

# **Dissolving Boundaries – supporting transformation in the classroom?**

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## **Acknowledgements**

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The Dissolving Boundaries team would also like to thank most sincerely the teachers whose cooperation was essential in the production of this report.

# **Executive Summary**

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## **1.0 Context**

The academic year 2003-2004 is the fourth year in which the Dissolving Boundaries programme has been a feature in schools in the North and South of Ireland. ([www.dissolvingboundaries.org](http://www.dissolvingboundaries.org)).

The programme uses Information and Communications Technology (ICT) to link teachers and pupils in primary, post-primary and special schools in Northern Ireland and the Republic of Ireland.

The Dissolving Boundaries programme began in 1999 with a total of 52 schools. The programme is managed by the School of Education at the University of Ulster, Coleraine and the Education Department, National University of Ireland at Maynooth.

To date, some 172 schools have taken part and there is a current total of 121 schools involved. Schools are nominated from primary, special and post-primary sectors. Nominations are made by ICT advisors in different Area Boards and Education Centres.

Funding is provided by the Department of Education and Science in Dublin and the Department of Education in Belfast. ISDN videophones are distributed to all participating schools. Connectivity and on-going call costs are paid by Departments of Education on each side of the border. Even though broadband was being installed in the majority of all Northern Ireland schools during the academic year 2003-2004 by the Department of Education, through its agent, C2K, it was agreed that an ISDN line would be retained in all Dissolving Boundaries schools to enable videoconferencing to take place.

## **2.0 Rationale and Aims**

The aim of the Dissolving Boundaries programme is for schools to engage in collaborative, curricular projects using ICT applications such as PowerPoint, Web Page Design, computer conferencing and videoconferencing. Specifically, the project is designed to promote:

- the integration of technology in a meaningful way into curricular work;
- educationally valuable collaborative work in schools;
- cross-national links promoting cultural awareness.

## **3.0 Partnerships**

Each school in Northern Ireland is linked with a partner school in the Republic of Ireland. This is by mutual negotiation based on compatibility in terms of school sector, age of pupils and, in the post-primary sector, subject specialism. The project teachers meet face-to-face initially at a planning conference. They agree on a suitable area of work, based on the curriculum of both schools. This agreement is formalised by the signing an agreement form. These planning conferences take place early in the first school term each year. During the course of the project, this work is developed through ongoing communication between the project teachers.

The pupils and teachers from each partnership also have the opportunity to meet each other face-to-face, and this too is funded by the programme.

## **4.0 The Use of ICT**

Based on their chosen topic, the pupils from both partner schools communicate regularly with each other through asynchronous computer conferencing in NINE, the Northern Ireland Network for Education, which is the Northern Ireland node of the National Grid for Learning. Communication also takes place using videoconferencing, which is supplied by the Dissolving Boundaries programme.

ICT training and on-going technical support is provided by both universities. The training includes:

- use of NINE;
- use of videoconferencing
- PowerPoint;
- Web Page Design

## **5.0 Focus of research**

The present study concentrates on the potential of Dissolving Boundaries to enhance and perhaps transform teaching and learning. The study pays particular attention to elements present in the programme that could facilitate change in the classroom, such as:

- the use of ICT in the classroom
- regular contact between schools in different jurisdictions on the island of Ireland and the implications of this for North South understanding
- the impact of face-to-face meetings of pupils
- teamwork within the classroom and from classroom to classroom of partner schools.

## **6.0 Methodology**

Data was gathered quantitatively by the distribution of questionnaires. These questionnaires were distributed to teachers at an evaluation conference of the Dissolving Boundaries programme, ensuring an overall response rate of 69%.

The same questionnaire was subsequently sent out to Dissolving Boundaries schools, which were not represented at the evaluation conference and this resulted in a reduced overall response rate of 63% of teachers (n= 86). (This represents 71% of Dissolving Boundaries schools as some schools had more than one participating teacher). The respondents consisted of 40 teachers from Northern Ireland, 44 from the Republic of Ireland and 2 non-specific. Responses represented 56 % primary, 25% post-primary and 17%

special schools, 2% not designated. These figures correspond fairly accurately to the ratio of primary, post-primary and special schools.

