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External Expert's Opinion on the Activities of the Colabs Project in Portugal

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1. Colabs Portal

1.1. Context

CoLabs Project was born in the ambit of a six European partners' submission to the Minerva action – Socrates Programme, in which Cnotinfor is included. The research and development concerns of this group are: to create learning and distance collaborative work support infrastructures, using *Internet* and *Imagine* platforms; to conceive and evaluate tools that can be adjusted to several domains; to analyse with whom, how and what kind of knowledge can children learn at a distance and what is the necessary support during that process.

The first step was the creation of the distance learning support infra-structure, CoLabs portal, and the creation of tools that allowed and provoked the exploration and learning by the children, the *Imagine* microworlds.

The second moment has consisted in the Portal's evaluation, accomplished through the observation of its use by children in the constructions of small projects and stories.

With this process, it is intended: to develop a stable version of the portal, in Portuguese Language; to validate the portal as a useful tool to implement collaborative learning/work strategies; to create an infra-structure that allows the construction and share of knowledge among children, from the same nationality or from different nationalities. The main goal of the project has consisted in the evaluation of the pedagogical potential of the Portal in promoting a projected collaborative learning.

1.2. Procedures and Methodology

The project was developed in elementary schools using their technical facilities to access the portal: school EB 2/3 Martim de Freitas – with a class of 24 students from the 6th year and 2 teachers – and school EB 2/3 Inês de Castro – with a class of 20 students from the 6th year and 2 teachers – in Coimbra (KS 3 – 11 to 15 years old).

The sessions occurred between the 6th January and the 30th March 2004. The schedule and places used for them was the ones corresponding to the Project Area. The choice of this

intervention space was due to its characteristics as a space for conceiving, executing and evaluating projects developed from problems or research themes, according to the students' needs, and as a meeting point of the knowledge acquired in other subjects. There is the possibility of opening the scholar curriculum to less formal learning environments and to different activity areas.

Once the schools have already identified the themes to be studied during the Project Area, it was necessary to negotiate their collaboration in the CoLabs project. This process had all the common characteristics of a project, so that the defined aims of all the partners were achieved.

In this initial phase, it was set that children should use the *Imagine* tutorial of the CoLabs portal to acquire some experience to produce their own projects.

The developed activities were planned by the Hungarian partner, translated and reviewed by the Portuguese team. These activities were focused on the development of small games, projects and stories that allowed children to learn how to work with *Imagine* while building stimulating projects.

At the end and if the students were able to finish the tutorials, they would develop Imagine projects integrating their Project Area's theme.

During these activities, the existing tools in the portal (web chat and forums) were used by the children to collaborate in the *Imagine* learning and in the production of their essays in the Project Area.

The evaluation instruments used were: a Questionnaire, made by the Portuguese team, about the register process, pre and post tests (built by the Hungarian partner and translated, revised and validated by the Portuguese team) and the Observation Grid for collaborative behaviours (built by the Portuguese team).

1.3. Analysis of the Results

A global analysis of the preliminary results of the activities described above will be held now.

Concerning the collaborative process aspects, the direct observations have shown the potential of the authoring tool "Imagine" as a stimulus of the collaborative learning and an important motivation feature. An increase of the children's enthusiasm in the activities' concreteness was verified when they began "controlling" those activities. This fact reveals that the choice of *Imagine* environment as the portal's partner was the most accurate.

An examination (even superficial) of the web chat interactions register and the direct observations held have shown that, as soon as the collaborative supported function was understood, the students felt comfortable changing roles and tutoring their peers.

The classroom environment was full of excitement and motivation to explore and discover new things. The students began to have their peers as partners in this discovering process. Although, it is still needed to make a deeper analysis of the behaviours and interactions that occurred in order to validate the Portal as a collaborative learning support.

Regarding the tools' application aspects, the majority of the users have not shown any kind of difficulty in the use of the portal itself, feeling pretty comfortable in its exploration. The users were also very at ease using the web chat, as many of them were familiarized with the MSN Messenger application. The users understood rapidly the several available tools functioning, demonstrating fluency in their use. The quantity of web chat rooms created by the students is a clear example of this.

Some users have exploited easily the forum system. Although, the evaluation of a forum has the assumption of giving a distended period of time, in such a way that relationships between the intervenients are developed. The majority of the users did not quite understood the differences between the forum and the web chat, preferring the second one, as it could be used in real time.

The portal access speed has not allowed the use of the area "**My works**", that might have been fundamental to the files share, that could have permitted another kind of relationships.

In general, the available tools in the portal are easily employed by the users and they explored it very comfortably. Many of them have expressed their opinion saying that the portal and the microworlds have great quality.

The motivation for the use of new tools (especially *Imagine* and the web chat system) was very high. This was expressed by the number of times the students have asked the availability of *Imagine* and the teachers' opinion that this had been a very stimulating project for the students.

