

## Educational Activities via INTERNET for young Children: How to promote meaningful learning

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### **Abstract**

Today we can register a growing interest in the Internet and especially in the World Wide Web. The Internet network links not only start to blur our conception of distance, they also create a new learning environment by bringing together a multi-national community of learners and by providing for new social exchanges, so precious for children and teachers living in islands.

With the Internet infrastructure computer supported learning sites can be set up connecting different learning communities. This is important. However, just connecting different knowledge generating communities doesn't guarantee learning or better a kind of knowledge negotiation resulting in understanding and new insights. The goal of this paper is to:

- Categorise the current educational activities supported by Internet and analyse them. The term 'Internet' only refers to the underlying technology. Actually, a large variety of tools are available for teaching or learning via Internet. Any reflection on the practices and on the effectiveness of learning experiences needs to discriminate which software tools are being used, and which pedagogical functions are fulfilled by these tools.
- Examine on what conditions educational technology can be successfully applied to restructure educational practice and promote meaningful and authentic learning experiences in a way that facilitates task-oriented motivation, deepening conceptual understanding, cognitive growth and development of students' self-regulative skills.

The use of the Internet has become a very intensive area for research, but mainly on its technological aspects. More research and evaluation on learning and educational effects is needed as the educational use of the Internet grows. The question becomes crucial when we have to do with young children. We will finish our paper presentation by pointing out some research directions, and underlying issues that should be addressed.

## **1. Introduction**

Today worldwide, a continuing growing interest in the potential of INTERNET to support educational activities appears. More and more schools are connected to Internet, new Web sites referred to educational matters appear from one day to the other and new projects are proposed intending to link different groups of learners and promote their cooperation.

But the central question, which remains, is to determine how to use Internet in order to promote and support really meaningful and significant learning experiences.

In my presentation, after listing some main points about the promises of Internet, I will try to categorise the current educational activities, and analyse them in order to discuss the limitations of some actual practices. I will finish by pointing out some directions of research, presently important to be carried out.

## **2. The promises of activities supported by Internet and the educational networks between schools**

What are the promises of Internet? It is well known that Internet allows having access to a large range of information. Electronic mail and telecommunications through the Internet facilitate direct communication and give the opportunity for social interactions previously limited by the physical location of participating learners. Children can communicate with other children situated in different cities and countries, and in this way they can share different learning experiences.

It is obvious that all the above are important both for children and teachers living in relatively isolated geographic areas, like islands.

Actually, there are two kinds of networks supporting educational projects. There are some well known world wide, international networks which support activities between an important number of schools situated in different countries all over the world, and other networks which are set up mainly to connect schools on a national level.

We can present three examples of the international educational networks:

- a) "KIDLINK" (<http://www.kidlink.org>) is a global networking organisation focused on youth from 10 to 15 years of age. KidLink estimates that over 100.000 children from 19 countries have participated in various activities. This non profit organisation operates in 13 different languages, offers 50 public mailing lists for conferencing, a private network for interactive dialog ("chat") and an on-line art exhibition site.
- b) "Global SchoolNet Foundation" (<http://www.gsn.org>) is a non profit foundation which is now a major force in educational networking, with corporate backing that helps to underwrite a range of no-cost services to educators and students. There are services especially useful for teachers interested in learning about promising multiclass projects. Through these services, teachers can announce projects or receive project announcements from other teachers, find information about a range of advanced technology resources for classroom use, a registry of school WebPages and find useful advice in order to design effective WebPages for their schools.
- c) "Intercultural E-mail Classroom Connections Lists" (IECC) [<http://www.iecc.org>] has

more than 7.300 teachers in approximately 70 countries participating in at least one of the IECC lists: It has now been divided in different services (Partner Class Announcement Service, Multi-Class Announcement Service, Multi-Class Survey Announcement Service, and a Discussion Service about Intercultural Exchanges).

In some countries, there are also networks covering a national area or some regional areas. For instance in Greece, there is the ODYSSEAS network [<http://odysseia.cti.gr/odysseas>] linking together 60 schools from three different and remote regions. Actually, it is a network under development which is intended to support different services such as, communication and collaboration between schools, teacher education and teacher support.