Interviews were also carried out in a total of 7 schools, north and south of the border, representing three sectors, primary, post-primary and special schools. Both teachers and pupils were interviewed in these schools, with each interview lasting approximately 40 minutes. Views of pupils and teachers were also gathered from postings in the Dissolving Boundaries computer conferencing site hosted by NINE (Northern Ireland Network for Education) which is the Northern Ireland node of the National Grid for Learning.

## 7.0 Schools involved in the programme

There are a total of 121 schools currently working in the Dissolving Boundaries Project. (see appendix one for list of current schools).

This total consists of 58 Phase 3 schools (new cohort), 44 Phase 2 schools and 19 Phase 1 schools.

The schools are broken down in categories as follows:

	<b>Primary</b>	<b>Post Primary</b>	<b>Special</b>
<b>Northern Ireland</b>			
Phase 3 (2003 –2004)	15	8	5
Phase 2 (2002 – 2003)	13	6	2
Phase 1 (2000 – 2002)	8	3	0
<b>Republic of Ireland</b>			
Phase 3 (2003 –2004)	15	10	5
Phase 2 (2002 – 2003)	11	8	4
Phase 1 (2000 – 2002)	8	0	0

In Northern Ireland, the total of 60 schools is divided into sectors as follows:

	<b>Controlled (Mainly Protestant)</b>	<b>Maintained (Mainly Catholic)</b>	<b>Integrated (All religions together)</b>	<b>Irish medium</b>
Primary	16	14	4	2
Post primary	7	6	4	0
Special	7 (not categorised into a sector)			

## **8.0 Summary of Findings**

### **8.1 Teachers' views on use of computer conferencing with pupils**

When asked how beneficial computer conferencing was to their pupils, 46% within the primary sector considered it "very beneficial" and 33% rated it as "beneficial". 15% of post primary teachers rated computer conferencing as "very beneficial" and 55% considered it as "beneficial". The benefit of computer conferencing was not major in the special school sector, with just 20% of teachers regarding it a "beneficial" and none reporting it as "very beneficial".

The impact of computer conferencing was similar in the North and South, with 68% of teachers in the South and 64% of Northern teachers rating it as "beneficial" or "very beneficial".

Whilst the majority of comments about computer conferencing were positive, it was not always successful. A small minority of teachers (10%) became frustrated with unbalanced use of this medium.

### **8.2 Teachers' views on the appropriateness of Nine as a platform for computer conferencing**

Data shows that overall, 78% of schools rated the technology used for computer conferencing as good or very good. More schools in Northern Ireland were satisfied with this medium, with 82% expressing satisfaction in NI and a 72% satisfaction rate in the Republic of Ireland.

Examining data on this technology from a school sector perspective, results show that 50% of post-primary schools considered the computer conferencing technology to be good and 30% of post-primary schools considered it to be very good. In the Primary School sector, 40% rated the technology as good, with 42% rating it as very good. Special schools did not rate this technology as highly, with 53% considering it as good and 6.7% rating it as very good.

### **8.3 The role of video-conferencing**

Fifty percent of teachers considered videoconferencing to be "very beneficial" while 30% regarded it as "beneficial". Of this total of 80% of teachers giving positive feedback on videoconferencing, the greatest impact was noted within the special school sector, where 87% of teachers regarded videoconferencing as "very beneficial" and 13% regarded it as "beneficial".

Within the primary sector 46% of teachers regarded videoconferencing as "very beneficial" with 40% giving it a "beneficial" rating.

Post primary teachers made least use of videoconferencing, partly due to the difficulty of timetabling. 33% of this group considered videoconferencing to be "very beneficial" with 19% regarding it as "beneficial" and 29% giving this medium an "ok" rating.

### **8.4 Development of Pupil ICT skills through involvement in the programme**

55% of teachers reported a "very significant" improvement in pupils' ICT skills, while 32% rated the improvement as "significant". The improvement was most evident in the primary sector, with 65% of teachers there recognising a very significant improvement and 21% seeing a significant improvement. This compares with 45% of post primary teachers reporting a very significant improvement and 45% reporting a significant improvement in ICT skills.