The major difficulties experienced were not directly connected to the use of the portal itself, but to the technical conditions required to do it, namely the Internet access available in schools.

1.4. Conclusions

The aims of the CoLabs project, as previously mentioned, were:

- To develop a Portuguese version of the CoLabs portal
- To validate the portal as a useful feature to fulfil collaborative learning
- To create an infrastructure which allows children from different nationalities to build and share knowledge

The first aim was completely accomplished, as there was a great effort in the translation of the portal to Portuguese as well as of most of the Imagine microworlds. Also the international evaluation instruments built by the Hungarian partner whom results should contribute to the portal validation were translated. There was a great effort from Cnotinfor and its team to achieve this goal, which was to create an interface that could be used as a tool for schools. This interface was tested and has allowed the development of activities in schools of children from 11 to 15 years-old (Key Stage 3).

Concerning the second aim, there was also a great dynamics of the Portuguese partner to clarify and materialize the concept of collaborative learning. A check list of the most significant behaviours that can occur in collaborative environments was built. The production of the observation instrument based on the McAteer's work was crucial, as it has allowed the criteria definition to evaluate collaborative learning of students when using the portal. It was possible to observe enlightening collaboration behaviours in the divers learning environments, mainly in the classroom and chats. Is it possible to state that there is collaborative learning in the development of suggested activities on the portal? If it exists, what kind or what collaboration modality can be observed? Although there are discrepancies in collaboration that have consequences in the observed behaviours, in the classrooms and chats, is it possible to establish that there are significant differences in collaboration in the distinct learning contexts studied? Is it possible that the methodology used in the observation of the divers learning environments, two observers in the classroom and one in the chats, has contributed to increase the differences in collaborative learning? On the other hand, the students' results in the international tests conceived by the Hungarian partner and translated to Portuguese are not known, so that the results comparison in a population and between different populations could be held. The acquaintance of these results is also an important feature to take into account in the portal corroboration. There is still some work to be completed for the portal validation as a useful feature for collaborative learning. The few existing results permit to state that the portal endorses the collaboration among children. It is important to understand if there are significant divergences in collaborative learning in the different contexts allowed by the portal and what are the collaborative modalities. It is necessary and very useful to expand the contexts, collaborative learning modalities to continue the portal corroboration pathway through more consistent data.

In what concerns the third goal, to create an infrastructure which allows children from different nationalities to build and share knowledge, it has not been fulfilled. Although, there were important paces assumed. It is not feasible to build this infrastructure without the recognition of the importance of the portal for collaborative learning by the partners of the project. As it is acknowledged, this recognition and validation process is still occurring, so it is difficult to achieve this third aim without completing the second one. It is necessary to find answers to some questions about the collaborative learning materialization possibilities and modalities to proceed with this infrastructure's construction, so it can be used in collaborative learning between children from different nationalities.

Concluding, the CoLabs portal has constituted a useful instrument for the teacher in the collaborative learning implementation in different contexts and as a learning and creativity exploration place. The pedagogical value of the portal is based on two fundamental potentialities: as an information source and as a work environment able to promote and assist the on-line collaboration (synchronous and asynchronous) and in scholar context (classroom) especially in Key Stage 3, in the Areas of Project and Information and Communication Technologies.

2. Creative Writing *software*

2.1. Context

The main goals of “Creative Writing” software are to develop the taste for writing and reading, as well as promoting the collaboration and creativity in the construction of stories. “Creative Writing” is part of an international project named *CoLabs* which aims to develop the collaboration between learners.

The research made under the project consisted in the experimentation of the *software* with groups of children in different educational environments and aimed, above all: to analyse the “Creative Writing’s” potential as a spur of the collaborative work in the class room; to evaluate if the software empowers the development of creativity; to evaluate its technical and educational abilities; to obtain feedback for the development of the software application.

2.2. Proceedings and Methodology

In order to value “Creative Writing” as a capable instrument in the development of creative and collaborative writings skills, several case studies were carried through in different educational contexts, in which there were significant differences concerning material conditions:

- Formal environments, school environments (in several Primary Schools, 3rd and 4th grade – KS 2 – 8-11 years old);
- Informal environments out-school (*Family Group* with children aged between 5 and 11 years old and the *Gifted Children Group* with children aged till 15 years old).

Several activities with “Creative Writing” were planed and structured, from which we made the observation of the children, based on a collaborative behaviour grill, adapted from McAteer’s.

After presenting the program, the activities began using several drawing and text balloons, insertion tools, as well as some “file” tools (open and save project), in order to create later on a story about a specific theme, involving the construction of the plot and the characters (and its drawing).

