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Interim Status Report

This document reports on the status of the project at the time of its third review, September 26th, 2001. It first provides an overview of the current status of the project, and then analyzes the four main components of the project: technical development, pedagogical framework, trials, dissemination strategies and project re-organization, outlining for each one the main achievements, the problems encountered, the strategies adopted and the future plans. A final section provides preliminary conclusions.

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CFE	Ben-Gurion University of Negev, Center for Futurism in Education, Beer-Sheva, Israel
UGO	University of Gothenburg, Sweden
COMPUTER TECHNOLOGY INSTITUTE CTI	Computer Technology Institute, Patras, Greece
LRF	Lambrakis Foundation, Athens, Greece
KIDSLAB & NCFL	Halmstad University, Nordic Center for Research on Toys and Educational Media, Sweden
Starlab RIV	Starlab NV, Brussels, Belgium (until June 12th, 2001)

1 Overview

The Today’s Stories project develops an experimental school environment for young children (4 to 8 years old) to foster their social, communicative and emotional skills in the context of everyday activities. The underlying ideas are, first, that children may learn from reflecting on their own and other children's activities and, second, that children may learn from other children’s perspectives on their own activities. The project is developing wearable technology to document such different perspectives on everyday episodes, as well as tangible interfaces to review and to manipulate the documentations. New pedagogical and ethical frameworks complement the technological results. The project advances in an ongoing process of co-design that involves the different stake-holders in the development and deployment of the envisaged school environment.

This document reports on the status of the project at the time of its third review, September 26th, 2001. At that moment the project is in its 34th month of development.

At the occasion of the previous review s(month 22) it was suggested to reconsider the planning of the project in view of finding an appropriate balance between the following concerns:

1. Turning the technology into a stable and fully useable system.
2. Assessing the pedagogical possibilities and implications of the use of the system.
3. Enhancing dissemination and visibility towards a higher impact of the project.

This has been implemented by revising the resource distribution among the partners involved in technology development, as well as the timing of the tasks. This has resulted in, among others, a planned 3 month extension of the project, so that the project will end on February 15th, 2002) (see also Section 6).

Since the last review the project has effectively focused on the first and second of the concerns just mentioned. With respect to the third one, dissemination and visibility, a variety of actions are in preparation and will form the focus of the last three months of the project (starting November 2001), as it was planned (see also Section 5).

The main achievements of the project since the last review are the following. Several new modules were developed to provide all the necessary features for practical use in real school settings. Moreover the system is well documented for its technical support staff as well as for use by teachers and children. A new KidsCam design has been done and 8 exemplars have been produced. These allow for faster image capture, for better triggering and for appropriate feedback to the children.

Two packages, each of them including 3 KidsCams, were shipped for school trials in March 2001. Over the months that followed, the installation procedures have been largely debugged. Since the middle of April 2001 the system has been operational in one site (Denmark). The other site (Israel) still experiences problems in installing the system, probably due to network configuration details. These problems are the current focus of attention of the technological staff collaborating from both school sites. More details on technical progress can be found in Section 2.

In order to assess the pedagogical possibilities and implications of using the system two lines of work have been going on in parallel (see also Section 3 and Section 4). In Denmark, 6 actual trials (three with each of two different school classes) have been carried out since April 19^{th}, 2001, in addition to 4 trials in the laboratory (two labtrials and two trials with the Lab2group consisting of two children). In Israel, the trials with the technology have been delayed because of technology installation problems. There, however, work in the schools has focused on establishing the value of various imaging technologies in stimulating reflection, an activity framed within the broader Autonomy Oriented Education (AOE) Approach. This activity is providing more evidence that, should the technology work smoothly, it would well serve the pedagogical objectives set forth. Eleven working groups have been working each on a specific scenario that aims at achieving a concrete AOE objective with the use of the technology (details can be found in D 1.2.3).

As far as integrating technology into classroom work is concerned, the Today's Stories system has remained fragile despite efforts which have been made to resolve this difficulty since the last review (in the Lab at Starlab at least). We can only reasonably conclude that, so far, we have failed in this mission. There are several reasons for our failure. First of all, the technology has only performed satisfactorily in laboratory settings or under very controlled conditions. This is partly due to the freeware database software, which has an extremely limited capacity for dealing with multiple connections and which has led to repeated crashes at unpredictable times for the staff working with the technology outside the lab. Furthermore, this database, especially upon its first connection, is extremely slow to react and gives the impression to teachers and children that the KidsCam triggers do not work.

