (Rheingold, 2002). The terms used in exploring the new forms of communities include: virtual community (Wellman, 1997), computer-supported social networks (Wellman *et al.*, 1996), computer-mediated communication (CMC) groups (Blanchard and Markus, 2004), online community (Preece, J. and Maloney-Krichmar, 2003), communities in cyberspace (Kollock and Smith, 1999) and web-based communities, or web communities, www communities or www-based communities (all used interchangeably on the International Journal of Web-Based Communities web site). With *The Virtual Community*, the concept of community was challenged and re-defined, as virtual communities were defined as “social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace” (Rheingold, 1993).

In line with the rise of online networks, the Internet is argued to have broadened the notion of the community from physical, co-located groups towards collectives that are able to transcend time and space (Jones, 2004; Castells, 2001). Whereas prior studies have mainly adopted the concept of virtual community, some scholars refer to online communities instead (Preece, 2000).

II. PRINCIPLES FOR A VIRTUAL MANAGEMENT OF THE SCHOOL

In general, communities could be understood as “selforganizing groups of individuals organized around a perceived need to satisfy a shared interest or set of interests by cooperating” (Baker & Ward, 2002, p. 211). In order to capture the mediated nature of interactions, Internet-based communities are most commonly referred to as virtual communities (VCs), in which closeness is based more on shared interest than shared social characteristics such as socio-economic status or gender (Wellman & Gulia, 1999, p. 186). Wenger (2000) notes that “participation in social communities shapes our experience, and it also shapes those communities, the transformative potential goes both ways”. When computer networks link people as well as machines, they become social networks, which we call computer-supported social networks (CSSNs). Three forms of CSSNs are rapidly developing, each with its own desires and research agendas. Members of virtual community want to link globally with kindred souls for companionship, information, and social support from their homes and workstations. One study found that work groups using computer mediated communication (CMC) have a higher level of communication than those that do not (Bikson & Eveland 1990), while another found that heavy CMC use reduces face-to-face and telephone communication (Finholt et al 1990). A self-organisation is formed when actors have the capacity to act and make choices, which creates social structures that enable and constrain action.

Management rather than control the subject, recognizes the need to promote training in multiple areas of key competences for all actors in the system that results in a synergy capable of promoting a learning organization with creativity and encouraging participation, responsibility and commitment. These elements lead to a working environment based on trust, that encourage creative coevolution between subjects, and between them and the environment. In communication processes and management of teaching duties, technological tools are an invaluable resource and they help to monitor the functional capacity of teachers in the performance of their pedagogical and curricular functions.

The school is shaped as a heterogeneous group of people where participation appears as one of the dynamics needed to assign the name of community. For develop a real community there must be interaction. Interactive educational networks support teaching duties from the perspective of a participatory and collaborative community. The Universal Declaration of Human Rights (1948) recognizes in its Article 27.1 that:

"Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits."

This participation appears not as a technological fashion but as a social and pedagogical need. Nowadays to carry out this school, it is eminently necessary to implement participatory structures in which all members work together, participate and feel active members of the school community. Developing school communities is a necessary goal but difficult to achieve if we are not able to integrate and effectively channel to promote active participation. Technological tools arise as a resource that helps to make effective and quality networked school community, especially when these tools are embedded in the improvement plans agreed and planned from the reality of education in schools, families and in the environment.

We also need a set of commitments, without which the driving actions of participation would be meaningless, they would be doomed to failure, among those principles we would include:

- The common interest of its members.
- Availability for teamwork or collaboration simultaneously.
- Assume energizing principles.
- Define the input phases to avoid dispersion.
- Promote opportunities for spontaneous reorganization of the flow of information.

In addition to the benefits and the minimum principles that must be met, it would be also desirable to consider more general principles to make an effective virtual participation:

