

Dissolving Boundaries: Lessons from a cross border ICT project.

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The Project

This paper examines the learning from a project using ICT to link schools on either side of the Irish border. The project, called *Dissolving Boundaries through Technology in Education* was set up in November 1999 and is due to complete its first phase of operations in August 2001.

This project arose from discussions between the British Prime Minister Mr Tony Blair, and the Republic of Ireland's, Taoiseach Mr Bertie Ahern, as part of the peace process. These initial discussions were followed by examination of the possibilities, and exploration of existing projects. The result was a major cross-border project managed by the University of Ulster and the National University of Ireland, Maynooth, and funded by the Department of Education Northern Ireland, and the Department of Education and Science, Dell computers and the telecommunications company Eircom.

The project has three main aims:

- It aims to enhance contact between young people in schools North and South of the border with a view to developing mutual understanding.
- The second aim of the project is to promote meaningful use of Information Communication Technology (ICT) in schools, with a view to increasing ICT skills and understanding.
- Thirdly the project aims to support learning of curricular topics through authentic and relevant collaborative work.

52 schools were selected to participate in the project. These schools included a mixture of primary and second level schools. The selection ensured a geographical spread and included some schools in socially disadvantaged areas, and some schools with little experience of ICT. The key criterion used for selection was the enthusiasm of the school and its determination to grasp the opportunity.

These 52 schools were each given 4 computers for use with this project. They were also given videoconferencing equipment, either a video telephone or a PC based video conferencing system. The project then provided a dedicated ISDN line, an ISP account and accounts on the NINE conferencing system. The participating teachers were provided with technical training in the use of the equipment, and then brought together with the teachers from the other schools to plan collaborative projects. The projects normally involved two schools although included three. Each project agreed a curricular area in which it would work, agreed the topic and tone of the activity, and planned how the work would be organised.

Following these initial meetings, the students in the schools began to make contact through the computer conferencing system. Most of the early contacts were social, but these were gradually guided towards a focus on the project topic. These electronic discussions were supported by videoconference meetings with the partner schools. As the projects matured, the teachers were given additional training in web authoring, and encouraged to guide their collaborative work towards publication on a web site.

Methodology

This paper explores the progress of the Dissolving Boundaries project, and examines the impact of the project on mutual understanding and on learning. The paper is based on quantitative records collected by the project team and a qualitative analysis by an external evaluator. This external evaluation, conducted in early 2001 included visits to participating schools, interviews with teachers and students, and observation of project activities.

Operation

In general terms the project operated well. All of the selected schools continued to work on the project, despite a very disrupted school year which featured floods, heavy snowfalls, and in some cases teacher industrial action. There were very large numbers of messages posted on the Northern Ireland Network for Education, (NINE) conferencing site, all schools used videoconferencing, and the majority produced a web site of their work.

In terms of the topics chosen for joint work, schools were left fairly free to decide what they thought would work best and this was seen by the project team as a key element in giving teachers ownership of the project. In practice, it has been the subjects of geography, history, languages that have most often formed the core of joint work, frequently driven by the collection and exchange of data. Some projects have, however, been done in technology, and in careers while others have drawn on art and music.

Videoconferencing

The use of videoconferencing was central to the project. The technology was viewed with excitement by practically all of the students. It seemed to many of them the stuff of 'science fiction', and was considered to be the "*highlight*" from the student's point of view. Students commented that "*I never thought it was real*", and "*it sounded like something from 20 years ahead.*" In some schools the videoconferencing was the defining characteristic of the project, and in some cases the project was referred to as "*the videoconferencing project*".

For the students the videoconferencing enhanced their sense of knowing the students in the partner school, which the synchronous nature of the contact provided an urgency and a deadline for project work. The synchronous nature of videoconferencing also presented time-tabling difficulties, and it was used on a less frequent basis than the electronic conferencing. While one school used the videoconferencing on a weekly basis, most used it a few times each term.

Some students reported initial apprehension about the videoconferencing. This seemed to arise particularly in the case of boys from single sex schools, who became self-conscious when meeting girls on-screen!

