Supporting the Travelling Tradition: A report on the work of EFECOT in exploring the use of distance learning environments for children

Ken Marks

Department of Educational Studies
The University of Sheffield
388 Glossop Road, Sheffield, S10 2JA
Tel: (+) 114 222 8179
Fax: (+) 114 276 7259
Email: k.marks@sheffield.ac.uk

Abstract. The European Federation for the Education of the Children of Occupational Travellers (EFECOT) has been exploring the use of interactive courseware within a telematics framework, in order to strengthen supported distance learning for the large numbers of European Fairground, Circus and Bargee children who travel with their families and whose schooling experience is severely disrupted. This paper is a first attempt to collate and describe developments from four separate transnational projects. It draws from both internal, and publicly available, project documentation to explore evolving learning environments and emergent issues. In particular, there is a discussion of the parental role in home-based, mediated, settings, and an argument that an increased understanding of the potential of this role is central to effective user needs analysis and environmental design.

INTRODUCTION

The European Federation for the Education of the Children of Occupational Travellers (EFECOT**)** was set up in 1988, as part of a response to the needs of travelling children, following an initiative by the European Parliament. The remit of the organization includes the exploration of ways of addressing the challenge of interrupted learning. This paper is an attempt to describe EFECOT experience in the area of supported distance learning for children and, in particular, the evolution of approaches which have involved ICT. The distinctive feature of the initiatives described is the wireless nature of communication, as travelling families have limited access to fixed telephone lines or cable facilities.

The paper will outline the user context of the challenge, and will then describe inter-related developments in both telematics and pedagogy. It will conclude with a listing of some of the main issues which are emerging in this area of work, including a discussion of the role of parents in the mediated environment.

1. THE USER CONTEXT

'Occupational Travellers' are defined by the European Parliament as the Bargee, Circus and Fairground communities across Europe, seasonal workers, and others who travel as a direct consequence of their trade or profession. Indicative estimates suggest that there are something of the order of half a million such Travellers across the European Union. There is also an overlap with other travelling cultures, such as those within the Gypsy/Romany tradition.

Where families travel, schooling is interrupted and this is particularly marked in the 'Occupational' sector. Fairground and Circus families travel from site to site throughout a season which can run from March to November, and movement may be on a weekly basis, so that their main contact with schools is during the short over-wintering period. Bargee families are mobile throughout the year, with only short stops to load and unload cargo[1].

Traditional responses to this challenge are very variable across Europe, but have included outreach initiatives (mobile schools, tutor visits to families and sites, and other ways of 'bringing the teacher to the community') as well as the development of distance learning packs. Where structured supportive services exist, some progress has been made with the Pre-School and Primary age-groups, although the children still miss out on a full and varied curriculum, and there is an increasing attainment gap as they move through the Primary years. However, in parts of Europe there are no systematic attempts to provide a service, with children left to attend Primary schools where and when they can.

The Secondary age group poses a major challenge, and a recent EFECOT survey identifies this as a fundamental concern even in countries with developed support services (EFECOT, 1999a).
There are two underlying causal threads which become entwined and reinforce each other. First: the older 'children' increasingly see themselves as young adults within the family business and the community, question the value of formal education and react to the ethos of school. Second: it is very difficult for schools, with their subject segmentation and specialized staff, to organize and support responsive and effective distance learning activity, so that children rapidly fall behind their peers.

EFECOT is in essence a network of partners, served by a small core-team based in Brussels. In setting a context for the remainder of this paper it is also important to appreciate that its work is based on pre-suppositions which reject the notion that 'the problem' lies with travelling families who have the responsibility of finding ways to accommodate to schooling systems. Rather the EFECOT mission statement emphasizes the importance of working to complement education systems which were designed for sedentary populations, and to establish new approaches '…. which create positive opportunities for access, which are sensitive to the lifestyles of Travellers, and which encourage the celebration of cultural diversity.' (EFECOT, 1999b) It is from this perspective that EFECOT first began to explore the potential of telematic approaches.