Although the special sector had shown very little enthusiasm for computer conferencing, when it came to measuring pupils' overall ICT skills, teachers

painted a different picture. 40% of teachers reported a very significant improvement and 48% reported a significant improvement in their pupils' ICT skills.

## **8.5 Project impact on North-South Understanding**

23% of teachers overall (n=21) rated the impact of Dissolving Boundaries on North South understanding as very significant. Of this group, 21% (n=8) came from the North, and 27% (n=12) came from the South. 45% (n=39) of teachers considered that Dissolving Boundaries had a significant impact on North South understanding. Of this group, 52% (n=21), came from Northern Ireland and 39% (n=18) came from the Republic.

Of the group of teachers who considered that Dissolving Boundaries had had a significant or very significant impact on North South understanding (n=60) the greatest impact was felt in the primary sector, with 75% of teachers there considering that pupils' understanding of their counterparts across the border was significant or very significant.

60% of teachers from the special school sector felt that the Dissolving Boundaries Programme had a significant or very significant impact on North South understanding.

Within the post-primary sector, 62% of teachers regarded the impact of Dissolving Boundaries on North South understanding as significant or very significant.

## **8.6 Curricular Learning**

Teachers were asked to rate the impact of Dissolving Boundaries on curricular learning, including communication skills. 38% considered it made a very significant impact, with 45% considering it as significant impact. This impact was most evident in the special sector, with 68% of teachers there reporting that Dissolving Boundaries had made a very significant impact on pupils' curricular learning and 28% regarding the impact as significant. Within the primary sector, 33% of teachers considered that Dissolving Boundaries had made a very significant impact on curricular learning while 50% thought it

made a significant impact. In the post-primary sector, 24% of teachers considered that the impact of the Dissolving Boundaries Programme on curricular learning was very significant, with 52% considering it as significant.

### **8.7 Face-to-face meetings**

Of the total number of schools currently in Dissolving Boundaries, 63% took part in a face-to-face meeting within the last academic year. Of the cohort of schools that joined the Programme in 2003, 92% took part in face-to-face meetings.

### **8.8 Collaborative learning and communication skills**

Qualitative data shows that the programme had a marked impact on collaborative learning within classrooms, between pupils in partner schools and between teachers in partner schools. Teachers also commented positively on the effect of the programme on pupils' communication skills.

Evidence from the evaluation suggests that links between two schools (as opposed to a larger network) are very effective, especially in primary or special schools.

## 2.0 Context

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### 2.1 Learning through and with ICT

The Departments of Education in Belfast and Dublin continue to emphasise the importance of integrating ICT into the curricula of all school sectors. Announcing plans for the procurement of broadband for all schools, the Minister for Education in the Republic of Ireland also launched a new set of guidelines (NCCA, 2004) for teachers in the use of ICT in the Primary Curriculum: "The guidelines show how ICT can become a powerful resource when combined with what we know about teaching and learning and provide numerous examples of how children are using these tools to add tremendous value to their learning." (Department of Education and Science, 2004).

The Planning Structure for the Strategic Framework from the Department of Education in Northern Ireland in its strategic aim 2.4 refers to providing "young people with the knowledge and skills for life, employment and further learning". One of the priorities of this aim is: "To foster initiative and creativity in young people and develop their skills in ICT, communication and problem solving". (Department of Education for Northern Ireland 2004).

But what is the best way to develop pupils' skills in ICT? What exactly does integrating ICT into the curriculum mean, and which elements of ICT best suit teaching and learning of a particular topic? Some of the recent literature suggests that there are continuing difficulties in the adoption of ICT into the curriculum. Reynolds et al (2003) refer to the "optimist-rhetoric" which permeates the educational establishment at all levels and influences thinking of government agencies. He contends that this "optimist-rhetoric", couched as research supports the idea that ICT raises standards of pupil achievement. He questions this excessive optimism and concludes that more research is needed to improve the expectations and effectiveness of ICT provision and utilisation. Quoting Abrami, Reynolds suggests that "teachers should focus on learning with technology, not about technology".

Goodison (2003) maintains that the use of ICT in the classroom does not guarantee added value to a lesson, indeed sometimes ICT can impede the learning process.

