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ICT Alone is Not Enough, The Whole Village is Needed. A Community-based and Dialogic Approach to Technology in Schools

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Abstract

The socio-cultural context shapes learning and development. Thus, schools cannot ignore neither the transformations shaping their surrounding societies, but be an active part of them, nor what those transformations mean for school learning. In this regard, technology has changed the way we think and learn, and learning has been shown to be deeply linked to the community of which we are part. However, benefits of involving the community in the ICT use in schools are barely explored in the literature; this article is aimed to shed some light on that aspect. We draw from a successful case, the Ariño school, and based on the dialogic learning theoretical framework, different strategies that promote a dialogic use of ICT are presented: community involvement in self-sufficient classrooms, community involvement outside the school settings, and community digital literacy. This analysis leads to the proposal of a community-based and dialogic approach to technology in schools.

Keywords: ICT, dialogic learning, educational success, rural schools, community involvement

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We were very surprised, since the classroom was very different to the ones we used to have. Pilar, alumni and a mother of two students attending the rural school Ariño, compared her two children school to hers when she was a student there. The blackboard and the teacher standing in front of the well-seated and silence students working on their own or listening patiently to the teacher's lesson have been substituted by PC tablets, dialogues and circles of students, teachers and volunteers. This is how the Ariño learning community—two rural partner schools— look like today. Pilar reflected on the deep transformations the schools have undergone and in which ways neighbours have integrated Information and Communication Technology (ICT) in their everyday lives. The Ariño village has been included in the information society, not only because ICT has been made accessible but because they are used from a dialogic perspective. In this article, authors argue that in order to make ICT relevant for social inclusion, there is a need to develop a dialogic use of ICT that is means using ICT following the Dialogic Learning principles (Racionero & Valls, 2007). The case of Ariño shows how, the strong commitment of this community has led the village and the educational centre to be internationally recognized as "the school of the future." (Microsoft, 2007).

The transition from an Industrial to an Information Society has meant a shift from a focus on material resources to intellectual ones. Not only has it changed the way people work and manage their finances, but also their daily lives: in how they access knowledge; communicate; as well as socialise. Knowledge is a determining factor in the constitution and development of the Information Society, and consequently also in terms of people's inclusion into it (Castells et al. 1999). It is no longer true that "those who have the information have the power" since more and more information is easily accessible. The real challenge has changed from one of access to knowledge to that of selecting and processing knowledge to identify relevant information depending on the situation in hand (Flecha et al, 1999, p. 65).

This transition has not left education aside. Learning should include a critical approach to the use of technology, facilitating the acquisition of skills to select and process the information. Therefore, the teacher's role has changed from one of a knowledge provider to that of a facilitator

which helps students learn how to process and select relevant information from all that is available. The introduction of ICT in classrooms becomes a much more complex issue than a mere technical one. It requires a transformation of the teaching and learning context. This transformation can be achieved from a dialogic approach involving on it all the social agents, including: the family; the community; and the peers (Aubert, García & Racionero, 2009). In this article, the case of Ariño illustrates how the dialogic use of ICT involving strong community participation benefits not only the students but the whole village.

In doing so, the argumentation is structured into five parts. First, there is a literature review on the benefits of using ICT counting with community involvement. Second, the theoretical underpinnings of the dialogic use of ICT are presented. It is followed by an explanation of the methodology used, and a description of the selected case. Some of the findings related to the dialogic use of ICT are reported here as well as all the transformations which have been generated beyond the school walls. The article ends with some final reflections emerged from the findings.

ICT and community involvement in the schools

ICT has deeply shaped the most recent developments of teaching and learning. Educational success and social inclusion depend every time more on the skills to manoeuvre the existing information (Gorz, 1983; Castells et al, 1999; McFarlane & Sakellariou, 2002). According to Buckingham (2007), the new digital divide is not only defined by the ICT quality access, in terms of the equipment and the information resources, but more on the kind of support from other adults, if any, children receive in their ICT use. Children belonging to vulnerable groups or from LSES backgrounds tend to have more difficulties in having this type of access (Buckingham, 2007, p. 84). However, as argued here, by transforming the environment through community involvement in the dialogic use of ICT, this new digital divide can be diminish and even reversed.