2. EVOLVING APPROACHES TO THE CHALLENGE

Since its inception EFECOT has taken an active role in exploring distance learning as part of a strategic approach to providing education for travelling children. The early text-based work was highly imaginative in its mix of materials and activities, but suffered the now well-documented limitations of traditional methods, including those which Moore has drawn together in his discussion of 'transactional distance'. In particular, Moore highlights the 'psychological and communication space' between tutor and learner and the potential of

[1]Unlike most travelling communities, where the children normally stay with the family, the Bargee families of northern Europe have accepted that their children need to be educated in a residential setting, and have formally agreed 'late entry' into the education system; with supported distance learning 'on board' between the ages of 4 and 6.

narrowing the gap by **increasing dialogue** and taking **more flexible approaches to learning-programme structure.** (Moore M.G., 1993)

The EFECOT move towards telematics-based approaches can be seen as a direct response to targets which involved addressing tutor/learner distance by working at these two dimensions, as well as making good use of the potential strengths of multimedia assets and interactivity. There have been four major initiatives (TOPILOT, FLEX, E-DSRR and Trapeze) and latterly, as wireless communication has become more secure, a developing focus on collaborative learning.

Before describing the approaches and experiences of each project, it will be helpful to outline briefly the underlying pedagogy which informs the work of EFECOT, and some of the issues which this raises; also to look, again briefly, at the developing use of wireless technology. Hopefully these introductory notes will be a useful backcloth to understanding evolution within and across the projects; an evolution which has been dependant on the art of the (technologically) possible and on increasing understanding of applied pedagogical principles.

2.1. EFECOT: An underlying pedagogy

EFECOT is supported by a 'Pedagogical Advisory Committee', which draws expertise from a range of specialist institutions, and which has nailed it's colours quite firmly to the mast of the cognitive and constructivist perspectives. These have been fairly well summarized by Elen under the headings of *active orientation, goal orientation,* (learner) *construction of meaning, cumulative processes* and *self-regulation.* (Elen J., 1996) These perspectives have, of course, to be applied to working with Traveller children, and to working at a distance. The goals are clear but application raises important issues for designers and (teacher) practitioners.

Perhaps first and foremost comes the challenge of creating a necessarily *active orientation* to learning. In this context learning involves 'compulsory schoolwork' which raises questions about intrinsic (goal orientated) and extrinsic motivation. Leading on from this comes the related target of working towards the ideal of the *autonomous learner*; or in practice perhaps shifting the balance of the teacher/pupil relationship towards learner control.

Distance is a major consideration, and raises important questions about preparing learners and their families, on-going development, and the supportive/mentoring role of **parents** (and/or other members of the family or wider community). Parental oversight is crucial, particularly at the early learning stage, and Bruner's metaphor of 'scaffolding' (used here in a broad sense) is a useful reminder of the part parents can play in encouraging movement towards learner control.

The constructivist perspective has also found expression in the major shift in distance education generally, to embrace collaborative learning, and this is also reflected in EFECOT initiatives. Here the challenge is not just 'shared schoolwork' but the development of contextualized community-based approaches which can (hopefully) motivate older children by drawing on their priorities and realities within what Moll and Greenburg, building on the work of Vygotsky, have referred to as 'zones of possibility' (Moll L.C. and Greenburg J.B., 1990)

2.2. Developing use of wireless technology within EFECOT initiatives

Broadly speaking EFECOT has explored two major strands of wireless technology, mobile telephony and satellite, as well as being involved with enhanced digital radio communication. The first efforts were planned in 1995 (for TOPILOT), and were focused on the use of GSM data transmission which would allow narrowband monitoring and management of disc-based multi-media learner materials and some tutor/learner messaging. Given the limitations of GSM bandwidth, this was an imaginative approach, and proved fairly successful (see below). However, the reliance on (necessarily specially designed) discs was a restraint, and the subsequent FLEX project is using satellite to broadcast a range of server-based multimedia materials. The GSM route is still used for monitoring learner progress and to support a full email-based messaging facility.

One weakness in these approaches is the reliance on GSM networks and their coverage. Although this is improving, as are options for bandwidth capacity, the necessary infrastructure costs mean that investment in areas of lower population density is uncertain. Given EFECOT's travelling target population this is a fundamental issue, and the problems were highlighted in part of the TOPILOT acceptance trials.[2] This has been the impetus for an exploration of other options. First: through the E-DSRR project which used enhanced digital radio communication for (line of sight) broadband communication over a 50 kilometre radius, with automatic switching to satellite if connection signals were not immediately established. Second: 'Trapeze' which essentially involves a broadband intranet concept using satellite to link tutors and learners.