So, with the Internet infrastructure and some initiatives, computer supported learning sites can be set up connecting different learning communities. This is important. However, just connecting different knowledge generating communities doesn't guarantee learning.

So, lets examine closely what the actual situation is, what the current educational practices are.

### **3. Categorisation of educational activities via Internet**

Surfing the different educational sites on Internet, we can be overpowered by information, projects and announcements of projects, educational material for teachers, etc. Among all this information, we have tried to identify the different activities performed by children themselves (see Figure 1).

The most common activity of children and students is to surf the different sites to *find information* about specific subjects (for instance about animals, means of transports etc..) and this in various kinds of material, such as photos, texts, sounds, etc. In this case, the Internet is used as a centre of resources.

A different and interesting activity for children is to *publish* their work. Usually they present their schools, some school events, the output of a completed project, or the school newspaper. An important number of schools have a web-site. Actually, in Greece, 80 schools have created their own web site. However, in most cases, they do not present work done by the children themselves.

But the Internet can be used for more than just finding and publishing information. There are an important number of activities related to *communication* and data exchange: communication between classes of schools about a specific topic, where the primary means of communication is electronic mail (e-mail). Participants primarily exchange or share text messages deferred in time and do not interact with common data.

Using e-mail, there are also competitions between schools supported by some educational networks such as Kidlink. For instance, the Fahrenheit project (launched in Italy) support a competition between schools for language learning, where every participating school could propose a topic for a poem, with the restriction not to use a letter (e.g. the letter 'j') and the best poem is awarded.

Other activities promote *cooperation* between children. There are activities, which demand the production of joint work, for instance to present the environmental problems in the

respective regions of the cooperative schools or classes, and by this to create a common database.

Among the activities performed by children there are also a few *collaborative* activities. This kind of activities needs to be supported by concurrent person to person synchronous networked communication and in time common work. It can be possible by real time interactions via special designed collaborative software and discussions via on-line chats. Through these activities students can learn about specific topics on which they work and additionally they can learn how to collaborate.

Finally, there are some projects between schools, which combine some of the above activities such as communication, cooperation and publishing of the work.

It is important to relate the degree of practice and the learning value for all these activities. It appears that the most common activities are research for information and communication and the least common activities are the ones demanding collaboration. Inversely, as far as learning value is concerned, the activity which demands the least intellectual effort is the research for information, and the ones which could produce the most important learning effects are collaborative activities. We can see (Figure 1) that the most common in use is the least demanding in a learning value level.

