WORKPACKAGE WP1: OPEN SCHOOL COMMUNITIES

School Trials

Deliverable 1.3.1 –Trial Reports and Materials

Deliverable description	**p 3**
Activities Update	**p 4**
Appendix A - Draft Discussion Document	**p 5**
Methodologies	**p 5**
Incorporation of expert and reference group outcomes	**p 5**
User-performance evaluation	**p 6**
Selection Criteria	**p 7**
References	**p 8**
Appendix A1 – Extract D 3.3.1 Diary Composer	**p 9**
Pedagogic aspects of the diary composer	**p 9**
Scenario of use	**p 10**
Novel Features	**p 11**
Video Explorer, Composer, 'Worlds' stages for reflection	**p 11**

TODAY'S STORIES

Open School Communities- School Trials

D1.3.1- Trial Reports and Materials – First Year

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WORKPACKAGE WP1: OPEN SCHOOL COMMUNITIES

D1.3.1- Trail Reports and Materials – First Year

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Keywords	Evaluation, technology trials, educational objectives
Abstract	To use and evaluate the technology results of the project towards realising particular educational objectives in a real school environment. The trials will be executed in two school environments that are committed to the project. These trials will produce raw material for further study, as well as trial reports and implication reports for the technology.
EXECUTIVE SUMMARY	Please refer to deliverable main executive and co-ordinator's executive project summary

Activities

The execution of on-site plans has been delayed. Items for discussion were carried over after the consortium, Sienna meeting in October 1999. Rescheduling was agreed due to slower than anticipated pace of technology development. An electronic BSCW site was initiated and a discussion space created in Mid October 1999, - Discussions on Trials and Evaluation. NIS is responsible for animating these discussions. Discussions must reach concrete results by March 2000.

A discussion document has been uploaded (10 December 1999) also included in Appendix A of this document with extracts from the 'scenarios of use' located in Appendix A1. During the December 1999, teleconference provisional agreement was reached to schedule for two trial session of KidsCam system, between January – May 2000. Where technology is at earlier stages of development a combination of evaluation methodologies will be used.

Provisional dates have been set for first stage integration meeting in Brussels on January 31st - February 1st- 2nd, 2000.

In terms of documenting the results of on-site trials according to the framework set up by T1.2, this has been re-scheduled to run in parallel with technology development progress, (see A, A1). Outcomes from these discussions will report to the next round of roadmap work and to the design and evaluation tasks.

Notes:

Dependencies:

Adequate planning in T1.2, and community preparation in T1.1. Results from technical and pedagogical work available in sufficiently stable form (depending on cycle). Output of trial reports to the technical and pedagogical development tasks, and to WP4.

APPENDIX A

Deployment and Trail Plans and Trial Reports and Materials

Draft Discussion Document: D1.2.1, 1.3.1

Authors: Marilyn Panayi, David Roy (NIS Team)

1. Methodologies

The methodological approach being proposed is one that is supported by the practice in User- Centred Design for technology development (INUSE 6.2 Handbook of User-centred Design) and includes existing 'best practice' from people working with children in both pedagogic, experimental, research and industrial settings (1, 2, 3,4,5,6 Other ref. from consortium, CFE, LF, CTI, Kidslab). Recommended health and safety issues and standards that could support practise in Today's Stories (7, 8,).

1.1 Suggestion of methodologies for use in trials

The suggested methodologies for use in the deployment trials and sampling could include:

- User performance evaluations (user- based observations for design feed-back, co-operative evaluation, supportive evaluation)
- subjective assessment: (participatory focus groups, children, staff, parents, researchers, adult students, mixed group, interviews group/individual, 'Community of Inquiry')
- single/dyadic/triadic case study
- activity analysis
- interaction analysis
- design for all
- standards and guidelines for HCI

An informed decision needs to be made by the research team after consideration and evaluation in terms of method choice, rationale, and resources available and critical path value of this activity.