3. THE PROJECTS

3.1. TOPILOT: First steps in the use of I.C.T. with travelling children

TOPILOT was set up within the Telematics Applications Programme of the EU Fourth Framework and ran from January 1996 to November 1998. It involved 22 partners from four countries, with technical expertise provided by Expertisecentrum voor Digitale Media (EDM) based at Limburg University Centre, working with Philips Interactive Media.

The development of a pedagogical approach, as well as specific ideas for the multimedia materials, was undertaken with practicing teachers from a number of schools and services working with Traveller children, and these efforts were supported by two Dutch organizations: the Centrum voor Innovatie van Opleidingen (CINOP) and Educaplan[3].

As noted above the approach involved disc-based materials and these were designed for the CD-i platform (which at the time offered a potentially popular, robust and transparent environment). Three discs were produced, one aimed at young learners in the 4-6 age grouping, and two aimed at the 14+ grouping which contained relevant, vocationally-orientated, materials supplemented by text-based work books. [4]

[2] The trials took place in four European countries, and were mainly successful. However coverage problems in Scotland caused major difficulties, and this part of the trial was effectively abandoned.
[3] part of the National Institute for Curriculum Development.(SLO)
[4] The topic for the discs, 'Electricity' and 'Business Skills', were selected after community-based surveys aimed at establishing vocational interests and priorities.

Figure 1: a menu screen from one of the TOPILOT discs

The final disc contents were designed as a series of 'units' and were put together by EDM. They used a range of multimedia assets and made good use of the interactive platform and features such as full-screen video. However the unique feature of the discs was that each contained a 'control and communication package'. This was able (a) to use the CD-i memory to store information about work done with the materials, and the results of specific exercises, and (b) to initiate GSM-based data communication between the (CD-i) learner workstation and a remote server based at Limburg University. The communication process was initiated automatically each time a learner logged on or off. This enabled monitoring information and short, pre-set, student-to-teacher messages to be uploaded to a specially designed database, and tutor-to-learner messages to be downloaded together with management instructions (see below).

Tutors were able to access the database to review student progress through a series of Web pages, and could also use the same pages to set up messages to be sent to their learners when the communication link was next activated. They could also use this interface to set up management instructions which would open up new units of work on the discs, and in the case of 'Rollerball' (the disc designed for the young learners), to change the levels of difficulty of the exercises.[5]

The other special design feature of 'Rollerball' was a separate 'Parent Programme', located on the same disc, which allowed parents to monitor some aspects of progress as well as giving information on the objectives and contents of each unit, and ideas for practical activities to reinforce learning.

[5] Further details of the system and platform are available from the project's technical report (Lenaerts T. and Daems B., 1998)