A variey of other problems have also been encountered by the NISLab trials staff and the teachers and students at Nr Broby School. In some senses these are technological as well and have remained despite efforts at debugging the software. They concern the above issue of the database but also the issues of compatibility, bandwidth and image handling capacities of the system. The system is far more limited than was initially envisaged with respect to these issues.

What has been learnt from the trial thus far is some measure of how to deal with frustration and how to create user scenarios with alternative technology. With respect to frustration we are talking primarliy of the frustration of waiting for the system to start up and operate and the frustration of seeing it break down in use more often than not. Another frustration is the frustation of having hoped to have been able to shift focus by now from establishing functionality to probing the pedagogical potential of the technology. This has not been possible for us. We had also hoped to have carried out a preliminary evaluation of the pedagogical value of the working technology in collaboration between children, teachers and project staff.

Over the last year the project has had to face a variety of problems.

1. The project’s technology is, in its current state of development, not really plug-and-play. Installation procedures require a certain level of understanding of the technology that is not always easily available in the schools. Note that the project aims at ongoing use over several weeks, not just at demonstration, which assumes semi-permanence of technical project staff.

2. Delays in school site installation have been piling up because of the technological problems, but also because of difficulties in purchase of the necessary equipment (Israel), unavailability of technological support staff on site (Israel), disappearance of the coordinating partner Starlab (see below), in charge of the development of part of the system (kidscam) and its integration with the Magic Mirror.

3. Staff change at one of the trial sites (NISLab) as well as interruptions due to maternity leaves of two key project members.

4. Bankruptcy of the coordinating partner. Starlab closed its business on June 12th, leaving the project without official coordinator.

Early lab group trials at NISLab (first year - Marilyn) using alternative tactile, video and digital technologies indicated that if the technology we have suggested for development in the project could be developed and made to work fairly seamlessly in the school setting, it could have potentially very positive effects on children's motivation and engagement in collaborative tasks and could support teachers in the development of the narrative skills and self-reflective capacites of their pupils. The main difficulty, it was suggested then, was not in the theory or idea of the project but rather in the possibility of reaching a level of stability and reliability of the technology in the time available with the partners available and the distances involved. This has, we feel, proven true. The work that has been done has indicated that the idea is feasible but that the technological difficulties have not been overcome. Technological deliverables have arrived late and this has left little time for the "real" project to take place. In fact, this has not really happened yet.

With the collapse of Starlab the technological problems may remain unconquered, we are afraid. However, if a sufficient degree of stabilisation of the technology can be attained in the near future, which is possible despite the above-mentioned system problems, the focus of our evaluations and considerations can shift from technical quality, functionality and usability towards pedagogical value, as suggested above. This will be difficult, though, unless we can attain an almost plug-and-play status with installation procedures which do not require the kind of in depth understanding of technology that is unavailable in today's schools. The system has to appear to work (basically) seamlessly for the user however "tripped out" the system might be in terms of its technical) specifications.

With a project extension of 3 months it may still be possible to reach a higher level of stability of the technology and consequently achieve meaningful results of a pedagogical nature. This requires more trials in which the technology no longer gets in the way. These trials are planned to go on until the end of the year. The final phase of the project will then concentrate on assimilating those pedagogical results and on drawing conclusions from them.

In the following chapters, we will analyse the four main components of the project: technical development, pedagogical framework, trials, dissemination strategies and project reorganisation, outlining for each one the main achievements, the problems encountered, the strategies adopted and the future plans. The final section (Section 7) provides preliminary conclusions from the project.

2 Technical development

2.1 Main achievements

The technological work has focused on achieving a fully integrated and more usable system for use in the school sites without requiring ongoing technical support.

With respect to the KidsCam the following has been achieved:

1. Re-design of the vest through exploration of alternative designs. Eight different camera positions were experimentally evaluated. The final choice is a back-pack design with breast mounted lens and shoulder mounted sensor module, both of them re-designed. The design also went through a sequence of updates prompted by usability tests during school trials (e.g., addition of feedback LED).
2. Re-design and development of the camera hardware to enable faster video frame capture from the Photobit camera. This hardware enhancement was imperative after having observed that the Year 2 prototype was too slow to obtain a meaningful video sequence. The in-practice speed depends on buffering and available bandwidth on the wireless connection. It is between 1.8 and 3 frames per second, at high resolution.
3. Improvements on the software platform of the Kidscam controller after diagnosing a set of errors during lab and school trials in Denmark and trials during software integration with the Diary Composer platform.
4. Design and implementation of a piggy-back triggering mechanism. With this trigger, one KidsCam requests another camera in its view to make a synchronized recording from a different perspective, thus leading to the

recording of a hyper-video. The automatic trigger that was envisaged in the project has not been retained for implementation because of technical as well as ethical considerations.