Based on evidence from school inspector reports in USA, Scotland and England, Robertson (2003) suggests that ICT "remains a marginal force in the education of 5-12 year olds. He contends that integration of ICT in the classroom depends on the individual teacher's stance with regard to teaching. In the classroom characterised by active learning, group work and high levels of learner autonomy, ICT is most frequently used. In contrast, where "the regime is characterised by didactic whole-class teaching, ICT use tended to be peripheral and infrequent". Robertson tries to understand resistance to change in the latter type classroom – "the traditional classroom may be sacred and confer and confirm an identity (on the teacher)". Our research shows that the Dissolving Boundaries classroom falls into the category of active learning, group work and independent learning.

In an effort to ensure that ICT as an element adds value to learning, Nichol et al (2003) recommend the use of generic software such as presentation and drawing packages, which are content-free, thus allowing pupils to create and explore curricular materials. In their case study, ICT was integrated into an existing programme of work, and research indicates an increased sense of engagement, giving reason to be positive that ICT can enhance pupils' learning within the context of the history curriculum.

In Dissolving Boundaries, training is given in the use of PowerPoint and web design. This is the type of software to which Nichol et al refer, giving pupils and teachers the opportunity to be creative. It may also be the case that this is software that is not too threatening for teachers, and where they can still maintain control over what is being taught.

Because web design is relatively new in schools, the impact of this activity on pupils' learning is not well documented. One researcher, however, (Hazzan, 2004) hypothesises that the construction of websites by learners has educational potential: "Constructing a website may improve students' cognitive and metacognitive skills".

*"When learners construct a website, they have to consider relationships among the components of the presented topic and not only the components themselves. Such considerations result in a more coherent mental structure in the mind of the learner of the subject presented in the website."*

Hazzan continues that constructors of websites have to consider the user's view, leading to mental manipulation of pieces of information. By constructing a website, students are provided with a medium which enables them to map their understanding of the presented concept, to improve their understanding of the concept during the process of constructing the website and to gradually refine their conception.

In contrast to Hazzan's findings, Jedeskog and Nissen (2004) investigate if ICT can promote the basic skill of becoming competent at handling information. Findings indicate that pupils search and collect but do not elaborate and do not evaluate information. Neither do they collaborate. One example given was a PowerPoint presentation, which lacked depth and care. This is an example of ICT competence but lack of content, where "the doing" gets more attention than "the understanding". Researchers found that more time was spent searching at the expense of in-depth work. Results from the study also indicated that there is a risk that using ICT-based learning may make it too easy to hand over too much responsibility to the pupils themselves.

These findings highlight the need to choose carefully the type of ICT tools to use and to have specific aims for their inclusion in a lesson. In *Dissolving Boundaries*, teachers are required to work with pupils on a PowerPoint presentation of a curricular topic or a website with similar curricular content. In many cases, this software is also used to construct joint presentations with the partner school, thus working towards collaboration. The exchange of this work, is of course, facilitated by other ICT tools, such as computer conferencing and videoconferencing.

## 2.2 Innovative Practices in the use of ICT in the classroom

The term innovative practice in the use of ICT is one, which is often used, and an attempt to define this difficult concept is made by Kozma and Anderson (2002). They consider several aspects that would qualify practice as innovative, including:

- (i) Practice that provides students with competencies and technological skills that allow them to search for, organise and analyse information and communicate and express their ideas in a variety of media forms.
- (ii) Practice, which engages students in collaborative, project based learning in which students work with others on complex, extended, real-world-like problems or projects.
- (iii) Practice that improves social cohesiveness and understanding by having students interact with groups and cultures that they would not interact with otherwise.
- (iv) Breaking down the walls of the classroom.

In order for ICT to be effective in the classroom, Harris (2002) argues that there is a need for teachers to change their existing practices, e.g. give pupils more opportunity for independent learning and support pupils in their new social and curricular interactions.

Loveless (2003) recognises changes in teachers' own use of, and their attitude towards, ICT, particularly when they had flexible access at appropriate times (usually at home). She differentiates between the "computer awareness approach" of the majority of teachers, which recognises the ubiquity of ICT in wider society and the "pedagogic approach" which uses ICT to facilitate teaching and learning objectives. Her findings indicate that even those teachers who expressed a "pedagogic approach" demonstrated "discrepancies between statements and classroom practice which focussed on computer skills rather than integrated learning intentions".