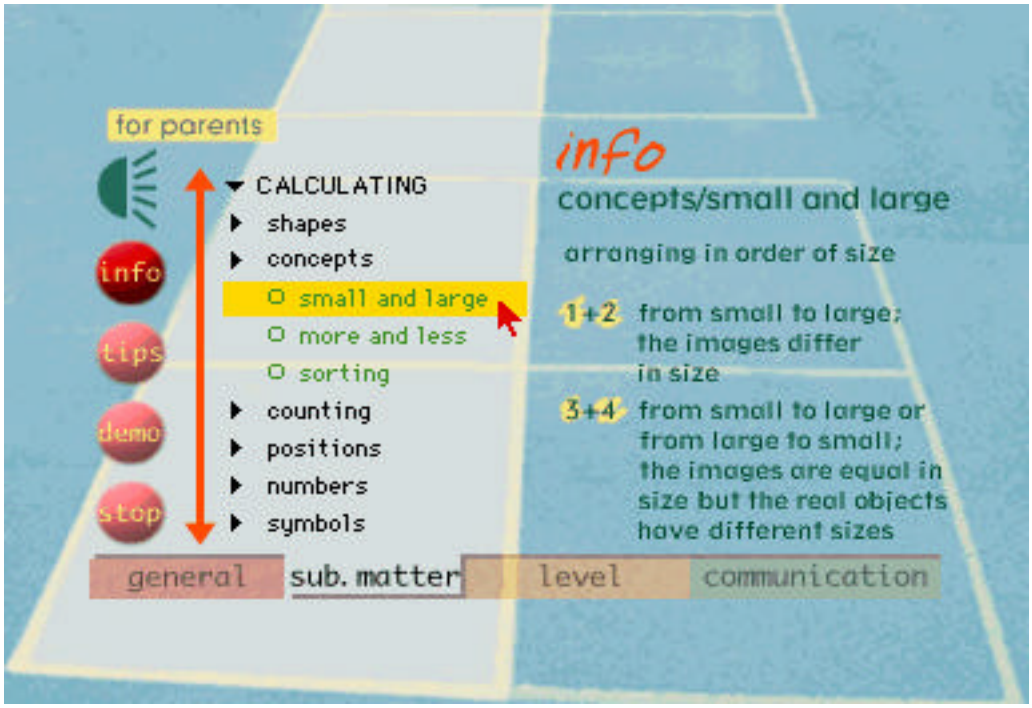

Figure 2: Part of the parent menu within the TOPILOT environment

Looking at the underlying pedagogical features of the approach as a simplified model, it is possible to highlight a number of key features.

- Experienced teachers were involved throughout the design process, and could select a variety of approaches, with a mixture of interactive (disc-based), and traditional, materials and activities.

- Materials were developed as units and, wherever possible within the logic of design, learners could choose their own routes.

- The discs were designed with in-built corrective and supportive feedback, which allowed learners to progress within the materials open to them at any particular time.

- Supported learning was provided in a one-to-one tutor/learner environment, with parental involvement for the younger learners.

- Tutors were able to monitor progress at a distance via a WWW interface. They could also control the materials by opening new units and changing levels of difficulty.

- Tutors could also send simple feedback and short supportive messages.

- Learners were able to select and send short, pre-set, messages to their tutors.

- The system was asynchronous, allowing learners and tutors to choose convenient times to interact with the system

The project trials reinforced the growing body of evidence that well-designed interactive multimedia courseware can enhance motivation, as well as enabling improvements in

understanding within a self-paced, supportive, environment. They also gave strong support to Moore's suggestions that responsive tailoring of the learning programme, and (in this case very basic) tutor/learner dialogue, can have a positive impact within the distance learning context. (Marks K. and Pullin R. 1998). The integrated parent programme was also a successful innovation and raised a number of important issues which are discussed in the final section of this paper.

However, the major constraint of the TOPILOT approach was the necessarily heavy investment in professional expertise to develop a relatively limited amount of material for the CD-i discs, and there were also frustrations with the limited messaging facilities, as well as the coverage problems noted above.[6] These considerations set the context for EFECOT involvement with two subsequent projects, FLEX and E-DSRR.

3.2. FLEX: A library concept

FLEX was initiated in late 1998, as a two year project within the special EU Educational Multimedia Taskforce programme. It is, again, co-ordinated by EFECOT and many of the partners have been involved with TOPILOT. As an interdisciplinary theory/practice venture, it has set out to explore the systematic application of constructivist principles, with specialist input from the Centre for Instructional Psychology and Technology (CIP&T) at the Catholic University of Leuven. From this basis the project has worked to develop the concept of 'learning blocks', and related standards, as the foundation for a library of materials. Details of the applied theory are outlined in a report from the Centre (Utsi S. et al, 1999)

The major objective, as the project title indicates, is to enhance flexibility and to encourage the cost-effective development, and use, of a range of server-based materials. In essence the library is a specially designed database, with a Web-site interface. Tutors can use the interface to draw on and tailor (edit) units of material in order to build up learning modules within packages which are then broadcast to their learners, along with instructions and messages, via a one-way broadband satellite link.[7] Data is received via a mediaspot device, and can then be downloaded to the learner's laptop.