These new tools and skills cannot be introduced at the school lonely

ignoring what is going on in the outside society. There is a growing need to coordinate what happens in the school with what happens at home, the street and the new virtual social spaces (e.g. instant message systems, social networks and so on) (Aubert et al, 2009). Research exploring the potential of community involvement in the use of ICT at the school is found to be an emerging field. While very limited attention has been paid in the community involvement in the ICT educational literature, a similar pattern is found in the case of school and community participation in the case of ICT access. Some of the relevant work in the area and more specifically the identified benefits are reviewed in what follows.

First, there is a body of research that has been exploring the crucial role that community involvement play in developing a critical use of ICT. For more than a decade, digital competence has been considered as one of the basic key competences for lifelong learning in the European Qualifications Framework (European Commission, 2005). Key competences were defined as a combination of knowledge, skills and attitudes which every individual needs for personal fulfilment and development, active citizenship, social inclusion and employment. However, there is a need for a step beyond of digital competence: a critical use of ICT. This skill should not only be learned for the academic purpose, but to be transferrable to the variety of contexts in which children are using ICT today. In doing so, the traditional teaching and learning model based on the exclusive relationship between the teacher and the students is not enough. The research conducted from the critical media literacy shows how teachers and adults in general should support the critical use of the media (Macedo & Steinberg, 2007). The interaction with peers or adults instead of an isolated use contributes to elaborate more critical analysis of the messages. For this to happen, it is necessary to create the conditions that allow for these spaces to exist during school hours, after school programs, weekends, at home and so on. Although children are very often much more grasped in the ICT use, the contents are mainly produced within the existing gender, cultural, sexual, consumption, value and other systems. Peers and adults can bring into dialogue their experience and knowledge to promote a more shared critical read of the world.

Research has also identified new emerging risks like bullying and sexual abuse that should be seriously considered (Livingston, 2003; Layard & Dunn, 2009). These risks need to be taken into account within the critical digital competences and as something to prevent by all the members of the educational community. The family involvement will not be enough and the entire community in its own diversity is necessary in the prevention of these types of misconducts. At the International Youth Advisory Congress (2008), participants asked teachers, family members and other adults to get involve and to inform everybody about the risks involved. Oliver, Flecha and Soler (2009) demonstrated how not only a major coordination among homes, communities and schools on the prevention of gender violence is needed but also the involvement of the other women who without an academic degree have much to contribute to this issue. This coordination is developed through the creation of mixed committees composed by teachers, family members and students. These committees are in charge of defining preventive measures according to what has been decided by the entire learning community.

A second benefit identified in the revision of the scientific literature on ICT and community involvement is their positive association with the students' academic achievement. The Becta report (2006) conceptualized e-maturity where schools with greater levels of ICT manage to achieve a faster increase in academic results than those with a low level. E-maturity was defined as the ability to make strategic and effective use of technology in order to improve educational results. The academic and non-academic benefits obtained from the inclusion of ICT have been reported in the case of at risk groups, for example, cultural minorities and people with disabilities benefit from the use of ICT for learning (Edmunds, 2008; Balanskat et al. 2006; Meiring & Norman, 2005).

A third benefit is the transformations that take place beyond the school walls. Different types of technological developments can support in more or less measure parental involvement with schools and their children's learning (Lewin & Luckin, 2010; Angus, Snyder, & Sutherland-Smith, 2004; Stevenson, 2008).

Schools cannot afford to be far removed from this reality if they do not want to be irrelevant. The schools' role in fighting the digital divide

becomes especially important in those cases where access to ICT is not possible at home but depends on the opportunities provided by the school. Schools are not only places in which children are educated for future employment, but they are also bridges providing access to ICT for the families in the community. The more families use ICT, the more they are able to respond to the digital collaborative learning activities which their children are involved in (Anastasiades, Vitalaki & Gertzakis, 2008). For that reason the involvement of families and communities becomes important, in the overcoming of the generational divide. Thus, the dialogue held on the use of the media and the related material is extended to the daily interaction of all of the members.

The three benefits identified in the literature—a more critical approach to media literacy, positive influence in academic performance and benefits for the community—are all closely connected to the creation of dialogic spaces to use ICT. In the next section, the seven principles of the Dialogic Learning are presented, serving as a frame for the dialogic use of ICT.