5. Design and implementation of the coding and transfer software for camera images. This also involves the composition of episode video from a series of images, as well as ensuring the proper synchronization of the different perspectives.

With respect to the Magic Mirror the following has been achieved:

1. Design and implementation of the interface for creating and inserting custom annotations to the application. Arbitrary images and sounds, also created by the children, can now be imported into the annotation palettes.
2. Definition and insertion into the application of interface sound events and multiple annotations in multiple palettes.
3. Testing and debugging of the Diary Composer application, as well as implementation of modifications that emerged from school trials.
4. Design and implementation of an annotation-based episode retrieval system. Episodes can now be retrieved on the basis of any combination of data, time, user and annotations.
5. Integration with the KidsCam system. Implementation of the modules that read and convert videos (as produced by the KidsCam) into the format readable by the Diary Composer environment.

With respect to the infrastructure, the following has been achieved:

1. Design and implementation of the database structure that maintains all session related data (calendar, children, episodes, Kidscams, annotations,…).
2. Design and implementation of the interface for setting up and inserting initialization data to the application.
3. Design and implementation of the interface for configuring the application (for teachers).

4. Design and implementation of the interface for configuring the application (for kids).

With respect to packaging and integration, the following has been achieved:

1. Documentation of installation procedures, user manuals and problem-solution list for the complete system.
2. Production of series of 8 fully operational KidsCams and of 2 identical mock-ups.
3. Packaging and delivery of full system to two school sites.

2.2 Problems encountered

A variety of problems were encountered of a purely technological nature and most of these have been a matter of debugging the software. Some problems are more difficult to resolve, however, as they derive from the characteristics of infrastructure building blocks.

- <u>Database</u>. We are using a shareware database that can handle only limited numbers of simultaneous connections. When connections are refused the whole system stops. Moreover, the first connection to the database is extremely slow which gives the impression that the triggers did not work, even if they did.
- <u>Bandwidth</u>. The system uses a wireless LAN connection between camera and server. The bandwidth of this connection is shared among the different (3) cameras. The amount of data that the network can reliably handle and in time is therefore limited.
- <u>Image handling</u>. Every frame from a KidsCam is roughly 1MB is size. Frames are taken and transferred as rapidly as possible, and compiled into a ’video’. This video appears as a series of stills, rather than as a fluent motion picture. The current ’netto’ frame rate is between 1.8 and 3 frames per second. Downloading the large files into the Magic Mirror also takes time.

There are still a number of cases in which the system appears not to work properly. During the last lab trial to date (September 6th, 2001), the following cases were reported.

Case1: <u>Works Fine</u>

We switch on the Camera, after 3 minutes we can see the IP address on the TimeServer monitor screen. We push the record button and wait for 1 minute, the frames are received on the ServU FTP monitor screen, when all the files have been received. Then the video compiler compiles the frames to a video, generates a repframe, and inserts the data about it in the database.

Case2: <u>Record does not start</u>

We switch on the Camera and after 3 minutes we can see the IP address on the TimeServer monitor screen. We push the record button and wait for 1 minute. Normally a recording will start here, but nothing happens. Then we make a Telnet connection to the Camera, log in and restart the software. After 3 minutes and 1 minute again, it will most often start recording (or we have to Telnet, login and restart again).

Case3: <u>Record starts but stops after few frames</u>

More Cameras are recording at the same time, we push the recording button on a camera (1. time after restart), after 1 minute the frames are received on the ServU FTP monitor screen, the other Cameras continues recording, but the "new one" sends only 3 to 5 frames and then stops. The red LED on the camera beacon stays on forever after this. Then we make a Telnet connection to the Camera, log in and restart the software. After 3 minutes and 1 minute again, it will most often start recording (or we have to Telnet, login and restart again).

Case4: <u>Video Compiler does not make a RepFrame</u>

When more Cameras are recording and all tree VideoCompilers are running, it happens that one or more RepFrames are inserted correctly in the database, but no file is inserted in the RepFrame directory. We have also seen that a complete sequence with event file, video and repframe has been compiled and then disappears.