Tutors can also add to the library by designing their own units, which can remain private or become publicly available to colleagues. Materials can have a multimedia format, and/or can be designed within the framework of Microsoft 'Office' software. There are also special template tools to create options like matching and multi-choice exercises. Any materials can be located on the database, and tutors are encouraged to design holistic packages which allow choice of

[6] The decision of Philips to withdraw from the CD-i market to focus on DVD was also, of course, a constraint for exploitation.
[7] DVB formatting and the uplink are co-ordinated by SAIT-Videohouse (BE) using the EUTELSTAT system.

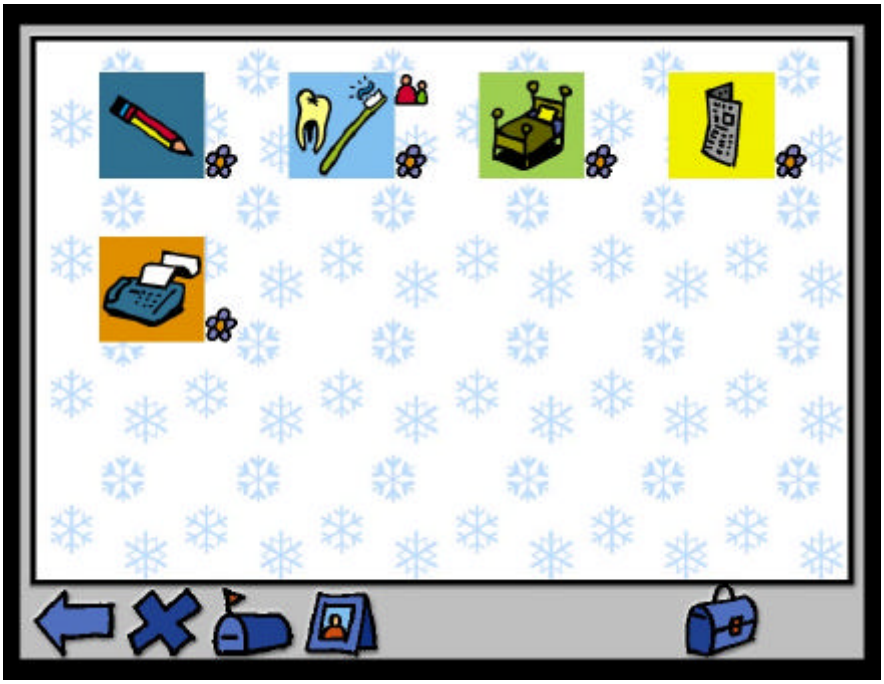

Figure 3: A FLEX menu screen with five learning modules open to the learner

learning routes wherever possible, and which make creative use of activities away from the computer interface. Another key feature is the use of two mechanisms which allow tutors to monitor progress through a GSM-based return link to the database.

The first of these is the option of setting up exercises using the templates, as these will automatically allow for the storing and sending of results when the learner next activates communication. The second is the use of 'data collection' units, which the tutor can add to a package, which request learners to make an input (e.g. a text file), which is again sent to the database when communication is activated. Learners can also create and send messages, and parents can be involved through packages especially designed for them, or through the same messaging facilities.[8]

Simplifying the main features to a model, the evolution from TOPILOT is clear.

- There is the potential to drawn on, tailor, and design a broader range of materials
- Monitoring and content management features are retained and extended, and the constraints are removed from tutor/learner/parent messaging.
- There is here a systematic attempt to apply learning theory, rather than working within broad principles.
- This is again a one-to-one tutor/learner approach, which encourages parental involvement, and which has an asynchronous design.

[8] As yet there is no publically available detailed technical description of the system. However, relevant information can be obtained via EFECOT. The contact email address is given at the end of this article.

At the time of writing, the early trials (which are focused on ODL training for tutors) are just beginning. However, if the technology proves robust and user-friendly there is little doubt that, in Moore's terms, 'transactional distance' will be reduced

3.3. E-DSRR: A stronger focus on communication

The E-DSRR project was also initiated in 1998 and was coordinated by a Greek company, 'Marac Electronics', with EFECOT acting as a validation partner and taking responsibility for evaluation. As with TOPILOT, the project was located in the Fourth Framework Telematics Applications Programme, but with a focus on both education and healthcare. Technical expertise was provided by Marac Electronics, Media Mobil (a German Company) and the Bremen Institute of Industrial Technology and Applied Work Science (BIBA).