The dialogic use of ICT

Puigvert and Flecha (2004) defined the dialogic use of ICT drawing from the seven principles of the dialogic learning (Aubert et al., 2009). These principles were created taking the contributions of Freire, Habermas, Vygotsky, Chomsky, Scribner, and Mead and many others into account.

Egalitarian dialogue is the first one. It means that agreements are reached through the force of arguments and not through existing power relations (Habermas, 1981) (e.g. a teacher versus an illiterate mother). The use of ICT can lead to a more democratic and horizontal participation which is open to all (Pulido, 2007). The dialogic use of ICT involves the promotion of these types of spaces, for instance, by inviting community members to participate in discussions, consultations or blogs related to the school or the village. Egalitarian dialogue means to promote all types of dialogic interactions, with everyone within the community, and not only with teachers, which has an impact on children's learning. In this context, ICT can promote a collaborative learning process in which the diversity of interaction stimulates the

construction of knowledge.

The second principle refers to the equality of differences that means that everyone, besides his or her own difference, have equal access to social opportunities. In terms of ICT, this means that different strategies can be developed in respect to both diversity and equality. ICT allows traditional models that tend to homogenise reality or participation to make way for more plural and democratic ones. For instance, there is not only one way to learn ICT, different people learn using very diverse strategies. This leads us to the third principle, which is cultural intelligence. This is understood here to be the intelligence provided by each person through their own living experience. It includes academic and practical intelligence as well as communication skills (language and action). The more diversity in terms of types of intelligence which is contributed to the community, the richer education on the critical use of ICT becomes. For example, if a discussion is being held in relation to the debate on freedom of expression and the regulation of online racist material, the debate will be richer if other people from the community also take part in it. If an immigrant father who volunteers in an anti-racist association, a student cousin writing her master thesis on racism participate in the debate, as well as a grandmother who has experienced the Nazi Germany era, then different types of intelligence provide more information, criteria, and arguments which enrich the critical reflection process of all. Thus students not only gain academic knowledge from the cousin, but also from the grandmother's and the father life experiences. In that case, a greater instrumental dimension in learning, which is the third principle of dialogic learning is achieved.

Through dialogue, the equality of difference, and value being placed on the intelligence and knowledge of each person, relationships involving greater solidarity are established between the people participating in that community. This contributes to one of the other principles, which is that of solidarity (Freire, 1997). The democratising force of ICT has led to many examples of how people can organise themselves into movements involving solidarity, and how they used it as a tool to coordinate each other and carry out joint actions. Moving into the field of the local educational community, the promotion of solidarity two other principles which are the creation of meaning, based on the

need to provide a meaning to all the actions we conduct (Weber, 1968) and transformation instead of adaptation (Freire, 1997).

The last but not least principle is transformation that occurs as soon as traditional interaction based on power begins to change progressively towards more egalitarian interaction. For example, the fact that assemblies are set up (in which teachers, families and also students participate) leads to end with the decision making monopoly that teachers had. All the transformations which are generated through the interaction established in the school and the use of ICT, have a direct impact on interaction outside school. More opportunities for the future are created, since the community holds more debates on the current needs and challenges, while at the same time deciding how to respond to them together. In this debate the use of ITC is seen as a crosscutting tool, although not as an end in itself. The aim is to overcome the inequalities generated by the digital divide, to accelerate children's academic progress, and to improve the community overall opportunities. The dialogic use of ICT helps to empower the whole community from a critical perspective. As a consequence of this learning children find that adults acquire a greater critical capacity for the use of ICT and therefore enrich the interaction they share, while at the same time promoting their autonomy in relation to ICT use. In turn this interaction between teachers, family members, and children, increases the well-being of the whole community, and the traditional problems of conflict or distance between the school and the family are overcome. The children also feel that they are in a more positive environment, and this promotes greater self-esteem for all the people involved.

Methodology

The Ariño case study has been conducted within the European Sixth Framework Programe project INCLUD-ED Strategies for Inclusion and Social Cohesion in Europe from Education" (2006-2011). The main aim of the INCLUD-ED project is to analyze educational strategies that contribute to overcoming inequalities and promoting social cohesion, and educational strategies that generate social exclusion. With 15 partners from 14 countries in Europe, the INCLUD-ED project contains

six projects which focus on researching the question of social exclusion and education from different perspectives, including the role of social structures, policies, social agents and transformative educational projects.