Because of Starlab being no longer in the project there is a considerable risk that the remaining technological problems will not be solved. This is especially the case when hardware is involved, but also for Kidscam and image coding software.

2.3 Strategies adopted

The planning of hardware development has been done on a fine-grained basis (up to daily) in order to avoid further delays or to better understand them. The responsibilisation of hardware developers is critical here and it is important to explain that the 'real' project work starts only when that hardware is there.

In order to not further delay the trial planning the focus of technological development has been on providing a minimal but fully usable system as quickly as possible.

Most development in the project has been prototype-driven and iterative. Few precise specifications have been followed. Instead interaction scenarios have been used, while the established look-and-feel of the existing software proved to be a strong guideline for the rest of the development.

The new project coordinator, NISLab, has tried to secure access to the members of the former Starlab team in order to outsource some of the future maintenance work. So far, however, this has not happened in a significant way and on a continuous basis, due to the current unavailability of former Starlab staff (maternity leave, new professional commitments etc.).

What is needed now is what in the car maintenance trade is called "a botch job" in which the technology must appear to operate consistently over a period of weeks, without the presence of technically highly trained staff. This isn't possible at the moment but a botched up system could work over a short term to make the technology sufficiently fluid so that children can develop scenarios in a more natural way than at present and work with them in the system.

Developing and using a face-level fluid system technology would allow the project to continue with some of its key aims and would also allow us to continue with the documentation of problems in the project. This could prove invaluable. Many projects have difficulties. Finding ways in which problems can be reported clearly and promptly in order for the development team to be able to react is necessary.

2.4 Future plan

The project does not intend to develop any new technology beyond what is available now. Technological staff will be standing by in order to deal with problems that may occur during the lab- and school trials.

More laboratory trials are planned with the personnel that will do the school trials. In this way, many problems that would otherwise disrupt completely a school trial can be anticipated, avoided or resolved before the actual school trials take place.

3 Pedagogical framework

3.1 Main achievements

In the third year, the project has achieved at both sites a greater involvement of the teachers in the integration of the Stories approach into their daily school activities. This greater involvement took place both on the side of the planning of the activities and on the side of the leadership of these activities.

In the Israeli schools, work in the third year has so far focused on the further refinement and exploration of the Autonomy Oriented Education (AOE) model through a series of scenarios and activities (described in D 1.2.3), taking advantage of the use of alternative imaging technologies. The following can be considered as the main pedagogical achievements:

- Development of the theoretical concept of AOE – development and test in real context of the general theoretical model (presented in details in D2.1.3), as well as development of key concepts such as “education for meaningfulness” and “development of reflection” with young children.
- Development of a practical methodology for the implementation of the AOE theory in schools – production of guidelines for teachers (presented in details in D2.1.3 and D2.1.4 - this latter due month 36), and production of scenarios for working with children.
- Actual work for 3 years with experimental groups – 5 groups have been involved in year 1, 11 groups in years 2 and 3. High motivation of teachers and students during all years, increase of teachers’ involvements and initiative in the frame of the project.
- Fruitful cooperation between the academic team and field educators. The development of the project – both its theoretical and practical aspects – proceeded through mutual and consistent cooperation between the academic team and the field educators. The academic team was involved in field work,

and field educators were involved in conceptual construction. This dynamics has generated a coherent body of content of theoretical concepts and opportunities for its implementation in reality.

- Willingness of the ministry of education of Israel to consider funding for continuation of the project. As the project’s activities were highly meaningful for the groups of teachers and children that were involved, this experience has potential for larger scale dissemination.

The Danish site has progressed from activities being mainly carried out by the project's staff into a process also including the plans and ideas of the teachers involved. This has brought the project's development much closer to the normal pedagogical processes in the school. However, one should note that in comparison with Israel, the Danish site has so far focused mainly on activities allowing usability tests as opposed to pedagogically oriented scenarios. In this final phase, having achieved a greater stability of the technology, the Danish site will focus more on the pedagogical goals of developing self-reflection and bridging between the school environment and the children’s parents.

3.2 Problems encountered

Most of the problems encountered have been related to the delays in the delivery of the technology and the unexpected length and complexity of the installation process at the two sites. The “fragile” nature of the technology, as well as its seamingly unpredictable behavior, has also created some difficulty in the carrying out of the trials in the school sites. Especially when working with groups of younger children, there have been problems to keep up their attention when long periods of waiting occurred in the classroom. In Denmark, one of the participating teachers decided to stop her class's participation. This was much due to the gap between the expected and actual forms of children’s participation allowed by the technology in its current state of development.