- *It must be voluntary*, so it can be freely accepted by each person and as a result of a process of reflection on the positive aspects, such as the degree of value of their contribution to a unique educational project, harmonic culture and needs of each school community. Educational networks based on the interactivity of ICT enable a free and voluntary participation at any time. There is a minimal need training which can be provided by the school itself with the administration support.
- *It avoids being presented in a redundant format*, avoiding over-generalization thus it is not scientific to apply similar formulas to different organizational situations. So this organizational form or mode of participation has to be creative, adhocistic consistent with the reality of each stage and in perfect harmony as possible with the lines of innovation to develop at any time. ICT enable creative participation and contextualized on the stage of integrating all school community members in an interconnected network of (co) management and collaboration.
- *It must be local*, integrated into the educational philosophy which distinguishes, in a given period, the planning of a particular community. It will serve in any case, the uniqueness of a learning environment and global education that connects harmoniously with school experiences (social, family and community) of the students. ICT encourages a collaborative and participative learning environment, harmonizing different academic and extracurricular activities.
- *It must be as direct as possible*, in an effort to exploit the educationally knowledge and experience of various community members. In this sense, the school shall provide to students, by appropriate simulations, the educational experience of those teaching-learning situations projecting into the social and transform classroom activity in a real life skills. ICT involves families in the teaching-learning process from the social sphere, joining in the educational process to parents and students.
- *It must be directed towards action*, deepening in a practical dimension, it should be maintained in a balanced proportion between utopia and reality, without polarizing temptations that could lead organization to extreme situations never desirable. The actions based on collaborative

networks promote harmony among faculty, students and parents. They perceive the problems at school, at home and in the community in a more comprehensive and holistic way, which favors a more personalized treatment inside and outside of the school.

Thus, the school, and its primary function of providing compulsory education, also promotes a dynamic integration with the community. There are four attributes of online communities: policies, purposes, people, and software; these attributes are grouped under two concepts, sociability and usability. Despite the contested nature of the concept (Preece & Maloney-Krichmar, 2003), there is agreement that people in online communities are engaging in persistent conversations and interactions in online information spaces. There is also agreement that information and communication technologies (ICT) play important roles in these communities. As online communities proliferate in the Web 2.0 environment, researchers are asking how such communities are formed, sustained, changed over time, and dissolved and are using a variety of theoretical and methodological tools to study them, seeking to understand their trajectories and dynamics. One feature common to these communities is that they are digitally mediated and persistent settings within which people routinely interact, constituting and reconstituting their social worlds over time. They have collective histories and as participants interact in them, norms and guidelines develop that shape the behaviors and interactions of participants. Another feature common to all online communities is a reliance on sophisticated technical infrastructures both as sites for interaction and as means of access for participants.

III. METHOD

The purpose of this case study is to assess the appreciation of the functionality of technological tools in improving teaching functions and processes of communication in educational communities. The case study was carried out during 2011 in a hundred schools in the province of Toledo (Spain) with different sociocultural and economic context with the characteristics outlined below:

Table 1: Data

	Primary Schools	High-Schools	Private with concert Primary Schools	Private with concert High-Schools	Private Schools	Total
City	20	25	10	10	5	70
Rural	20	10	0	0	0	30
Number of Students	1534	6845	957	2301	701	12338

The study covers a wide range of tasks of different nature, to be resolved effectively, have required the use of various methods. Along the same methods were used both quantitative and qualitative, whereas both are complementary and can benefit from each other (Cook and Reichardt, 1997). Thus, we have taken a qualitative approach in trying to understand the behavior of teachers and supervisors of education (25 teachers and 2 school inspectors) involved in the monitoring process. Our study uses the case study as strategy, since as noted by Biddle and Anderson (1989), "suggest predictions that can be used for other teaching contexts we have not examined, make explicit the assumptions with which we face events and provide tools that can be used to address and understand the confusing phenomena of teaching".

For data collection techniques have been used the ethnographic interview and participant observation on one side and on the other hand, monitoring the operation and content of the social network as an active participant. These techniques have an important complementary value, as the interview can understand and grasp what an informant thinks and believes, how he/she interprets his/her world and what meanings they use and manage. By contrast, the observation allows us to precisely access the content; i.e. the actions of the informants as they occur in their natural context of action. According to Kemmis and McTaggart (1988) we consider that the observation serves to document the effects of critically informed action and seeks to achieve a reliable basis for reflection.

Participant observation has been made by the education inspector monitoring the functioning of social networks and the visit to the school and the classroom. In this way, he/she can provide guidance, make appropriate recommendations or requirements necessary for the teachers. It can also help promote good teaching practices all of which may result in improving the quality of education in schools. We used a questionnaire to guide the interviews. Several authors of ethnographic research highlight the importance of the questionnaire, as Woods (1986), indicating its relevance as a means to gather information for larger samples than those obtained through personal interviews or individualized sources. Also Kemmis and McTaggart (1988) referred to in that school communities can improve what they do, by the findings of the questionnaire data that will enable appropriate treatment and reflections.