The INCLUD-ED research and the case- study presented here are framed under the contributions of the Critical Communicative Methodology (CCM) (Gómez, Latorre, Sánchez & Flecha, 2006). CCM starts from the premise that the creation of new knowledge arose from the egalitarian dialogue among researchers and the researched. Researchers are responsible to bring in the scientific community advancements, not to hide it, but to share it and to create more and better intersubjective knowledge. The researched perspective is present throughout the entire research process. The dialogic creation of knowledge guarantees the excellence and quality of the findings as well as their relevance for the study end-users. Reality is not only described or explained, but comprehended in order to inform its own transformation.

The Ariño case was selected because they were implementing some of the successful actions already identified by the INCLUD-ED consortium (2009). If education is aimed at facilitating the acquisition of those skills required by the Information Society, it is necessary to ensure that everyone participates through the dialogic use of ICT. The selected case is an example of how this process can be achieved. Under the umbrella of the INCLUD-ED research project, this case has served to the purpose of filling the existing gap within the scientific literature a dialogic use of ICT through community participation. The uniqueness of this school makes it to be a better scenario to explore in which ways the community involvement in the use of ICT contribute not only to improve students' academic performance but also to deeply transform rural village isolation.

Since the transformation of the school into a Learning Community, researchers have been following the development of this school, actively participating in the different processes involved. Within this framework, the present case study draws from data collected through three different strategies. First of all, information about the school and the village were collected throughout the life of the project, as an informal monitoring of the INCLUD-ED successful actions implementation. Second, open-

ended in-depth interviews with key players were conducted: the school head-teacher, family members volunteering at the school, students and alumni. A focus group with eight mothers was also organized. Third, researchers have visited the school several times, conducting informal interviews with teachers, students, family members, and neighbours. During these visits, communicative observations were also conducted within and outside the classroom providing rich data on what goes on inside. The collected data was analyzed through the lens of the dialogic learning theoretical framework, as it can be seen in the following sections.

The case of the Ariño Learning Community

Ariño is a small village located in a mining area in Teruel, in the Autonomous Community of Aragón (Spain). The scarce population living there traditionally experienced isolation problems both physically (transport and road communication systems) as well as virtually, due to limited access to information and communication technology. Thus, the crisis of the industry and the coal extraction left this area with the need to reorient the main economic activities to more appropriate for the existing times. In 2003, the transformation promoted by the school began when the educational community entered a reflective process on the social and economic opportunities in their area. With the objective that no child be excluded from the information society, the decision to transform the school into a learning community was oriented to create new opportunities for everybody.

Learning Communities project consists in implementing those strategies that are based on research evidences about what works in overcoming situations of social and educational exclusion (Díez-Palomar & Flecha, 2010). The project is based on dialogic learning theoretical framework including all the community. The more than a hundred schools in Spain and Latin America that participate in the project have showed to achieve both academic successes for all and better living together, transforming the school and its surrounding context. Through the implementation of the successful actions, the Ariño school became a state and international model in the ICT use.

The transformation process entails the whole community dreaming of the school they wish to have. Once the dreams are identified and prioritized, the management of the school is organised so that these dreams can be achieved. Mixed committees containing teachers, family members and other community representatives are created in order to coordinate their actions and to undertake the priority actions that have been set according to the community dream. In the Ariño school, the main dream that came up was to end with the double isolation and to enter the technological era as a response to the industrial crisis. The entire community got involved not only in the process of obtaining the material resources but also in their implementation. In what follows three strategies of how to promote a dialogic use of ICT are analyzed: community involvement within self-sufficient schools, community involvement beyond the school setting, and community digital literacy.

Community involvement within self-sufficient classrooms

Since 2003, when its transformation into a Learning Community began, the school managed to obtain resources to develop what are known as self-sufficient classrooms. These are classrooms in which both students and teachers have access to all the information and resources they need online, with no need for any other didactic material. This is possible because in each classroom there is a computer, a video camera and a video projector which serves to screen the information onto a whiteboard. Also, each student has a Tablet PC which is connected to the central computer and to Internet. The Tablet PC allows keyboards and mice to be used instead of pencils, and it works for students as real notebooks and textbooks with increased possibilities as compared to the traditional ones. It was the community who mobilized in order to acquire all these new equipments for the school.