In *Dissolving Boundaries*, computer conferencing and videoconferencing play a major role in the implementation of the programme. Both these media were new to teachers and pupils within the school context. As a

consequence, this added a new dimension to teaching and learning within partnered classrooms. The majority of teachers in the Dissolving Boundaries Programme made more use of ICT within the classroom and integrated its use into the curriculum. Besides the use of the communication software and hardware, more integration of PowerPoint, web design and digital camera was common within the Dissolving Boundaries classroom. Many photos of classes and 'Work in progress' were exchanged in the conferencing site in NINE.

Considering Kozma and Anderson's definition, (above) it is clear that Dissolving Boundaries is an example of innovative practice in the use of ICT as it fulfils many of their categories. Teachers were asked if they thought their method of teaching had changed in any way to accommodate the work of Dissolving Boundaries and the vast majority reported a variety of changes, including more emphasis on ICT, more group work, more field trips, more active learning, more cross-curricular work, more planning. Teachers also found that more of their time was devoted to developing pupils' talking and listening skills because it was essential that pupils understood what was being said on videoconferencing.

Again, because of the emphasis on collaboration in Dissolving Boundaries through the use of ICT, teachers reported having to look at new ways to engage with their class. More discussion amongst pupils took place and many teachers regarded themselves as "facilitators" in the class rather than being overly didactic or dictatorial, "a welcome change from chalk and talk!" Teachers found themselves listening to suggestions from pupils as to how to organise videoconferences. Teachers also listened more to suggestions from pupils as to which way to proceed in the collaborative tasks, and which way to present information to their partner schools. Pupils themselves compiled quizzes based on their curricular topic to exchange with their partner school. All these activities gave pupils a new independence in the classroom.

"Flexibility" was a word commonly used by teachers as they attempted to explain their new role. Student led activities was a new feature in many classrooms. One teacher described this as "being able to stand back and let children lead the way". Another described it as "pupil driven and pupil

centred". Flexibility also related to working with groups, changing the make-up of groups according to the different strengths of the pupils. Groups for Dissolving Boundaries were often different than groups in Maths, English etc. Many teachers reported more emphasis on cooperative group work within the classroom. Some of this "flexibility" involved time management – teachers had to be spontaneous in their use of computer suites when they became available. Two teachers working with two classes in a special school found themselves engaging more in team teaching and "modelling":

*"We did a lot of modelling - where you model behaviour and it encourages children to follow it. We actually almost became like pupils to show them what to do."*

One of the teachers concerned had never done modelling before:

*"..modelling was something that I didn't know a lot about but I know (teaching colleague) has been looking at this in more detail through her studies. It is something that I have been able to take and get into the pupils' shoes and have to understand where they are coming from and their needs and then model that so that they can see the behaviour that they need to adopt in certain situations. So in that sense it has enhanced and I only recognised that through taking part in Dissolving Boundaries. It might have happened through something else but in this case it has happened through Dissolving Boundaries and through the videoconferencing."*

Because of the nature of the Dissolving Boundaries Programme, teachers had to consider the teacher and class in the partner school and in order to best manage the communication, flexibility had to be accompanied by better organisation. Work had to be scheduled effectively in order to allow pupils to communicate with their 'e-pals'.

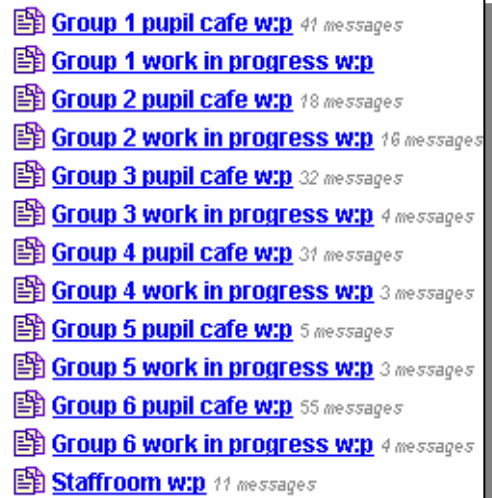
Because of the emphasis of communication in the Dissolving Boundaries programme, teachers noticed major improvements in pupils' oral and written communication skills. When preparing pupils for videoconferencing, one pair of teachers in a special school noticed the need to work on communication skills:

*"I guess we saw their lack of social skills and conversational skills which would have been masked with ordinary classroom teaching, ... but because they had to use those skills and we noticed they didn't have them, then we had to leap in there and help improve them."*

## 2.3 Computer conferencing

Computer conferencing was facilitated by NINE (Northern Ireland Network for Education). Personnel in NINE set up a closed and private conference for use solely by participants in Dissolving Boundaries. This conference was protected by an access list, which meant access was denied to anyone outside this list. Within this closed conference, each pair of partnered schools was allocated a folder, which contained group discussion areas. Teachers were recommended to break up whole classes into groups of 5 or 6 pupils. Each group was then given two discussion areas, one for social interaction, called Pupil Café, the second for curriculum related work, called 'Work in progress'. There was also a separate area in each folder for teachers, called 'Staffroom'.

*Example of a project folder in NINE*



Data shows that overall, 78% of schools rated the technology used for computer conferencing as good or very good. More schools in Northern Ireland were satisfied with this medium, with 82% expressing satisfaction in NI and a 72% satisfaction rate in the Republic of Ireland.

Examining data on this technology from a school sector perspective, results show that 50% of post-primary schools considered the computer conferencing technology to be good and 30% of post-primary schools considered it to be very good. In the Primary School sector, 40% rated the technology as good, with 42% rating it as very good. Special schools did not rate this technology as highly, with 53% considering it as good and 6.7% rating it as very good.

The lower rate of satisfaction of the computer conferencing technology within the Special sector can be partly explained by the fact that during the period in question, special schools in Northern Ireland were not fitted out by C2K (Department of Education agent responsible for deployment of computer

infrastructure) until very late in the school year. This meant that broadband had not been installed and also that they had not received their due proportion of computer hardware. Teachers in special schools also reported that keyboarding skills amongst their pupils were not at a high level. Pupils, therefore, were much more likely to engage with videoconferencing than with computer conferencing.

## **2.4 Collaboration and computer conferencing**

Lipponen and Lallimo (2004) distinguish between “collaboratively usable applications” and “collaborative technology”. Collaborative technology is defined as “technology that is especially designed and tested to support and establish collaboration in education”. It is designed to encourage students to use writing as a medium of collaborative learning and between-student communication. Computer conferencing in NINE, particularly with its facility for threaded discourse is, arguably, a collaborative technology and one, which was regarded very positively by teachers and pupils.

Murphy (2004) regards collaboration using asynchronous discussion as more than interaction between pupils or teachers.

*"Collaboration represents a purposive relationship, the intent of which is to produce something, to solve a problem, create, or discover something and to work together to achieve shared goals."*

Quoting from Henri and Garrison, Murphy continues:

*"When a sense of community is formed through communicating on a social rather than just an informational level, interaction can move to a higher level and become collaborative."*

Murphy presents a triangular model of collaboration where the production of shared artefacts is at the top – “in order for the highest level collaborative processes to occur within an on-line discussion, there must be explicit strategies or techniques aimed at promoting these processes”. The use of a social folder (Pupil Café) and a ‘Work in Progress’ folder in NINE for the use of pupils is one such strategy. Constant monitoring of messages and feedback from the Dissolving Boundaries team is also aimed at promoting

good quality collaboration. And the goal of producing a shared piece of work seems also to fit into Murphy's model of online collaboration.

Heaney and Clarke (2003) note the use of discourse as a means of learning. Quoting Wray that learning is a social process and a situated process, they suggest that teachers must provide meaningful contexts for learning. Discourse is also regarded as a "mediator of higher mental functioning" by Vygotsky (Alfassi 200). But it is not just pupils who gain from online discussion. Flecknoe (2002) outlines the benefits to teachers of virtual discussions as a means of support between colleagues.

In *Dissolving Boundaries*, teachers had to overcome many obstacles to achieve collaboration through the use of ICT.