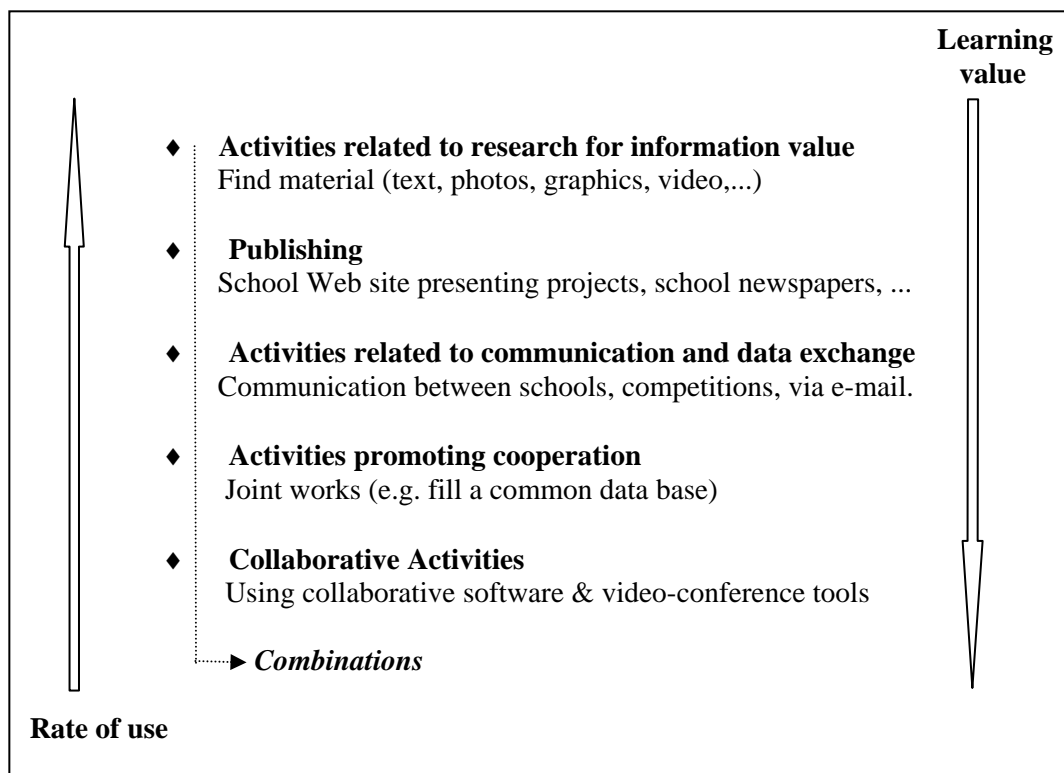


Figure 1. Categorisation of children's activities on Internet

#### 4. How to promote meaningful activities

Trying to examine on what conditions the use of the Internet can promote meaningful learning experiences. I would like to draw attention to some points related to previous activities. These points could serve as kind of significant principles to be taken into account when we intend to

conceive or launch educational activities via Internet.

1. Don't confuse information with knowledge: The first point concerns information finding. In a number of cases, educationalists and researchers identify knowledge with information and intelligence with management of information. (E. Ackermann, 1995). If the Internet enables us to be connected with a multitude of information canals and allows us to surf from one canal to another, we forget sometimes that meaning emerges from the creating act itself. Meaning requires a personal elaboration, an active construction.

The information which a child or an adult can find is essentially useful only when he/she can incorporate it in a personal project, proposed by their teachers or by themselves: a project which this person finds interesting and permits him/her to share it with other peoples.

In addition, it is necessary to give the child some compositional control over information, which means to give the opportunity to the children to create and compose something (e.g. a multimedia presentation) in their topic of interest and present it to other teams of students in order to tell a story, or explain a topic. Children need to have at their disposal the appropriate tools: tools permitting them to create, analyse and synthesise information, including text, graphics, images, full motion video, and sounds.

2. Don't confuse collaboration with cooperation and communication: There are a number of projects presented on Web, speaking about "collaboration between schools using Internet". Additionally, much of the popular computing literature speaks glowingly of the power of cooperative learning with computers to transform education.

But, if we examine closely the activities performed by children under these projects, in most of the cases, we can easily understand that we do not really have collaboration, but merely, cooperation, or communication.

We need to distinguish between cooperation, which means "work on complementary things" such as writing different chapters of a book, and real collaboration, where a person becomes able to produce a result which could not be done by himself alone. Collaboration is a kind of knowledge negotiation resulting in understanding and new insight, which involves different mental operations: to express himself, to communicate, to become aware of our thoughts and reasoning, to understand the point of view of the other person, and finally to create knowledge collectively.

An additional important point concerning the collaborative activities is the possibility to enhance metacognition. It is already shown (McCreary 1989) that the way computer conferencing functions urges the user to apply not only the cognitive skills of information processing for instance in structuring and composing messages, but also the metacognitive skills in managing their learning process.

Finally, the potential of collaborative activities can be shown as specially powerful in specific cases, such as intercultural learning (J. Cummins & D. Sayers, 1997).

Consequently, in the direction of exploiting the learning value of collaborative settings, we need firstly to conceive scenarios and activities, which ask for real collaboration. Secondly, we need to think and work on how to manage the collaborative work. If we have worked in real schools with diverse populations, we have seen that it is not very easy.

Moreover, it is important to think about how to help the children to learn to work in a collaborative way. This becomes crucial especially when people talk about Internet and collaboration at the same time that in the every day activities of school, the teachers do not promote this kind of activity for their students. It is obvious that it is necessary for students to learn to work in a collaborative way, firstly in the level of classroom before working on Internet.