The profound transformation of the traditional classroom generates the possibility for more and better potential learning opportunities. In the present study, it is observed that what makes possible to take advantage of these opportunities is the ways in which these technological tools have been used. The egalitarian dialogue created in the interactions observed in the self - sufficient classrooms have changed the teachers'

roles, students and members of the community as well as the teaching and learning strategies used. The students take an active role in the classroom, volunteers promote this process and the teachers overview the accomplishment of the learning goals. The head-teacher explained in the following way these transformations:

> The same network, the same way of working, is something, it is the way we all learn. Before there was no access to the information, to so much information so rapidly within the classroom, or the workplace, and when not working on the internet the teacher was the one who had the knowledge and who transferred this knowledge to the students. Now it is the students who are capable of discovering and creating all of that knowledge in a relationship within a network which is produced with his or her classmates and with his or her friends in general.

The dialogic use of ICT involve egalitarian interactions take place at these self- sufficient classrooms. Throughout our fieldwork, three different instances were collected: interactive groups, the school blogs and the school TV channel. In all these three spaces, interactions between teachers, volunteers and students take place moving beyond the traditional scheme of teacher-student or peer to peer interaction. Volunteers can be family members or neighbours who are concerned about the children's learning with no need to have any kind of academic credential. The benefits of having more adults in the classroom have been already pointed out in the literature, for instance, in the case of interactive groups (IG). IG involves the organisation of classrooms in small heterogeneous groups of students. Each small group carries out different short activities, each coordinated by one adult who is in charge of promoting interactions among the students.

Parents, mothers and other family and community members facilitate the students' small groups, while children use their Tablet PC's in order to carry out the activities. Maria and Lucia, two mothers who are not very familiar with ICT, volunteer once per week in the natural science class at fourth grade. In one of the observations conducted, the students had several questions regarding the Iberian fauna, so they had to look for the responses in Internet. The mothers neither knew about Iberian

fauna nor more than the students to navigate the net. However, they were promoting students solidarity in finding out the information and sharing the responses and the strategies followed. This type of classroom organisation and the interactions that take place promotes learning being accelerated and also leads to opportunities for children to develop different kinds of interactions with the adults other than the teacher and other classmates. The inclusion of all members of the community, like Maria and Lucia, makes to take into account their cultural intelligence and enriching the learning experience. Besides learning, motivation also increases when working in these groups, as students enjoy more working in interactive groups, as one of the mothers from the school explains in the following quote:

> When you go into the classroom and do the [interactive] groups and they like that. (…) Because for them it is also something different, and on top of that they also learn more things.

Maria and Lucia contributions are equally valued to the one provided by Lourdes, an electronic engineering who also volunteers in the maintenance of ICT. The three of them are equally welcome, thus, the diverse experiences they offer contribute to enrich the learning opportunities of all.

The learning that occurs there is not only connected to the value system but also to the instrumental dimension. Something that was recognized is that the school students end up acquiring better verbal expression competences. Right from the pre-primary stage the boys and girls work on these competences through the participation in these activities in collaboration with the volunteers. One of the mothers described the difference between the activities carried out prior to the inclusion of ICT into the classroom, and how learning is currently acquired:

> Of course for example, if the pre-primary methodology adhered to what the teacher sets out, the child would still be at number 7, 8. Three weeks at number seven. The children become tired of only painting number seven. They have more ability than that. Therefore in this way more of their potential comes out…

Different study participants recognized that the dialogic use of ICT contributed to an acceleration of learning in the school, and the children get better prepared for the transition from primary to secondary school. An alumnus explained her experience going through this process herself:

> I felt I had some advantage in comparison to my classmates, as we know to do more things from animated power point presentations to producing and editing a video. We are very used and familiar to use the computer for everything.

The school head-teacher also acknowledged this fact:

> We base our statements on the grades, on the results they obtain later at high school, right? For example, the first school year which started with the tablet PCs in 4th year of primary in 2003 have now just finished their first baccalaureate year. The school coordinators from the high school always said to us that from that school year onwards the skills that our students had in comparison to the other students in the school were very notable. This is because they are children who know how to search for information, they know how to deal with it, they knew how to do those PowerPoint's, they know how to present them, things that, well, others did not have these skills. In some way this has ensured that they are in a situation which has allowed them to achieve greater success at school. In other words, it translated into their grades.