*"The striking differences in the school systems are matched by different curricular content in each country, and different arrangements for its assessment. In short, cross-national projects, using ICT as the engine for collaboration, must overcome a formidable set of obstacles to identify compatible pupils and common areas of study, then find sufficient time to carry them out."*

(Austin et al, 2003)

It is a testament to the dedication, hard work and professionalism of the *Dissolving Boundaries* teachers that they can overcome such barriers to work together at such a high level of collaboration.

In the general teacher population, however, the use of ICT for communication purposes is not a priority. Although Goodison (2002) in his study of pupils' perceptions of ICT at primary level, found young people beginning to discern advantages of different computer applications, he notes that the technology was not used across school boundaries. In Waite's study of the use of computers for literacy, he carried out two surveys in 1998 and 2001. (Waite, 2004) In 1998, cooperative work with computers was not considered a high priority, but was considered the most relevant in 2001. Although ICT's relevance for communication went up by 20% during this period, ICT for the purposes of communication and collaboration is still considered to be the least relevant. Waite refers to Clegg's point about

technology as a tool for more traditional tasks rather than facilitating new forms of communication.

## 3.0 Impact of ICT

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### 3.1 Computer Conferencing

Dissolving Boundaries teachers were asked to rate one new form of communication, computer conferencing. When asked how beneficial computer conferencing was to their pupils, 46% within the primary sector considered it "very beneficial" and 33% rated it as "beneficial". 15% of post primary teachers rated computer conferencing as "very beneficial" and 55% considered it as "beneficial". The lower opinion amongst post primary teachers of the value of computer conferencing may be explained by the fact that pupils in this sector tended to use text message type spelling, and therefore their literacy skills remained unaffected. In order to impress their partner pupils, this age group needed more to appear "cool" rather than to impress by using correct grammar and punctuation.

The benefit of computer conferencing was not major in the special school sector, with just 20% of teachers regarding it a "beneficial" and none reporting it as "very beneficial". This can be explained by the fact that many children in this sector have poor keyboarding skills and therefore little use was made of this medium of communication.

The impact of computer conferencing was similar in the North and South, with 68% of teachers in the South and 64% of Northern teachers rating it as "beneficial" or "very beneficial".

Some comments from teachers illustrate the impact of computer conferencing on their pupils:

*"It had a major impact as it proved to pupils that learning can be engaging and interesting."*

(post primary)

*"Children eagerly awaited replies."*

(primary)

*"Children enjoyed sending and receiving messages. Their confidence and abilities in keyboard skills improved."*

(primary)

*"Children had to think about what to write and how to write it."*  
(primary)

*"Pupils were eager to communicate every week. They used it to get to know each other through profiles. Pupils that did not put effort into it, got nothing out of it."*  
(post primary)

*"Successful from a pastoral point of view as the two groups of children were able to get to know each other. Computer conferencing worked well for this age group as they were capable of communicating in this way. Smaller groups may work better for this in the future."*

Whilst the majority of comments about computer conferencing were positive, it was not always successful. A small minority of teachers (10%) became frustrated with unbalanced use of this medium. In schools, which experienced this lack of balance, pupils became very disappointed and disillusioned with the slowness or complete lack of response. The majority of teachers, however, were very enthusiastic about this new means of communication.

This is how one primary school pupil used computer conferencing to collaborate with her friend in the other school:

*"Can't wait to be e-pals with you too. We read the book all about 'The owl' who was afraid of the dark. I love it too. I like chapter 2 when Plop's mother told Plop to go down to the little girl with the pony tail and plop goes down and says girl's don't have tail's it was funny. How are you doing anyway hope to hear from you very soon lots of love from Nicola."*

## **3.2 Videoconferencing**

Videoconferencing had never been used by the majority of schools before their entry into the Dissolving Boundaries Programme. Videoconferencing equipment was distributed to all participating schools. The Siemens T-View ISDN videophone was the model given to all primary schools in the first phase of the Programme while post-primary schools in this phase were issued with a Sony Video card, which was installed into a Dell computer, also given by the project. The second and third phase schools in all sectors were given a LeadTek MetaEye ISDN videophone, with a very small number of post-

primary schools opting for a Zydacron videoconferencing card which was installed into a computer of the school's own choice.