Electronic conferencing

Electronic conferencing was provided through the NINE conferencing system. While this was familiar to many teachers in Northern Ireland, it was completely new to most of the Southern schools. Following initial training the number of messages on the site grew rapidly, and exceeded 2,000 in the first three months of the project.

It was used initially by most schools to post up introductory information about the students and their schools, and to send simple messages. But after the flurry of activity at the beginning of the project, the number of messages posted began to die down.

The reactions to the use of the NINE web site were varied. For some schools the speed of access of the site was a barrier to use. Others found the requirement to be on-line when posting messages a barrier, both because of the cost of on-line time, and because of the location of the online machines within the school. Perhaps more significantly, the nature of the messages changed as the projects developed. The initial messages were mainly greetings and were mainly from individual students. The later messages carried more substantial content, and were more frequently the work of a group of students, sometimes an entire class, which may explain the smaller number.

The students also had some suggestions for improvements to the site. They thought a chat facility would be good, where students could carry on conversations in real time. This could also provide a fallback if the videoconferencing session ran into technical problems.

Web publication

The project team encouraged schools to develop their collaborative work into a website. The publication of material on the web provided a pressure to bring projects to a complete form, and in some cases to develop the material to a sufficient state for public viewing. For many of the schools the web publication was a difficult task. The schools did not always have a website, or know how to manage or update it.

Outcomes

Enhanced understanding

Few of the pupils had had previous contact with schools on the other side of the border and the pre conceptions about people from the North were quite strong. Some of the students made remarks about the difference in accents; expressed fear about meeting student from the North or made more overtly political comments.

There was some evidence to suggest a change in attitudes as the project progressed. Despite the relatively limited contact between the groups, students expressed a sense of empathy with their partners in comments such as: *“They are not aliens”, “they are just like us”, “ we’re their future so it’s a good thing that we start dissolving boundaries”, and “you begin to realise they are all human”*. One teacher remarked *‘there seems to be a lot of tolerance across the board, there are no marked differences, the children are focusing on what the similarities are.’*

The students reported feeling that their relationship was still relatively new. Many expressed a desire to meet the partners in person, and/or to continue the virtual linkages for a further year. The students were less enthusiastic about establishing a link with another school, and said they were just "getting to know" their existing partners.

ICT skills

There was some evidence that the project had enhanced the ICT skills of both teachers and students. In many schools the teacher involved in this project was not the technology specialist, and initially some of the teachers were unfamiliar even with email and web browsing. Engagement with the project provided both training and a structured context in which the skills were applied, and has resulted in a noticeable increase in teacher ICT skills.

In some of the schools the technology was used in a very hands-on manner by the students. In these cases there is also some evidence that the students have developed improved ICT skills. In addition for both teachers and students there was an increase in technology confidence, with many reporting that the technology was *“easier than expected”*.

Curricular work

It is difficult to determine objectively if the project has resulted in increased learning of curricular subjects. Teachers reports focused on motivation rather than learning gains. All of the teachers interviewed remarked on the enthusiasm and excitement the project has generated among the students, in particular around those activities involving videoconferencing. One teacher said:

“I would see some of those students I would have for this and I would have them also for a normal class of English once a week, Macbeth or something. For this they’re are totally different, more motivated, they’ll do the work, they’ll do it without me harassing them, they’re always keen to go into the computer room...”

The students themselves spoke of the project as being *“fun”* and *“different”*. One student summed it up with the words, *“you’re learning at the same time despite the fact that you don’t even realise it”*

Issues

Barriers

Schools reported a series of obstacles to engagement in this project. One of the most frequently reported barrier was the timetable. Particularly in post primary schools, which tend to run on a rigid timetable, finding time where both partner schools could take part in a video conference was a challenge. In many cases the schools responded by holding videoconferences outside of school hours, a solution that solves the problem but may not be sustainable in the long term.