In Israel, it was necessary to establish a pedagogic framework not relying on the Stories technology, but that would nevertheless be ready to absorb it as easily as possible when it would be finally fully operational.

Another difficulty concerning the late arrival of an operational technology was handling the expectations of the academic team, of the teachers involved, of the people from the ministry of education that supported the existence of the project because of its high potential for technological innovation.

Early lab group trials at NISLab, and actual school experience in Israel using alternative tactile, video and digital technologies indicate that if the technology we have suggested for development in the project could be developed and made to work fairly seamlessly in the school setting, it could have potentially very positive effects on children's motivation and engagement in collaborative tasks and could support teachers in the development of the narrative skills and self-reflective capacities of their pupils. The main difficulty, then, is not in the theory or idea of the project but rather in the possibility of reaching a level of stability and reliability of the technology in the time available, with the partners available, and the distances involved. This has we feel proven true. The work that has been done has indicated that the idea is feasible but that the technological difficulties have not been fully overcome.

Other challenges have been reported in Israel that do not refer to the state of technology development but are more related to the inherently difficult task of stimulating innovation processes in school environments. Building the bridge between theory and practice in the educational work, filling the “gaps” between high values and the everyday life of young children, have required a high degree of involvement of the local educational researchers involved in the project. The same applies to maintaining the teachers’ motivation and actual investment of time and effort, in spite of all other obligations they have in their work and private life.

3.3 Strategies adopted

To keep the motivation of children and teachers high in spite of the technology delays and fragility, the following strategies have been employed:

- Establishing mutual cooperation between academic team and field educators. Getting feed-back from the participating children as an integrated activity in the development process.
- Planning for a process of integration of the new technology into everyday activities in the school.

- Treating each experimental group as an independent “case”, and developing the pattern of work and contents as suits its own context.
- In Israel, establishing a general forum of all experimental groups together with the academic team with the purpose of discussing and learning together the main issues of the project.
- Pushing parallel progress in both theoretical and practical aspects.
- Deciding to work with existing low-tech solutions until having the new prototype in full use.

3.4 Future plans

Future plans at the two sites include:

In Denmark:

- To test the technology in a lab environment in order to minimize the risks of working problems during trials at the school site.
- To test the technological equipment in structured on-site situations with the children and their teacher. During these sessions the children should understand their role as partners in trials, which may involve waiting and repetition. If children realize their importance as "scientists" they will hopefully accept delays without loosing interest.
- Finally, the technological equipment will be tested in situations more closely linked to the everyday activities of the school. The evaluation of the three experimental steps just described will provide information on the potential of the technology at several different levels.

In Israel:

- Completing the installation of the technology.
- Having school trials with the technology in the framework of weekly meetings with a group of children and teachers who are already familiar with the project, trying to figure out what could be the added value of the new technology in relation to the AOE theory and methodology.
- Analysing results, evaluating and writing the pedagogic deliverables.

4 Trials

4.1 Main achievements

The technology was delivered to the school sites in the course of March 2001.

In Denmark, the infrastructure was ready including pre-installation of the software and the wireless network. The school trials started on April 19th, 2001. So far, six school trials took place in Denmark in two classes in the same school (NR. Broby, Funen): one in pre-school and one in 4th grade. To these trials, one evaluation trial should be added. Four more trials are planned with the fourth-grade class.

In Israel, weekly trials took place in 11 experimental groups, distributed over different schools. No trials were carried out using the actual Stories technology so far but validation trials of the AOE model took place, using other imaging technologies (digital cameras, photographs,…). Details concerning both sites are to be found in D1.2.3.

The main achievements are:

In Denmark:

- The first achievement is related to the relationship between the children, their teacher and the presented technology. To become more familiar with the use of different forms of electronic devices was the main reason for the school to participate in Stories. The teachers as well as the children involved witness that they are now much more comfortable with cameras, video, screens etc. The second achievement is more of a spin-off kind. Both the teacher and the children report that their experiences during the trials have made them develop within several areas related to the experiments. Some examples are:
    - The teacher reports that the children used to be much more shy acting in front of their classmates. The use of various forms of presentation during the experiments has made them more self-reliant in this kind of situation.
    - As the children have come into contact with many new persons linked to the project, their interest in other cultures and in using the English language has grown.