The questionnaire focuses on three areas:

Area 1: Monitoring and execution of teaching functions with ICT support.

Area 2: Digital communication among all members of the educational community.

Area 3: Advice, guidance, participation and information with ICT to various sectors of the educational community.

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

IV. RESULTS

From the analysis of data, we extracted the following results:

Table 2. Questionnaire 1

AREA 1: Monitoring and execution of teachers tasks with ICT support.			
1. What action based on ICT means an improvement of teaching functions?			
	Family	Teacher	Supervisor
a) Virtual Classroom	65%	72%	90%
b) Communication of Absences	97%	90%	100%
c) Academic Information for Families	89%	79%	88%
d) Virtual Didactic Department	65%	69%	87%
e) Virtual Tutoring	71%	67%	89%
f) Digital agenda	85%	77%	93%
g) Electronic Assessment Information	91%	74%	99%
2. How do you rate the inclusion of ICT in teaching duties?			
	Family	Teacher	Supervisor
a) Excellent	81%	75%	80%
b) Very good	5%	10%	9%
c) Good	4%	5%	6%
d) Regular	10%	10%	5%
e) Poor	0%	0%	0%

AREA 2: Digital communication among all members of the educational community.						
1. What action based on ICT means improved communication among members of the educational community?						
	Family	Teacher	Supervisor			
a) E-mail	75%	67%	78%			
b) Communication of absences	95%	89%	100%			
c) Virtual Tutor	40%	54%	78%			
d) Virtual Agenda	67%	57%	69%			
e) Video conferencing	15%	5%	34%			
2. How do you rate the inclusion of ICT in communication between members of the educational community?						
	Family	Teacher	Supervisor			
a) Excellent	71%	45%	75%			
b) Very good	9%	15%	9%			
c) Good	10%	10%	6%			
d) Regular	9%	12%	6%			
e) Poor	1%	18%	4%			
AREA 3a (Family): Advice, guidance, participation and information with ICT to various sectors of the educational community.						
1. Rate the use of virtualized tutoring and counseling systems in the development of educational community counseling, guidance and / or virtual information.	1 0%	2 2%	3 26%	4 21%	5 49%	6 2%
2. Rate the use of virtualized tutoring and counseling systems in the development of personal and professional competences.	1 0%	2 1%	3 19%	4 21%	5 25%	6 34%
3. Rate the use of virtualized tutoring and counseling systems in your expectations about the school.	1 0%	2 3%	3 23%	4 25%	5 38%	6 11%
AREA 3b (Teachers): Advice, guidance, participation and information with ICT to various sectors of the educational community.						
1. Rate the use of virtualized tutoring and counseling systems in the development of educational community counseling, guidance and / or virtual information.	1 8%	2 6%	3 16%	4 20%	5 30%	6 20%
2. Rate the use of virtualized tutoring and counseling systems in the development of personal and professional competences.	1 6%	2 10%	3 19%	4 21%	5 25%	6 34%
3. Rate the use of virtualized tutoring and counseling systems in your expectations about the school.	1 0%	2 3%	3 23%	4 25%	5 38%	6 11%

V. DISCUSSION: POTENTIAL OF ICT FOR SCHOOL COMMUNITY NETWORK

Tools based on ICT enables the influence of parents on their children's academic performance, and it is possible an active and decisive participation in the structure and goals adopted by the school. What seems to be confirmed as a trend that we will not abandon it is the desire of parents to broaden the content of their relations with the schools. The adoption of new tools to support communication will enable that those parents who have not traditionally participated in the school are encouraged to participate; and not only as a testimonial way, but from the principles of active and (co) management. Especially encourage a more active participation on the following profiles of parents:

- People who were never elected to any post in a school board.
- Parents who have little information on the functions of the school board.
- People with a low level of education and low income.