2. Incorporation of expert and reference group outcomes from Year One of project. (Source deliverables: Year One D1.1.1, D1.1.2, 3.2.1, 3.3.1, 3.4.1, 4.2.1, 2.1.2, 2.2.1, 3.5.1, 4.1.1)

2.1 Task related deployment

Two main areas are being suggested for task related development:

a) Develop interaction methodology for tracking the normal and controlled scenario situations. In particular, identify sequence for tracking children and activity features.

b) Identify a selection of curriculum activities that lend themselves to tracking of technology use in normal situations and complimentary situations.

2.1.1 Understanding the context and use for the system

Outcomes from work carried out in year one need to be synthesised and combine with expert based input from the school-based staff and the pedagogic and technology research teams. Three areas for outcome collection have been identified.

a) Outcomes from earlier work at both the Israeli and Danish sites will be charted to identify particular aspects of the children's day that may be of interest. These observational data could help to frame and focus the recording and reflection activities (D1.1.2, 2.1.2, 2.2.1, and 4.1.1).

b) Outcomes from paper prototyping, video prototyping, computer–based prototyping and Wizard-of-Oz studies will be integrated.

c) Expert based input will come from the research teams responsible for technology development.

Technology guidelines will be developed and build upon documentation (D3.3.1, 3.4.1,4.2.1,3.5.1, 2.1.2,4.1.1) and discussion initiated on the internal BSCW site for the trials in terms of e.g. performance criteria in terms of aesthetics, ergonomics, functionality etc.

2.1.2 User-performance evaluation

Two Trials

Initial trials of KidsCam and software will take place in the Danish pilot group, teacher from Nr. Broby Skole will be invited to these first trials. Outcomes and analysis of these activities will form the bases of the protocol for the trial guide material that will support the school-based trials. The second trials will take place the school site and be co-ordinated with the Israeli site trial. The outcomes from the two sets of trials will be fed into the design and development cycle.

Curriculum

Curriculum activities will be identified in collaboration with the staff teams at both sites for the deployment trials. Deployment trails will take place in the situated context of the pedagogic school sites. Both pedagogic and technology supported curricula aims will be defined in terms of base-line expectation of school staff and research team.

In Denmark, the initial trials will be with the reference group (pilot at NIS Lab), followed by trials with Nr. Broby School. During planning discussion, provision has been made in the curriculum to develop a 'theme' week based on the Stories theme of 'reflection'. The theme week will take the form of an 'artist and technology residency'. It is planned that the Stories NIS team will co-ordinate activities. Members of CTI/LRF, RIV, UGO will join the activity week. The topic of the 'theme week' will link to previous curriculum activities and the aims of the technology and pedagogic trials for

Stories. Members of the team will develop activity brief in context of the pedagogic curriculum. The technological objectives will be embedded in the pedagogic activity.

A similar protocol will be developed that fits the pedagogic culture of the Israeli site and fits with technology deployment experience of the CFE team.

2.1.3 Selection Criteria

Focus criteria for the tracking exercise, for the child, peer, adult and technology in normal and controlled (complimentary) scenario based situations are to be developed.

The research team needs to identify the information that is required; this could be formulated based on discussions and documentation outlined in deliverables for WP3, 4.

Scenarios have been written that suggest how the KidsCam system could be used in the classroom as a pedagogic tool to support early childhood reflection (D3.3.1, 3.2.1). These have been included in Appendix A1.

These scenarios will be presented as a focus for discussion and Wizard-of- Oz exercises, and walk-through with staff to facilitate concept consolidation and attempt to normalise anticipated hardware/ software inconsistencies.

A list of focus criteria will be developed these could included:

- Items of interest chosen by children for shooting with the KidsCam, (KC)
- Tracking of 1-4 children
- Interaction dynamics e.g. process of selection of children to wear the KC, negotiated use of KC
- Selection of features for operating the KidsCam
- Aspects of interaction with the MM interface/Composer
- Level of facilitation of staff, researchers
- Role Stories research team

In the 'complimentary' scenario children will be selected on rotating bases to trial the KidsCam, Magic Mirror' and 'Composer' software.

An 'open' exploratory activity will be developed to trial the limits of aspects of the KidsCam hardware with the explicit aim to feed into the next stage of KidsCam system development.