When teachers, parents, neighbors and students realize that learning is improving a meaning making moment emerges. The fact that the instrumental dimension of learning is reinforced motivates volunteers, teachers and also students to be more convinced about what they are doing, in the way they are doing it.

Two other examples of activities which are carried out in the self-sufficient classrooms with volunteers are the Ariniños blog, and their school television channel. Through these activities, it is the students themselves who, along with adults from the community, provide the contents for them. Teachers, volunteers and students are are engaged in producing joined forecasts, interviews, reports, and other activities

for the television and radio programmes. The contents are linked to the subjects they are studying at the school. Before producing post or video a dialogue is held on what will be done, on the messages which will be created and how they will be presented. Greater digital competence, more creative and critical use of ICT, and instrumental learning are all achieved. Everybody's contribution is welcome from the grandmother who has never lived away from the mines to the young professional who is new in the village. This involvement makes the blog and the TV channel to be followed not only by the students and the families but for everybody from their homes. According to the participants interviewed, most part of them recognized a meaning making process through this collaboration. On the one hand, the students see how teachers, relatives and other neighbors are committed to their learning and collaborate together in doing so. Family and community members feel that their participation is highly appreciated. The school becomes the village nerve center at the educational and the cultural creation levels.

Community involvement beyond the school setting

When students see how community members and families volunteer at the school, they are not learning about the theory of solidarity, but experiencing it in the practice. Thus, solidarian community involvement is not confined within the school space and hours. It is precisely the flexibility and diversification of participation opportunities what has generated enthusiasm and more people involved. Different types of volunteers in terms of tasks, times, and roles makes possible for a diverse range of people to participate, and for the students to benefit from this amount and diversified interactions, putting into practice the equality of differences principle. The respect for different circumstances makes possible for any person to be able to contribute with her or his time to the shared school project.

Online volunteering is one of the ways to get involved at the school. There are family members without the time to be at the school, but they are able to collaborate from their homes. Online volunteers can be in charge of other tasks related to the school blog, organizing the end of the year trip, looking for new resources or strategies to promote the

school project. A teacher explains an example of how this works in practice:

> Well, we have a goblin called "Adivipupi" who guesses and knows everything and the pre-primary children are very fond of him because he is in contact with them via a weekly email. This goblin suggests things to them and they, well, look for the information that is suggested to them, they write to him and reply to him, and he, well, especially if it is correct, well he is very happy (…) In fact it is a mother who dedicates 10 minutes a week on her computer…to the school from her office and she is constantly in contact with the tutor, the class teacher…this volunteer does not necessarily have to be physically present in the school.

This is a form of participation, in which both the mother and the teacher liaise in order to carry out a learning activity in the classroom, without it being necessary for the mother to be there.

At the beginning, "class representative" were appointed. They were volunteer family members in charge of supporting the dialogic use of ICT by talking with families, explaining the learning, and also recruiting other people to get involved in the project. In a similar way, later on the technological mothers group was created. These were a group of stay home mothers who without any specific degree in ICT provided support to the teachers. For instance, a teacher told us that if they were learning about Pre-history and need to find electronic resources showing the ages evolution, they would ask this group to prepare some supporting materials (e.g. power point presentations, interesting links, videos) on the topic. The technological mothers felt that they were not only getting acquainted with ICT but they were exposed to continuous learning and supporting their children academic progress:

> There was a group of mothers, who we called the "technological mothers." They offered to resolve any resource related problems that any of the new teachers had. In other words, if you needed any resources for your language class, maths class, social studies class, or knowledge of science. You would ask them about it and they would find it for you and if they didn't find it then they would make it for

PowerPoint presentation containing what the teacher had asked for or whatever.

Community digital literacy

All the different aspects of the dialogic use of ICT identified until now connect with the last principle that is transformation. The transformations found in the learning, knowledge, values, interactions and so on are also transposed to the whole village. Digital literacy is not confined within the teacher and the students but it is offered to the whole community. In less than ten years time, all the neighbours' homes have moved from being isolated to be connected to the net. This figure would not have been that different to other similar villages, but what is found to be distinctive is the way this ICT is used. An important part of it is due to the different strategies that have been identified as part of the community digital literacy both at the school and outside of it.