In Israel:

- A coherent theoretical model was developed, that serves as a basis for understanding the goals of education and as a basis for practical development of educational field work.
- Teachers' professionalisation: teachers in the project claim that being involved in the project helped them understand, deepen and clarify their intuitive work with children.
- Other teachers stress that being part of the project enabled them translate abstract educational ideas they believe in into practical interactions with children.
- Motivation and pleasure of children and teachers in school: children, teachers and parents stress that the involvement in the project increased their own and their children's pleasure in the school, as well as their motivation and willingness to come to school.

4.2 Problems encountered

The late delivery of the technology to the trial sites, as well as the difficulty of making it work smoothly has been a concern for most of the trial period.

In the Danish site, the change of project staff created some discontinuity in terms of presence in the school, types of activities and pedagogical approach. Fortunately, this did not affect in the end the motivation and involvement of the fourth grade teacher and children.

The experimental nature of the technology has caused some difficulty in taking the important step from working with scenarios oriented towards usability testing to the creation of scenarios that are pedagogically meaningful, putting the focus on the former rather than on the latter.

In Israel, the installation is still incomplete due to network problems (late purchase of equipment, late shipping, lack of local technological support). The difficulty to travel to the site due to the unstable political situation in Israel makes solving the problem more laborious and time-consuming. The unexpected disappearance of the coordinating partner and main technology developer, Starlab, requires a stronger effort from the remaining technological personnel in the project (CTI and NISLab technological support).

4.3 Strategies adopted

The following measures should help overcome the problems encountered:

- Increasing usability tests in the lab before going to the school sites.
- More precise reporting of specific problems.
- Collaboration between the two sites.
- Designing usability test scenarios in such a way that they are pedagogically meaningful.

4.4 Future plan

Four trials are planned at the Danish site to take place on 13/09, 4/10, 11/10 and 25/10.

The focus of the trials at the Danish site will be on the usability of Today’s Stories technology and on goal-directed pedagogical activities aiming at developing skills in reflection and self-reflection. The idea is to let the children work on a special theme like they did this spring with great success in their feature course on the production of a newspaper. Children will work together to produce a video, for example, of a day in the school in Nr. Broby. This work could include some of the children using the Kidscam and Magic Mirror but the video production is the principal idea, and the example of bringing information from one micro-world (the school) to another micro-world (the parents and the family) could also easily be integrated in the video production theme.

In Israel, the trials using the Stories technology will take place in the framework of weekly meetings, or as an intensive workshop, with a group of children aged 6-7 and their teachers. They are already familiar with the project. The goal will be to assess the added value of the new technology in relation to the AOE theory and methodology.

5 Dissemination and Impact

5.1 Main achievements

The project was presented at a seminar at a professional fair on educational technologies, featuring three selected projects from the i3-ESE programme (Genova, Italy, February 2001).

The following articles were written and published in the period November 2000–August 2001:

Fremtidens hverdag, Jyllandsposten, 26 November 2000

Børn lægger brikker til historier, Jyllandsposten, 26 November 2000

Skoledagen bliver til film, Jyllandsposten, 26 November 2000

Six articles are in the process of being published in Israel.

A video has been produced in Israel presenting the key concepts of AOE theory, and the first steps taken in a specific attempt to implement it in a real school in Israel, within the framework of the Stories project.

5.2 Problems encountered

Images of children are subject to particular privacy rules and cannot be made available prior the written consent of parents. Their availability would greatly enhance the impact of any dissemination effort.

5.3 Future plan

The NISLab team is currently identifying potential academic and lay publications that may accept papers/articles based on the interactive methodology being developed to support the technological development, e.g. the ACM series, Technology-in-Education, or regional, national, international education practitioner publications.

Two book plans have been developed in parallel in Israel, one focusing on practical issues, the other on theoretical issues. The late trial schedule has made the deep exploration of practical pedagogical issues difficult and uncertain. At present the plans focus more on the theoretical publication, addressing a more academic audience.

A video will be produced in Denmark, presenting the work in the school environment and with focus on the trials.

KidsLab will also produce a video with the materials they have collected during the work on Today's Stories and activities related to the project.

6 Project re-organisation

After the last review it was clear that the project would require a re-organisation, both in terms of resources and in terms of timing of the project tasks. Moreover, the bankruptcy of the coordinating partner (Starlab – RIV) required an additional reallocation of responsibilities. The following sections describe how the project has handled these organisational matters.