The last exercises consisted in continuing a story, requiring already some fluency in using the software and all its available tools: after reading the beginning of the story, and knowing all its elements, children were asked to complete it with text balloons, drawing and object tools. These were the necessary materials: computer with the “Creative Writing” software; activities models to perform with the software; printer (to print all the works and work models to be performed without the computer); paper, pencils/pens and colour pencils/colour markers (for activities without the computer), concerning the fact that most Primary schools had poor material conditions and had only one computer per classroom, which did not allow all children in the classes to use the software.

2.3. Results Analysis

Thanks to the attractive and accessible software tools, children use “Creative Writing” mostly as a drawing tool, neglecting a little its writing abilities. It can be explained by the fact that the first activities were content free.

When children worked with an activity model (the introduction of well-known tales), it ran much faster, probably because it was oriented towards a more precise direction. In this case, children did not tend so much to use the software as an image edition program. The fact that “Creative Writing” is equipped with a text-to-speech tool also allowed that children could correct their own writing during the activities. This is an important feature of the application that shall be pointed out, as it can effectively promote the improvement of writing in the children while they use it.

Observations in the classroom work sessions showed, first of all, the children’s relatively easiness in working with “Creative Writing”. Its tools are quite intuitive and “transparent”, except those concerning file operations and colour of text/balloon altering. However, teaching those features to one or two small groups per class was enough to reach the all class. Experimenting” “Creative Writing” educational *software* allowed the introduction of reformulations/improvements in the application, approaching it even more to the needs felt by the children during its use.

Children revealed high motivation to work with the software, when answering in the satisfaction enquiry that they would like to have “more computer classes” during the week. It can be also confirmed by the fact that some students asked where they could buy the software fore they wanted to work with it at home.

Concerning the collaborative aspect, we stated that, during the activities, there was collaboration not only between the members of the same group, but also between different groups. Students also organized turns for using the computer. This collaborative behaviour was checked through several gestures such as suggestions, indications, corrections, questions between children, or through dictations.

It is also necessary to point out that in all groups there was an un-imposed tasks exchanging, which shows the high definition of the work rules, inside the group, and also reveals the adoption of collaborative strategies.

In informal educational contexts, outside the school, such as the *Family Group* and the *Gifted Children*, with ideal material conditions, in which each child could use a computer, we stated that, generally, children prefer to work alone, even when stimulated to work in pairs.

Concerning synchronic collaboration developed through different computers in the same classroom, most of the children reactions were of enthusiasm and some confusion. It was necessary, therefore, to have a very strong leadership so that children could work with rules, avoiding, at the same time, competition and conflict between them.

Regarding creativity, it was not carried out yet a profound analysis of the creative components of the children’s work in a school environment. But we can already mention that, based on our observations especially in the sessions in which they worked about well-know tales (Three little Pigs and Little Red Riding Hood) children introduced several changes into the original story. Therefore, and according to the three-dimensional model of intelligence proposed by Guilford, we can consider the existence of divergent productions in the creative process. Some signs of creativity were also evidenced in informal contexts by the *Gifted Children Group* already using the last software version features, when they introduced some significant changes in the original stories including: characters roles altering, audio-visual illustration,

analogies with real situations, fiction, introduction of humour and exaggeration in the developed stories.

Once we used a structured observation grill to analyse the collaborative work between children, it became also necessary to have operative fundamental criteria, concerning the exploration of the program potentialities regarding creativity. This aspect shall be more deeply considered in future studies, once the analysed intuitive and easy-to-use educational software develops writing and collaborative work skills, as we stated in our work with children in school environments, even when conditions are far from being ideal.

2.4. Conclusions

Summarizing, we can state the educational software "Creative Writing's" potentialities concerning reading and writing, collaboration and creativity, as demonstrated by the obtained results in the case studies in a school environment and out-school environment. Therefore, it is considered a valid software application that shall be used and integrated in the Portuguese educational system, mainly in the Primary Schools (KS 1 & 2). With this application, students can improve their writing expression abilities, develop collaboration strategies between pairs and empower their creativity in carrying out several works in different subjects such as Portuguese Language, Global Studies, Project and Communication and Information Technologies (this last one, mainly in KS2 e KS3). Thus, this program can not only offer the teachers an upgrade of their pedagogical skills in their relation with the students, after specific training, but also give parents a closer and richer following of their children learning progresses. As these are simply exploration studies, a lot can still be done and improved in future researches concerning creativity (activity models construction and structured observation grills with well defined describers) and synchronous and asynchronous collaboration. Though the application's features, synchronous collaboration was only used in out-school environments. Once school environments had generally very poor material conditions, collaboration took place only between pairs, when two or more children shared the same computer or different computers at a time, in the same room (classroom). The lack of conditions was one of the main restrictions felt on this work at school. It is crucial to create the necessary conditions to experiment other work options, such as collaboration between pairs

using several computers in different rooms (classrooms, schools and countries) so that it is possible to achieve all other “Creative Writing” skills.

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