3. Conceive authentic activities: A third main point concerns the activities proposed by teachers or researchers on education.

If we examine the subject of activities proposed, we can see that most of them are not really interesting. Activities such as the description of the location of each participant school or writing about kinds of foods and recipes from each region could be interesting for some students but meaningful learning is not really taking place.

4. Do not just try to familiarise students with the Internet but organise instructional settings: Presently, many schools use the Internet, but in most cases they are just trying things, without careful pedagogical reflection.

We have situations where the main underlying goal is simply to familiarise the students with technology, a situation that we have already seen in the early use of the computer technology.

The result of such an approach is always disappointment. We already have phenomena where teachers start to work with the Internet and give up, because they feel they are wasting time.

If educators or researchers propose to schools some projects they must organise them:

- Prepare them seriously: Have explicit objectives, plan them, organise a wishful time line, divide the projects into activities that they can be cluster into weeks.
- Monitor, manage interactions avoiding an excessive number of participants classes (e.g. not more to 20 or to 5 in some cases).
- Publish the final form of the project.
- Evaluate with a preparation of evaluation methods and procedures, during the whole process of the project evolution.

5. Conceive projects and applications supporting curricular development and innovation: Another general problem is that most of the projects are used separately way from the every day school curriculum.

Moreover, very few initiatives referring to Internet applications support curricular development and innovation, implementation of new curricula and approaches (B. Z. Barta & M. Telem 1997).

Instead of finding ways to simply fit in current practice, applications and projects relating to new technology of communication may be used to enhance reflexivity in teachers and to generate personal meaning, understanding and social growth in pupils.

## **5. The need of further research**

In the previous paragraphs we have tried to present the actual situation. Nothing could be efficient or meaningful without a serious educational reflection.

The use of the Internet has become a very intensive area for research, but mainly on its technological aspects. Further research and evaluation on learning and educational effects is needed as the educational use of the Internet grows.

We can not be content with the "techno-romantic view" of the New Technologies of Information and Communication. People often hope that the new technologies could automatically change the current situation of education without a reflection on their educational practices. For this new educational environment, which is Internet, new research is needed at the psychological and educational level as well as at the technological level.

### *Directions of Psychological and Educational research:*

Firstly, we have to find answers to some questions. What does it really mean for young and very young children to communicate or to collaborate by distance via Internet? What are the effects at an effective, social and cognitive level? What are the difficulties? We need to know in order to support them in an appropriate way.

We need to set up research on innovation, with authentic activities related to different subject matters and also to conceive new activities extending the actual variety.

Finally, it is crucial to analyse and evaluate the current educational practices via Internet with qualitative and ethnographic methods, and not with quantitative and descriptive methodologies as it actually happens in most cases.

### *Directions of Technological-educational research:*

We need to produce new software and tools running on Internet:

- educational software which are eventually subject matter specific, able to support collaborative activities, synchronous or asynchronous
- tools with user friendly interfaces specially designed for young children supporting activities of communication (e-mail and discussion) and also publishing on WEB.

## **6. Conclusions**

Under appropriate conditions the computer can become a medium for expression, experimentation and collaboration in the hands of the pupils. The activity encouraged by such use corroborates contemporary educational goals aiming towards active and social learning in the framework of productive and integrated activity, allowing pupils to collaborate, make choices and construct personal meanings. However, to develop educational practice towards these goals within the educational system, requires deep reform at the classroom and the school level.

We have touched, in a synoptic way, upon some points concerning the appropriate and meaningful use of new technologies of communication and their integration on the every day educational practices.

As researchers in the Education, we have as main goal to improve education and restructure educational practice. To fulfil this goal, it is important to get up more research, both educational and technological (educational software development).

The Department of Education of the Aegean University has started to play a role in this direction. If the promotion of educational activities via Internet is obvious for the contribution to the development of the islands in the area of education, the focus on the promotion of meaningful learning activities and the appropriate research which is needed becomes crucial for the sustainable development of these islands and their people.

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