Figure 4: The E-DSRR trial learner environment

The project offered the opportunity to use two-way broadband communication using an enhanced digital radio system with automatic switching to satellite if coverage was not adequate.[9] From the EFECOT perspective the two-way linkage was attractive in terms of sharing and exchanging multimedia materials, but even more as a platform for exploring on-line interaction. Initial 'milestone' trials were held in Rotterdam in March 1999, and these involved both fairground and bargee children. The trials successfully demonstrated a powerful tutor/learner interaction with a split screen environment developed by BIBA allowing simultaneous video conferencing and a shared multimedia application. Although the trials were in themselves extremely successful (Marks K, 1999), the project was

[9] The trial configuration was designed to support transmission at 64 and 128 kps. Satellite backup was provided by the ACTS THOMAS project using INMARSAT B systems. Further technical information can be found in a user/technical specification document: (Muffler K., Panagiotarakis N. and Marks K., 1998)

discontinued, [10] so that possibilities relating to parental involvement and collaborative learner/learner communication were not explored.

From the **modelling perspective** the project complemented the FLEX approach (with its primary focus on flexible materials, monitored and managed at a distance) by allowing a major focus on synchronous communication and on-line activity. In a sense it was a glimpse of future possibilities for dialogue, and proved fascinating. The young learners (4-6 year olds) adapted immediately and effortlessly to the split screen and video-conferencing environment, and the tutors felt that the experience had clearly demonstrated new and exciting dimensions of interactivity.

3.4. Trapeze: On-line virtual classrooms and collaborative working

Trapeze is a one-year project which started in November 1999, and which has been sponsored by the European Space Agency (ESA). EFECOT is the coordinating agency with partners based in four countries. Satellite expertise is provided by the Italian company 'Telespazio'. Participating tutors are based in the Netherlands and the UK, and the development of the learning environment, and associated interactive materials, is supported by a Belgian company '@iT' as well as the audio visual section of the Catholic University of Leuven.

The 'VSAT'-based[11] system being developed by Telespazio will allow broadband intranet communication for identified groups, as well as giving access to selected Websites via a proxy server. For the initial system trials each learner will have a dedicated uplink channel with either 38.4 or 76.8 kps capacity.[12]

The approaches currently being developed by tutors will be based on a simplified Web-controlled library model (as with FLEX), but the intention is to use part of the materials in fixed on-line virtual classroom sessions with both text and audio chat facilities.[13] The young learners (7-13 year olds) will also be encouraged to work asynchronously, independent of 'classes', both on individual tasks and group-based collaborative projects.

After a preparatory phase which will involve both children and parents, trials will take place in May 2000, with four tutors each supporting a group of five learners. Dutch tutors will focus on the 10-13 age group, while UK tutors will explore work with 7-10 year olds.
Again from the simplified modelling perspective this system offers an interesting evolution.

- The library concept is maintained and can be used to download materials to cache or hard disc.

- Both asynchronous and synchronous options can be utilized.

[10] The project auditors raised concerns about exploitation and about some of the technical features of the system.
[11] Very Small Aperture Terminal
[12] The 'FULLSAT' system which is being developed will offer point-to-point and multipoint options via the EUTELSAT constellation. Further information about the platform and system can be obtained via EFECOT. For contact details see the end of the article.
[13] 'Costs' are related to quantity of data transmitted rather than time, making such sessions viable and attractive.

- Collaborative working can be used to supplement individual tasks, both in the 'classroom' and via projects.

- There is a broadband route for returning completed work, which can now include more ambitious options

- Monitoring and management remains strong, allowing for the tailoring of resources.

- Messaging is extended to include audio and text-based chat facilities.

- There is access to selected web-sites.

Collaborative options also raise interesting questions for EFECOT about the notion of transactional distance; a concept conceived for the tutor/learner relationship. Perhaps the picture of a 'space between' needs to be replaced by the notion of a 'space around' each individual learner, with a separate sense of space surrounding the tutor. In so far as Moore seeks to highlight the sense of isolation of the learner (and the tutor), the metaphor remains useful, with mediated collaborative links potentially playing an important part in 'reducing distance' as well as contributing directly to the construction of meanings.