6.1 Resource redistribution

At the occasion of the previous review (September 2000) it became clear that there was an imbalance between the resources allocated to the technology development partners. A possible solution was to re-balance the task distribution but this would require a tight collaboration between partners, not easy to implement in such a geographically scattered project team. So, we have opted for a more effective distribution of resources. The redistribution is solely among CTI, Starlab and LRF and has been agreed upon by all partners and the EU.

- CTI required the resources of an equivalent of 12pm, which is 55.9KEuro at the labour rate which is in the contract, at 100% funding from the EU budget.
- Starlab has transfered the equivalent of 7 of its person months to CTI. This corresponds to a cost of 79.1KEuro at 50% funding from the EU budget, so 39.55KEuro for CTI.
- LRF has transferred the equivalent of 2 of its person months to CTI. This corresponds to a cost of 19.41KEuro at 50% funding from the EU budget, so 9.7KEuro for CTI.

This gives a total additional resource of 49.25KEuro for CTI, which brings it close to the required budget (88.1%). With this redistribution, the design effort at LRF was reduced to 3.5 pm, which is still adequate for the interfaces to be designed.

6.2 Project extension

In view of the timetable of the project, the delays in stabilising the technologies, the instability of the political situation around the Israeli site, and taking into account that the school summer break will delay the process, it became clear (March 2001) that the project would benefit from an extension of its duration.

The project was supposed to be fully completed by mid-November 2001. A three-month extension would allow the project to complete an additional significant school trial period and achieve a more efficient evaluation of the pedagogical impact of the project research results. For this reason, we have asked for a three month extension of the Stories contract duration and asked that the date of termination of the work be changed from 14 November 2001 into 14 February 2002. This extension has been granted without additional funding.

The extension only concerns the trial and pedagogy related tasks. The deliverables on technological issues remain scheduled as before. Trials will go on till the end of November 2001, so that trial reports are rescheduled till M36. The reports with final conclusions and roadmaps are rescheduled for the new end of the project which is M39 or February 14th, 2002.

6.3 Change of coordination and partnership

On June 12th, 2001, Starlab closed down rather unexpectedly. Thus, one project partner who was also the coordinator, is no longer operational and stopped contributing to the project from that date. The other partners and the Commission officials were informed within 1 day of the failure.

In order to anticipate the difficulties of transfer of coordination and the finishing of the project, a plenary meeting was called at the home of Walter Van de Velde in Brussels, former project coordinator, on June 21/22, 2001. The meeting was attended by Roni Avram, Dennis Beach, Katja Hansen, Rossella Magli, Maria Ramalho, Afrodite Sevasti and Walter Van de Velde.

Between the participating partners it was agreed that, at this point in the project, it does not make sense to look for a new partner that can take over Starlab's role. It was also agreed that NISLab take over the administrative co-ordination of the project and, via sub-contracting, Rossella Magli the technical coordination. A subcontract with

Rossella Magli was concluded, effective August 1st, to work an average of 4 days per month on the project. She will be informally helped by Walter Van de Velde whenever it is necessary and possible to ensure the technical co-ordination of the project (day-to-day management and ensuring deliverables are on time and of good quality etc.).

The biggest risk at this point is that the technology will fall flat without the know-how on hardware and software that was developed at Starlab. Therefore, when possible and necessary other subcontracts should be considered with former Starlab staff (Maria Ramalho in particular) to assure the technological stability of the Today’s Stories system at least throughout the trial period.

Several issues still need to be resolved:

- Technology ownership.
- New consortium agreement.
- The financial implications of this re-organization.

In spite of this drastic re-organisation the former and present project team has shown great flexibility in taking up responsibilities toward achieving the project milestones and safeguarding the best possible conditions for the upcoming trials.

7 Preliminary conclusions

At the 2nd year review it was suggested that the project plans for a moment of reflection on what exactly it is that it is trying to achieve, and what for. The initial plan to do this at the Spring Days in Porto was not feasible, and the re-organisation effort afterwards has left little time for systematic reflection. However, a number of preliminary conclusions can be drawn, both about the process and the product of the project. These conclusions will be key elements of the final report (M39).

<u>With respect to the pedagogical objectives:</u>

- The evidence given by the Israeli trials through the use of alternative technologies shows that if the technology would work seamlessly it would be very appropriate for enhancing children’s motivation and engagement in collaborative tasks, narrative skills, reflective and self-reflective processes, and multiplicity of perspectives. The concept, therefore, proved to be valuable and pedagogically worth-while. The main difficulty resided in reaching a satisfactory level of stability and reliability of the technology.