- *People who do not share the opinion to the relevant value of school education.*
- *People who are very sensitive to the schooling of their children.*
- *People who express little or no desire to participate in matters of educational or administrative matters.*

These participatory cultures can be seen in items such as those established by the *Report of the Center on Families, Communities, Schools and Children's Learning* (1991) from Johns Hopkins University which includes six types of collaborative school-family-community. (Outlined in italics the contribution of technological tools in the enhancement of the items listed):

1. Advice from school to families. The school provides assistance to families in relation to the basic obligations of their students: a) health and safety, b) supervision, discipline and guidance c) positive home conditions that support the appropriate behavior for each level. *Educational networks provide the opportunity for professionals from the school: Department of Counseling, educators and tutors to create a virtual school where parents can create or participate in discussion forums, share positive experiences generated in the same context. This positive experience helps it to overcome conflict and deprivation.*

2. School-home communication. It is a basic obligation of the school to inform families about school programs and student progress through letters, phone calls, report cards, newsletters, parent conferences, etc. *ICT position the school to the challenges of the Information Society to use ICT as a powerful and interactive way to initiate and strengthen the dissemination of information that enhance these tools: mobile messages or absences appointments with the tutor, monitoring of individual pupils with virtualization of the didactic department, access to academic information through virtual classroom and discussion forums and surveys that exceed mere information to enter into the collaboration and participation as hallmarks of a school network.*

3. Help of family and community to the school. Stimulus to school by parents and community volunteers, in order to help the principal and government team, faculty and students in school activities that are considered appropriate. *ICT promote that the center serves as educational support, social and personal families and parents in the teaching-learning process. They allow the student to interact with peers and teachers, and parents are encouraged to contribute to the achievement of the ends of the school. Participation in surveys, forums and supporting the management team in programming activities. It also operates as a speaker of constructive criticism from parents and teachers to the team.*

4. Advice from school to home learning. Transmission of ideas from teachers to parents to supervise and assist their children at home in activities coordinated with the education received in the classroom. Networks within departments support parents to conduct a detailed monitoring of their children in school; download activities and track the tasks that their children must performed daily.

5. Community participation in school governance. Parents and other residents of the community play the role of directors and participate in making decisions based on the establishment of parent associations, advisory committees, school boards, and / or independent groups working to improve the school. *ICT enable working families that can create virtual collaborative spaces and serve as empowerment of the educational work of the household.*

6. Exchanges with other community institutions. Participation in the school of any of the institutions that share some responsibility for the development of students. It includes programs for coordination between the school, and community support services to students and their families. *Virtual Learning Environments have a continuous encourage networking between the community and local entities that are related to the school, family and school. It can be started with the social projects of the local municipality, for example.*

What you get with these digital strategies and actions is that there is greater enhancement of learning through parents and their involvement in academic life and organization of schools. The education authorities of different countries are encouraging:

1. Formal mechanisms for participation of parents in decision making in schools, including their representation on school boards.

2. The inclusion of parents in school programs, using formulas such as open classrooms, alternative schools, and so on.

When parents are involved in school organization, teachers show a greater interest in non-school experiences of their students and become a more positive cultural background of families, with consequent favorable to school performance; parents who are treated as partners in school organization play a decisive role in the academic and behavioral development of their children.

We realize that the services offered to these Virtual Learning Environments can be summarized as follows:

▪ **Communications Service:**

- Send messages to families and check the messages sent and received.
- Show your opinion in the different surveys.
- Consult the news published on bulletin board.

▪ **Job Control.**

- Assign jobs to students
- Virtual assessment.
- Check the status of the commissioned work.

▪ **Follow-up examinations.**

- Set the date of the examinations and grading.

▪ **Communications absences**

- Receive and check notifications of absences of students by their legal guardians.

▪ **Track of students and teaching through the virtual classroom.**

▪ **Official Calendar.**

▪ **Personal Calendar.**

- Allows entering appointments of interesting events of an academic or personal.

Communities combine individual motivations, networks of relationships, shared cognitive patterns and relational dynamics into an organised structure. So in the schools of this 21st century the impact of communication technologies should adopt a socio-technical view encompassing the interplay between the technology and the surrounding social context.

Among the outcomes of routine interactions in online communities are the creation and recreation of structures that enable and constrain social interaction and practices within the community. This is one side of the duality of technology; people's actions and interactions reinforce and can sometimes change the ICT they use. On the other side of the duality of technology, participants, as they use ICT, are enacting social practices through which they develop, maintain and change their identities in the community. Among certain types of communities, the emergence and routinization of social practices and occurrences of identity formation can lead to the emergence of communities of practice (Baker-Eveleth, Sarker, & Eveleth, 2005; Wenger, 1998).