2.1.4 Trial Evaluation and Documentation

Evaluation of outcomes needs to include both pedagogic expectations and performance/success criteria for technology system and brief analysis of inherent benefits and limitations of individual methods with rationale for choice of method. It is proposed that both sites should share a core observation, documentation and evaluation protocol. Additional material will be developed by the team to include some aspects of cross-cultural pedagogic practice. Native speakers at both sites will be briefed as to the

focus for the observation. These observers will work closely with the 'trial team' pre- and post trial and be responsible for integrating the outcome documentation.

Results from trials will be synthesised and outcome information evaluated. It may be useful to develop visualisation for functional/ non-functional technology features in relation to normal and complimentary situations.

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APPENDIX A1

Extract: D3.3.1 Diary Composer Requirements and Concept Prototypes

(Tables can be found in D3.3.1document)

The pedagogical aspects of the diary composer

Aspects of Cognition & Learning

Pedagogic aspects I – The User Profile

The Stories project aims to explore the issues that impinge on software design in relation to a 'composer' tools that will accessible to children between 4-8 years for the exploration of video data collected through interaction and supported by wearable technology. The pedagogic profile of the children currently involved in the study from Denmark includes children 5/6-10 years that are at stages of linguistic/language development are emergent readers. In terms of access to technology they have access periodically to the school communal area resource of Macintosh and the newly installed iMac machines. Typically, exposure may have been limited access to games, simple graphics and text programmes with significant staff support. Compared to some other European countries there is a higher rate of personal home computers per household. The majority of children at Nr. Broby School have access to a home computer. Typical usage at home is for game applications.

There has been a commitment to IT learning at the school for at least the last twelve years and a specific member of staff has co-ordinating responsibility. Discussions are ongoing with regard to cross culturally aspects that are most relevant to the Stories project. In the first instance in for Denmark and Israel as these are target pedagogic communities we are currently working with. Within the constraints of the resources, the project will work toward the development of a generic interface with appropriate cross-cultural accessibility.

Pedagogic Aspects II - Concept Prototypes and Scenario for Use

The systems as it is currently conceived involves a 'Magic Mirror' and a wearable KidsCam and Video Explorer Software (VES). Interaction is the first instance is classroom based. The classroom infrastructure has a 'Magic Mirror' (MM) which is an active touch screen with video camera, LAN connection network that manages the video data from the KidsCam. In the normal mode, the Magic Mirror's fixed camera output is displayed/reflects what is happening in the classroom, this mode is changed when children wearing a KidsCam approach the MM.

Scenario of Use

The pedagogic aim for the series of session are to create opportunities for reflecting on an experience, co-construct narrative, create an artefact for communication exchange (information token).

Task

Yesterday the children (Class 3. 8-9 year olds) have been on a trip to the zoo and are creating a display about their trip to share with the younger children and an 'information token' to take home, the activity will cover several sessions. Today's session which last 45 minutes and is the starting point for collecting all their memories through stories and other artefacts e.g. drawings, photos, video clips, toy animals, souvenirs etc for reflection and first decisions of how to create a display and what of sort of 'information token'.

The task has been framed and presented by the adults (two teacher share the teaching of this group, a Today's Stories researcher joins the class once or twice a week or for 'residencies'). The children have chosen three members of the class to act as 'magic eyes' for group. The children have set KidsCam 1 to use the 'automatic mode' i.e. the KidsCam shoots short 2 minute clips every 5 minutes during the classroom activity, KidsCam 2 is set on 'emotion trigger mode' and KidsCam 3 is triggered by the key pad controller.

Silvia has been wearing the KidsCam 1 and operating it in 'automatic mode' during the zoo visit and will continue wearing this camera during this session. Tobias has chosen to wear KidsCam 2, set on 'emotion trigger and Anne-Mette is wearing KidsCam 3, triggered using the launch-pad controller.

Half way through the classroom activity the children decide they want to 'view' and comment video material they wish to see and explore what they have taken. As Silvia approaches the MM this 'first' stage interaction mode is activated by the child's KidsCam, the magic mirror reflects the last filmed video clip. Silvia is followed by Tobias and Anne-Mette the MM, creates and displays two more 'magic eye spaces'. The children have lively discussion, debate and negotiate how they are to annotate their video clips. Two of the children decide to take material to the 'worlds of friends' as they want to make stories about how the animals live in the zoo. The third child felt that the animals were unhappy at the zoo and wants to make a poster to tell people about this. They decide that the material from the 'world of friends' can be used as a CD for the display and copies made to take home. The poster will also be part of the display. They are considering making the poster images into flat shape in the style of a box that classmates and people coming to the display can make and take away. They decide they will get their teachers help with the creating the design for the box and also Lars as he had made one before.