- A pedagogical framework is partly culturally determined and therefore inherently difficult to transfer from one site to another. Therefore, the project has worked with two different pedagogical approaches. In Israel the use of the technology is tailored to a strong pedagogical framework while in Denmark the pedagogical framework remains implicit and slowly emerges from the use of the technology.
- Should pedagogical frameworks be normative? The never-ending discussion… (we’ll attempt a conclusion in a dialogic chapter in the project Final Report – month 39).
- The age issue: to what extent does the use of complex technological systems require sophisticated cognitive skills, is it appropriate for pre-school children, and is it still interesting for older ones? To which extent is there a deterministic age factor affecting what the children can and cannot do? (We’ll attempt some conclusions in another dialogic chapter in our final report concerning this controversial issue). One thing can already be stressed: the importance of good scenarios development and of guidance from teachers.

With respect to the technological objectives:

- Difficulty to make the technology “disappear”.
- The challenge remains to make the technology sufficiently fluid so that children can develop scenarios in a more natural way (related to disappearance of the technology).
- Expectations from working with ‘computing’ and ‘video’ create high expectations to the quality of the new medium.

With respect to scope, impact and visibility

- We have achieved to create a truly new technology that makes people “jump” further in imagining what computers can do in schools. How far is the ongoing e-learning discussion!!!
- The technology created has a high potential for different types of uses.

- Mismatch between high expectations based on a technological and pedagogical concept, and their concrete instantiation within the limits of actual technologies, actual class settings, … Ethical.

With respect to the process in the project

- Enriching multi-disciplinary collaboration but difficult to carry out in parallel ambitious technological development and trials at real sites with real people and real organisational and pedagogical requirements and constraints.
- Difficult to work with geographically scattered sites, which furthermore are far from the technology development sites.
- Technologically oriented researchers and developers do not always appreciate that an important part of the 'real' project work can only start when their hardware and software is delivered. Deadlines for having technology available should not be confused with having technology tested and even less with having its use and impact established. In a radical co-design approach these objectives become strongly intertwined, which is not always easy to manage.
- Lack of time for thorough evaluation in trials. A follow up project would allow us to concentrate on a thorough pedagogical evaluation of the technology and how this serves our concept in a school setting.

8 Overview of the deliverables and materials

The project presents the following deliverables for review:

- D1.1.3. School Environement Reference – third year
- D1.2.3. Deployment and Trial Plan – third year
- D3.2.3. KidsCam Specifications and Designs
- D3.3.3. Diary Composer Specifications and Designs
- D3.4.3. Infrastructure Specifications and Designs
- D3.5.3. Packaging and Documentation

In addition, supporting materials from the trials in Denmark and Israel are provided.

Note that the following deliverables, normally due in month 33, have been rescheduled in the course of the project re-organisation (see also Progress Report May 15th, 2001).

- D1.3.3. Trial Reports and Material – third year. Now due in M36.
- D4.1.3. KidsLab Report – third session. Now due in M39.
- D4.2.2. Ethics, Privacy and Community Implications –final. Now due in M39.

These deliverables all relate to trial results or KidsLab sessions,.and their re-scheduling is justified by the extension of the trial period until the end of 2001.

All progress reports and cost-statements have been delivered to the EU.

The table below updates Form 5.1 from the Project Programme with new due dates and responsabilities for the deliverables in year 3 (now extended with 3 months, i.e., up to M39).

YEAR 3	D1.1.3 School Environment Reference – third year	P	WP1	MIP	M33
	D1.2.3 Deployment and Trial Plan – third year	P	WP1	MIP	M33
	D1.3.3 Trial Reports and Material – third year	P	WP1	MIP	M36
	D3.2.3 KidsCam specifications and designs	P	WP3	RIV	M33
	D3.3.3 Diary Composer specifications and designs	P	WP3	CTI	M33
	D3.4.3 Infrastructure specifications and designs	P	WP3	RIV	M33
	D3.5.3 Packaging and Documentation	P	WP3	RIV	M33
	D4.1.3 KidsLab Report – third session	P	WP4	EPFL	M36

	D2.1.4 Pedagogical roadmap and guidelines – final	P	WP2	CFE	M36
	D2.2.3 Curriculum – final	P	WP2	CFE	M36
	D3.1.4 Technology roadmap and guidelines – final	P	WP3	NIS	M36
	D4.2.2 Ethics, privacy and community implications - final	P	WP2	UGO	M39

(1) Availability: C = confidential, R = restricted, P = public