At the school, the family education program is aimed at facilitating the dialogic use of ICT in the school and the community. Families participate in ICT courses for themselves. But this learning allows them to understand the digital language of their children, be part of it and appreciate the transformation the school.

The head-teacher mentioned one of the fathers from the school, who began by taking part in a digital literacy course in the school, and who, as a result of this, is now in charge of the children's digital video activities which they upload onto a blog. This case is not an isolated one. There are several family members who, having participated in these courses, have then continued their own education through direct participation in their children's learning or in the school management. These are important transformations, if compared to their relationship with the school ten years ago.

The dialogic use of ICT promoted in Ariño has led to the acquisition of critical digital competency that is transposed in every single domain. What is learned at the school by students and family members is also found at the homes' dining rooms. Thus not only the instrumental learning but also the dialogic use of ICT. One of the interviewed mothers explained in which ways her son was bringing home what he learned at the school. The fact that she was attending the community

digital literacy program facilitated her comprehension and interaction with him. She recognized in which ways the families are more able to provide a response to the challenges which arise, as well as help their children in this process. She said:

> For them is much easier, they do not have any problem in using it, navigate online, they use as a tool part of their learning, much better than us. They learn really fast… I do not think they have ever asked me how to do something. It is in the other way round. I asked them about different things or how to look for something, and he finds it very quick. The other day my six year old nephew taught me how to screen an online video. When I was alone, it was stopping all the time, until he came and told me where to press in order to see the entire video. I had no idea about how to do it.

The digital literacy has gone beyond the schools and home walls by extending it throughout the village. Technologies and the dialogical processes have opened up more spaces for the inclusion of the whole community, not just to the children. A clear example that deeply transformed the entire community was the extension of an open wireless coverage in the village, making it possible for students to work from home. This new resources increased students' opportunities to communicate and interact with their peers and other adults. Today, the families dream of their children being able to work and learn in the same way in secondary school. The transformation has not been confined to the village boundaries. The Government of Aragón decided to extend the implementation of the Ariño experience to all the primary schools in the Autonomous Community in Spain.

Thus, the case has also gone international. In 2008, four children from the Ariño school attended the Government Leaders Forum—Europe (GLF) in Berlin, a dynamic discussion platform for government, business and education leaders from across Europe. During this Forum the leaders discussed the role that ICT plays in achieving success in education and the economy. The case of the Ariño was presented at this forum as the school of the future , and thus became a role model at a global level. That same day, the testimony of the children from the Ariño school were included into Bill Gates' speech. Vicente, one of the

three children of Ariño participating in the Bill Gates Forum, showed him how to use the Tablet PC. The children of Ariño showed the world how they mastered and Bill Gates promised to send an email to the school. And he did.

Final remarks

The Ariño analysis serves to the purpose of adding new knowledge to the existing one on community involvement in ICT. It shows in which ways the implementation of the dialogic use of ICT involving the seven principles--egalitarian dialogue, equality of differences, solidarity, instrumental learning, cultural intelligence, the creation of meaning and transformation—works in a real case scenario. Particularly, the Ariño experience does not only teach us how the dialogic use of ICT can be promoted at a school, a rural village and in the virtual space but also that their implementation has benefits for the students and their families and community. The transformations observed move beyond the classroom reaching homes, streets, regions and even international audiences. The dialogic use of ICT has contributed to make the dream of making the Information Society available for everyone a reality. Through solidarity and dialogue, families' lives in the Ariño have been deeply transformed. They have not only seen how their contributions were welcome at the school but also many of them have become active learners there. Their incorporation into lifelong education processes have led to improve their critical use of technology and capacity to support their children learning. In short, the Ariño school has gone from being a local project, specifically in the province of Teruel, to a more global proposal to overcome inequalities in the field of ICT and to promote successful actions in the improvement in academic performance. As the head-teacher said: "We cannot go backwards; it is unthinkable to retreat in this process which has now been undertaken." They know that there is only the way forward, and that the school and ICT cannot do it be themselves, the entire village is needed.

Notes

[1] For more information see:
http://www.microsoft.com/spain/responsabilidad_corporativa/vision/4/educacion.mspx.
[2] See: http://www.microsoft.com/presspass/exec/billg/speeches/2008/01-23GLFEurope.mspx

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