Novel features

'Multi-User Multi-Perspective' and ***'Co-construction context and tools'***

The TS teams have been discussing both context/opportunities for pedagogic interaction and features for inclusion in the software. The novel aspects of the system being proposed by the TS project lay in the potential of the system to allow for two key features that will support social interaction:

'Multi-User Multi-Perspective' [MUMP] capture of events 'Co-construction context and tools' [CCCT] that would facilitate and support exploration of these perspectives in a pedagogic context.

The aim is to enhance children's development both at cognitive, physical and social communication level. Scenarios are being developed for use in Israel in the context of the AOE philosophy and in Denmark within the education culture of the Nr. Broby Skill.

Video Explorer, Composer and 'Worlds'- Stages of Reflection

Interaction with the video material from the KidsCam has been suggested at two initial levels and through the metaphor of a 'video explorer'. This 'video explorer' is essential a platform for the first stages of reflection. These will include the software and interface functionalities of location, navigation, individual or collaborative viewing and annotation/editing and a 'composer'.

The concept of a ***'Video Explorer'***, ***'Composer'*** and ***'Toolbox Palettes'*** for the explorer and composer has been suggested. Location, navigation is through a control panel. ***Annotation*** functionality is provided through a 'palette', functionality of the palette could included: traditional editing function, cut, paste, drag, drop, coupled with other levels of annotation such as sequence by time, event, emotion, people, object, movement.

Composition is offered through the metaphor of ***'Worlds'*** where children can re-create the video clips, create new compositions using additional material from e.g. web, scanned photographs, audio captions, stories. These 'Worlds' provide a range of environments for the further stages of reflection giving opportunity for open-end creative compositions i.e. blank canvas/environment, to guided composition e.g. 'World of Emotions' such as happiness, sadness, excitement, 'World of Friends' etc.

States of Reflection

A series of stages of reflection are proposed as structure for navigation and exploring the video material. It is envisaged that the adult in the first instance will structure and support the location, navigation and annotation stages of reflection. These may not necessarily be sequential. As children acquire competencies and skills in the using the 'video explorer' and 'composer' environments, they can use the system as 'independent pilots'. For most children it is envisaged that this will happen in a very short space of time after exposure to the system e.g. second or third trial of use.

For illustrative purposes the stages of reflection have been described:

First State of reflection of material involves location and navigation.

Second State of reflection involves individual or collaborative viewing and annotation that may be adult supported depending o the task or skills of the children.

Third State of reflection would involve using further features of the annotation palette to explore ways in which we 'perceive' and come to understand events that we are involved in. Currently suggested categories for these stages of exploration include Event, People, Place, Objects, Time, and Action/Movement.

Fourth State of reflection involves again either individual or collaborative co-construction of material in different 'World' contexts. These worlds could be populates by single or composite entities, use original video material alone or with imported material. Continuing with the 'palette' metaphor there is the opportunity for children to work and play in different formats e.g. linear narrative, montages, perspective scenes etc. Depending on the age range/skills, level children's activity can be scaffolded. What is made visible/accessible to the child could be a very constrained environment, e.g. an empty 3D box where they can play and construct the content of the faces of the box or a sphere or even helix structure that rotates which they can populate with their material.

The 'Worlds' and stages of reflection software paradigm being proposed could provide children both with constrained and more open environments to explore creative co-construction. The proposed tool could have widespread use across the curriculum as it became embedded in educational culture. Table A.2 summarises aspects of the curriculum for which support material could be created, both by the manufacturer of the system and the students and teaching staff. As is often the pattern with technology penetration in the educational setting, use and development of the resource often follows both a needs and interest driven path. In recent years, electronic networks have impacted this 'self-organising' system. The nature of support material for cognitive and physical development is currently being specified.