Asynchronous contact through computer conferencing was less problematic, but still required the availability of the co-operating teacher, the students and the computer equipment at the same time. In those schools where the project computers were incorporated into existing computer rooms, even access to the technology occasionally caused problems as other classes were scheduled for access to the room.

More fundamentally, the pressure of examinations in post primary schools (and the 11+ examination in Northern primary schools) made it difficult for schools to devote time to a project which as perceived as irrelevant to the examination. Although the content of the project was often directly related to the school curriculum, it is clear that teachers did not perceive the project as appropriate for exam classes. This issue of “curriculum complementarity” is not unique to this project as it arises with many open-ended applications of ICT. Nevertheless is important to note that sustained work of this type will be facilitated by some provision for accreditation of the work done.

Whole class or small group?

Schools varied in the way they used the videoconferencing. Some involved the entire class in the conference, while others used the video link with small groups. While in general the experience was that the dialogue worked better with a relatively small number of participants at each end, this often requires that the teacher develop appropriate management strategies.

Similar classroom management issues arose for the computer conferencing. During the project some teachers developed such strategies. One primary school teacher, for example, organised her class so that 8 children were word-processing emails on the 4 PCs, another 8 children were drawing pictures of their local town, another 8 were involved in model making and the final 8 were reviewing a book that the school and its partner were reading together. The children spent about 15 minutes on each task and then moved to a different activity during the course of an hour's lesson.

Public space versus private space

The computer conferencing system was quite a public forum for discussion, as teachers, other project schools and the project team could look in a read the contributions. Both teachers and students were aware of the monitoring of their

comments. Some students referred to the site as being “*too formal*” and “*too public*”. Even some of the teachers were ambivalent about the fact that the site is monitored referring jokingly to “*the ‘eye of God’ looking in*”.

There are examples of both teachers and students bypassing the NINE system to allow less formal communication. Teachers and older students tended to use personal email to communicate in private.

In some schools the teachers actively managed the input to the conferencing site by their students, perhaps in an attempt to project the best image of their school. Students reported resenting such management and wished they could communicate more freely. In general it would appear that in those schools which concentrated on getting the latter items correct, there was not as much spontaneous communication between the students as there were in those situations where the focus was on communication and the errors were ignored.

Where teachers became very concerned with correctness then the work for the teacher is increased. One teacher reported that: “*communicating through the student café on the net, ..that took one whole day ..I was organising the groups to send back their replies and it did absorb a lot of time . We agreed with the people in the North that it was a great way of communicating, but that we didn’t have the time.*”

This issue is a core question for participating teachers who must decide whether the focus should be on the communication and through this dissolving of the boundaries of preconception and prejudice, or alternatively the presentation a good quality product correct in every way? In parallel the teachers strive to find a balance between teaching the art of writing correct English and maintaining the spontaneity of the communication.

VC as performance

As with the computer conferencing, the schools adopted different approaches to the videoconferencing. Some of the schools used the videoconferencing as a performance medium for the students to play musical instruments or read poems in a formal manner, in front of their whole class and the whole class of their partner school. This was nerve wracking for those students who were performing, and consequently, they were very apprehensive about their performance. One student spoke of having “*butterflies in my stomach*”

Other schools had small groups of 5 or 6 students, which either chatted informally or presented work on their project. This put less pressure on the students and they appeared to enjoy it better, forgetting their self-consciousness in the face of the greater need to communicate. One said that “*when you can see what someone looks like ,then you can relate to them and you can talk more freely*”.

As with the computer conferencing, this can be seen as a balance between the quality of the presentation and the authenticity of the communication.

Collaboration

The concept of collaborative work deserves some further exploration. When it works well collaboration involves ideas evolving in discussion with all parties making suggestions, debating ideas, and finally moving towards an outcome which is better in some way than the work any one party would have produced alone.

In some of the projects there was clear collaboration and mutual learning, both between students and between teachers. As one teacher put it:

“Collaboration between teachers and children mean we are all learning. I have learned a lot from the teachers in (the partner school) and my teaching in enhanced by the teamwork between us. The children see this teamwork in action and it is a great role model for them.”