4. SOME ISSUES FOR THE FUTURE

In a sense the initiatives described in this article are not new or startling. They draw together features of existing developments in work with both children and adult learners. What is distinctive is the attempt to develop supported distance learning for children, which makes good use of interactive materials, but within a context dependant on non-terrestrial communication. Just as Sommerlad and her colleagues at the Tavistock Institute have described negotiated pathways within telematics projects (Sommerlad et al.,1995), so it is possible to trace a trajectory of user needs, theory, practice and technology across the projects described in the article. Stakeholders have negotiated within the art of the possible, and the possible has changed fairly rapidly. This has enabled EFECOT to explore different approaches but most activity has also involved 'leading-edge' technological innovation. This has been both exciting and frustrating, but the signs are that robust systems will become available in the medium term (3-5 years). A critical factor for EFECOT is the commercial viability of two-way, broad-band, satellite communication for sparsely populated areas, to complement developments in third generation (3G) mobile telephony. As communication systems move forward within a unified UMTS[14] framework, switching between broadband GSM and satellite may prove to be an important option (c.f. the switching concept explored in the E-DSRR project). Pricing structures and features like bandwidth capacity on demand will also, as noted by Tiffin and Rasajingham, be critical (Tiffin J. and Rajasingham L., 1995).

From the teaching/learning perspective EFECOT is gaining from experience and exploring a whole range of issues. Are there optimal mediated learning environments? Could virtual school communities replace (currently ineffective) attempts to provide Secondary schooling for travelling children? How can support tutors and institutions restructure roles and responsibilities for a telematics environment? Who will produce multimedia materials -- is

[14]Universal Mobile Telecommunication System

there a balance to be struck between teachers and specialist designers? What patterns of communication and materials exchange will prove cost-effective? How can national and regional education authorities be persuaded of the need to invest in equipment and training? The list grows.

There are, of course, some important overlaps with the debate about ICT within the classroom. The distinctive feature here is the home context, with the mediated role of the teacher and the central place of the ICT interface in the 'schooling' and education of the learner. It is here that the role of the parent is emerging as a significant issue.

The role of parents

Generally speaking the travelling communities value education, and in particular the development of literacy, numeracy and relevant practical skills. There are, however, tensions about whether this platform is enough and how to build on it. Should children be encouraged to think about formal qualifications, wider opportunities and new horizons, or should they be offered something closer to a preparation for a full life which emphasizes community priorities and values? As children become part of the business at an early age, there is also an informed family-based 'apprenticeship' aspect to their wider education which is largely unrecognized by school systems.

Within this context there is strong parental support for Primary education, and a concern that older children should be able to choose appropriate routes. Given the integrated family/business nature of the Traveller lifestyle the role of the parent in the distance learning setting is clearly critical and needs to be based on an understanding of these priorities. This implies a role which may need to change as the child develops, and which also encourages a movement towards autonomy so that the child has the potential to move beyond levels which parents can realistically support.

For the youngest learners, Pre-school and early Primary, parents should ideally have an integral role. They need to have an overview of learning objectives set for their children, and an understanding of the methods which underpin the associated pattern of distance learning activity, so that they can work with tutors to reinforce the process. In particular, they need to have enough understanding to guide the balance between the computer environment and other tasks, including those designed to reinforce the enactive, iconic and symbolic cycle (Bruner J.S., 1968). With training and support there is also the potential for mentoring roles which can involve parents more directly in the facilitation of learning.

Such mentoring developments are relatively ambitious (see below), and depend very much on individual circumstances. However research in the field of inner-city literacies has drawn attention to the way in which most parents involve younger children in aspects of contextualized learning, often without being aware of their educational role. (See, for example, Weinberger J.,1996). A more informed view of such processes, including those involving siblings and friends 'at play', could be valuable in designing mentoring approaches which include, and build on, the home environment and are consistent with the realities of family life.