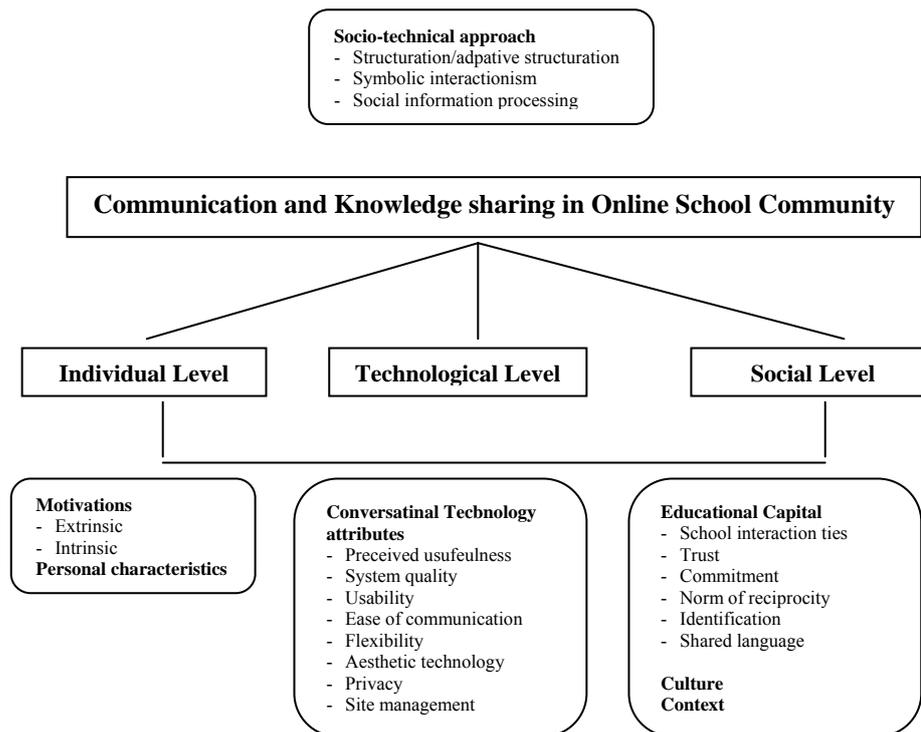


Figure 1. Online School Communities. Digital Functions.

VI. CONCLUSION

The open-innovation paradigm thus implies that schools need to open themselves up to the array of resources available beyond their boundaries, and to apply both internal and external knowledge. Social computing networks have opened an exciting new dimension to the schools. Virtualized Management of the school by teachers, members of the management team and family is a system that minimizes the time and integrates all members of the educational community. Among the most remarkable potential we highlight in this article the following ones:

- Integrate effectively to all members and sectors of the educational community of a school.
- Save time and energy in the development of school organization and academic management of schools.
- Keep up to date parents on the status of tasks, exams, absences, tests and exercises of their children.
- Allow to see information about the school or their children through the digital bulletin board service or email alerts.
- Facilitate the expansion or reinforcement of academic activities at home.
- Encourage the creation of an interactive network in order to (co) manage the school.

Among the main features we highlight the following:

- Make a direct management, user-friendly and updated daily.
- Generate database exportable and recoverable per year for statistical and internal evaluations of the school.
- The discipline and truancy are two areas of school management that are substantially improved with this type of applications.

- Communication among faculty, educational departments, tutors, parents and management team becomes more fluid, continuous and solvent. Communication can be activated according to the profile of community member in order to optimize the communication channels and the quality of the information provided.
- Encourage the active participation of all sectors in the educational process of students.
- Save time and improve the processes of school organization and academic management of schools.

Thus, it is necessary to advance in the theoretical and managerial understanding of Web 2.0; in relation to the school social communities in which it is embedded. With the transformation of social communities and recent advances in communication technology as its point of departure, this thesis aims at building a better understanding of the conditions of knowledge and communication sharing supported by conversational technologies in intra-organisational virtual communities on the one hand and virtual communities supporting external relationships with families on the other. Online school interaction among all community members also incorporates more sophisticated forms than declarative and procedural information exchange (i.e., questions and answers), such as transactive learning (knowledge about who knows what) and developing shared mental models through processes of sense making (see DeSanctis et al., 2003).

The Internet is not a separate social reality, it is rather an extension of other forms of life and another means of staying connected (Quan-Haase et al., 2002, p. 319): “We suspect that people not only have more relationships than in pre-Internet times, they are in more frequent contact with their relationships, and the strengthening of the bonds through more frequent contacts means that ties can be more readily mobilized for aid”. In sum, communication sharing in online school communities is facilitated by means of intrinsic and extrinsic motivation, personal characteristics, collective social capital, shared culture, and appropriate features of conversational technologies.

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