However there is not much evidence that this level of collaboration was occurring in most projects. There was a lot of collaboration within the local groups observed but not much between groups North and South. In many cases the schools had simply divided the task between them and worked relatively independently on their own parts. In some cases the resulting materials were even published on separate web-sites.

One possible explanation for this pattern was in the themes chosen. In the project the majority of the themes chosen, and the division of content, were more suitable for presentation than collaboration. Indeed one teacher commented that she felt she had *“made a mistake”* in not choosing themes that were more easily collaborated on as when the groups came to discuss the work with each other it was easier with those groups who had studied the same text.

However it must be recognised that stimulating real collaboration is not easy, and many studies have reported a lack of real collaborative writing, even when students were working together in pairs. Given the additional barrier imposed by distance and technology mediated meetings, it is likely that specific structures encouraging collaboration would have to be in place before real collaboration would occur.

Control

It is possible to see the ways teachers handled this project in terms of a spectrum of control levels. In some schools the teacher operated the technology, defined the questions asked, and guided the responses. At the other extreme, in some schools the teachers had appointed pupils to operate the technology and others to act as director on a rolling basis. Various reasons maybe proposed for this, one is that some teachers hold the view that the role of the teacher is to be in control of the learning environment. Another maybe that the teacher running the project was so busy that they did not have the time to help the student learn new tasks such as web page design.

The students sometimes expressed resentment at the level of teacher interference. This student commented that before a videoconferencing session the teacher said *“here are some of the questions you need to ask them. They tell us what to say ‘ ask them about TV programmes, music and what your Mum and Dad do’, we can’t ask them*

our own questions". When asked what this would be, the student replied "*Do you like girls?*". In those schools where the students managed the project, there is evidence to suggest that there was a gain in the student's levels of confidence and self-esteem.

Gender pattern

Some interesting gender patterns appeared in one co-educational school. The girls commented that the boys in the class were more interested the technology and the girls more interested in the subject. When tasks were delegated to the students, it is the boys who took, or were given the more technical tasks such as web page design, scanning, or converting digital photographs for web display. While it is unfair to draw a general conclusion from one school, it is worth noting that gender patterns may emerge if teachers are not proactive in addressing them.

Was the project transformative for the schools involved?

A key part of the strategy for ICT in education in many countries is the idea that ICT could play a catalytic role, facilitating a broader change in education. Hence it is appropriate to explore to what extent this project had the effect of encouraging change in the project schools.

There is some reason to suggest that there is indeed development in the school stimulated by the project, in a number of areas. Firstly, in many of the schools the project computers were installed in a separate location, outside the central computer room. This has provided a resource available for integration activities and project work. This is particularly important in schools where the computer room is heavily time-tabled for skills based classes.

Secondly, in many of the schools the project was working with teachers who were not previously very skilled technically, and were not previously involved with ICT. Thus the project can be seen as providing both ICT training and an appropriate use of ICT to teachers whose interest is in their teaching, as opposed to technology enthusiasts.

There is also evidence in some schools that the equipment will be used by teachers other than those directly involved in Dissolving Boundaries. This suggests that the project has succeeded in offering a worthwhile application of ICT for some teachers who were not previously involved. However, it is likely that the teachers concerned need to have further training in the use of the videoconferencing equipment themselves, otherwise the potential of its use will not be fully realised. There is also an argument to be made for opening this training to other teachers from the school concerned in order to diminish the 'exclusivity' of the equipment within the school community and to foster the ideals of collaboration.

However it would be unfair to suggest that the project had a transformative effect in all schools. It is clear that, despite participating in the same training and briefings, teachers planned and implemented their projects using very different approaches to classroom management, control of content, and control of technology. Similarly, there is some evidence that if a culture of collaboration existed within a school or even within the classroom of an individual teacher, then the project was more likely to

involve collaboration both at local level and at a distance. This lends support to the view that teacher thinking is a more important determinant of the type of project than the technology.