As children develop through the Primary years, parental mentoring may need to give way to a more generally supportive role. In this respect the 'ORIM' framework also offers some

valuable insights. Again conceived within the field of literacy, the framework highlights ways in which parents (and other adults) can take the initiative in providing **o**pportunities for learning in the home context, and can **r**ecognize and celebrate children's achievement by, for example, displaying work or giving praise. They can also encourage and support learning by **i**nteractivity, working with their children, and, finally, they can seek to provide a **m**odel for the learning process (Hannon P., 1995). This framework was developed as a way of stimulating learning in the home to complement schooling in deprived inner-city areas, but clearly has relevance. The key features are the encouragement of an active and conscious approach to the support of the learning process, and modelling which can be used as a preparation for increasing learner control.

At the Secondary stage the parental role may simply become supportive if the learner follows a traditional Secondary curriculum route. However, there are also exciting opportunities to explore an apprenticeship model, and to celebrate the wealth of skills and experiences which characterize the communities.

These remain areas to be explored, and each requires a different level of partnership with tutors. However, experience from the TOPILOT project (the only project which has completed the evaluation cycle) indicates that parental involvement will also depend crucially on three inter-dependant factors. These are **confidence, competence, and capacity.**

Feedback from TOPILOT indicated that some parents were far more **confident** than others in working with tutors to take on a supportive role. This had nothing to do with the use of ICT (the parent programme and messaging), which was quickly mastered. Rather, some parents clearly took a very positive stance, and were keen to be involved with their children and to liaise with tutors. These parents developed the pattern of recommended activities, and kept themselves informed about progress. Others, equally committed to the project, were more reticent about a close involvement, preferring a more passive role and often only communicating with tutors to draw attention to problems. In some instances this related to weakness in parental literacy skills,[15] and it is interesting that Weinberger's research was based in inner-city areas where confidence and parental literacy levels were also important factors.

Informed and developing **competence** is, of course, a related issue which should underpin any attempt to strengthen the confidence and involvement of Traveller parents. Feedback from the TOPILOT trials showed some remarkable parental insights about what the children were learning, how they were learning and the uses of different media. These insights clearly informed the support which the parents were offering. Although this feedback was, again, variable, it was encouraging to see the potential here, as is the more general evidence of unrecognized home learning identified by Weinberger, and the success of initiatives like 'Family Literacy' which set out to reinforce and develop the parental role (see, for example, Brooks G. et al, 1996).

On the other hand, although TOPILOT suggested some encouraging potential, the project also raised considerations of **capacity**. Part of the parental feedback drew attention to the busy atmosphere of the trailer environment (the base for home and business) and the capacity of parents to offer commitment and adequate learning support. Some parents found the

[15] It needs to be appreciated that these are to some extent oral cultures, and that the parental generation had often missed out on schooling themselves.

space to engage with the process and welcomed the opportunity. Others were clearly relieved to have what they perceived as a screen-based package to lead and 'supervise' their children's work, and saw this as an attractive time-saving alternative to setting up and facilitating normal work-pack activities.

Current practice builds on traditional approaches developed with travelling families over some years. Even within the projects described in this paper, expertise remains firmly in tutorial hands, with encouragement for parents to reinforce and support the process. There are important questions here about a shift in the tutor-parent relationship, with tutors focusing more attention on preparing and providing on-going (mediated) support for parents, and creating a partnership-based approach to the teaching role. Such an enhanced role also has the potential to strengthen the modelling dimension (c.f. Hannon, above).

Issues of confidence, competence and capacity may prove difficult to disentangle. On the other hand the pursuit (of perhaps varying levels of) parental involvement remains an important target in the context of seeking effective mediated environments. As noted above, the balance of learner/parent/tutor relationships needs to change during the Primary years, and there is increasing scope for peer-collaborative ventures. Nevertheless the immediacy of parental role remains significant. These are clearly areas where more lessons need to be learned in order to develop grounded theory which can, in turn, inform user needs analysis, pedagogical approaches, and the design of environments for those involved with supporting children, at a distance, in the home environment.

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For further technical information about FLEX and Trapeze please contact Kasper Peters at EFECOT. Email: kasper.peters@efecot.net

Relevant Websites

The EFECOT website is at http://www.efecot.net and contains further information about FLEX, TOPILOT and Trapeze

Further information about TOPILOT is available at http://edm-topilot.luc.ac.be/

Further information about Trapeze is available via the ESA site at http://estec.esa.nl/artes3/projects

Information about the E-DSRR project is available at http://www.biotrast.gr/e-dsrr/Default.htm