Although schools had been advised that for ease of use, the best location for the videoconferencing equipment would be within the classroom, just 40% of schools reported that this is where it was situated. Of the other 60%, the majority of schools kept the videophone in the computer room and a few schools had it in the library. Of all the schools that had the videoconferencing equipment in the classroom, 72% of teachers reported being either "very happy using videoconferencing – very confident" or "quite confident". Of the schools, which held the videophone outside the classroom, 69% of teachers reported being "very confident" or "quite confident" with use of the technology.

Breaking down the location of videoconferencing equipment according to school sector, data reveals that 33% of post-primary schools held the videophone in the classroom of the teacher involved in the Dissolving Boundaries Programme. This low number correlates with data giving the confidence level in the use of videoconferencing. No post-primary teacher regarded him or herself "very confident" in the use of videoconferencing equipment. However, 27% regarded themselves as "still learning", 46% considered themselves as having "improved confidence" and 27% considered themselves as "quite confident" in the use of videoconferencing.

49% of primary schools and 22% of special schools held the videophone in the classroom. 27% of primary and 44% of special school teachers rated themselves as "very confident" in their use of videoconferencing equipment. 35% of primary teachers and 33% of special teachers rated themselves as "quite confident" in their use of videoconferencing. The issue of teachers' confidence with technology has implications for the use of ICT in the classroom. Flecknoe (2002) found that teachers who are anxious about new technology are not likely to communicate confidence to their students. And even though pupils recognise that teachers can't know everything about ICT, Goodison (2002) sounds a warning note that children lose confidence if teachers' competence is questionable and this tends to hinder the integration of ICT into the curriculum.

One primary school (NI) deliberately chose to keep the videophone in a walled off area of the foyer. This was because both Primary 7 (last year at school) classes were involved in the Dissolving Boundaries Programme. Teachers regarded pupils in these classes as mature and independent enough to use the videophone in groups with occasional teacher supervision. It also enabled the rest of the class to continue with their normal class work while a small group of about 3 or 4 children were conferencing at the time. One teacher commented: "We felt that also it was less inhibiting with the children and they felt freer to ask more questions about what has been going on during the week or what has been happening in school."

The teacher in this instance explained that the groups for Dissolving Boundaries were different from maths or English groups. She also considers that her teaching has changed with regard to group work:

*"We try to decide how many groups we would have and having different make ups of groups, different children who would have different qualities within the groups. So we had to think more about that."*

Of all the schools, which kept the videophone in the classroom, 54% were from Northern Ireland and 31% were from the ROI. Several teachers regretted not having the videophone in their own classroom as illustrated by the following comment:

*"Having the Internet and videophone in my classroom would enhance the productivity of the project."*

Teachers were asked to rate the videoconferencing technology under the following designations: very poor, poor, ok, good or very good. Within the primary sector, 73% of teachers rated the technology as good or very good, with 6% rating it as poor or very poor. In post-primary schools, videoconferencing was rated as good or very good by 70% of teachers, with 25% deeming it "ok" and 5% rating it as poor. In special schools, 100% of teachers rated the videoconferencing technology as good or very good. Satisfaction with the technology was similar on both sides of the border, with

75% of Republic of Ireland teachers rating it as "good" or "very good" and 79% of teachers in Northern Ireland giving it this rating.

Frustrations with the technology were mostly concerned with sound difficulties. 25% of schools reported problems with sound. This was particularly a problem for pupils with special needs. Some of them had difficulty with their speech, and so were hard to understand when the sound quality was poor. Some autistic pupils tended not to interpret sentences with missing words, and so the meaning was lost if the first word was cut off. In spite of problems with sound however, videoconferencing was highly motivational for the pupils – even the most autistic wanted to have their say, and those with severe speech disorders still got involved.

In order to improve sound quality, some teachers used the handset on the videophone rather than the speaker option. Whilst this did solve the sound problem for the individual pupil speaking, it had the disadvantage of not allowing the whole group to hear the conversation. An adaptor to enable separate speakers to be attached to the videophone was distributed to all Phase 3 schools in the Republic of Ireland. Teachers had the option of attaching these speakers to the videophone to enable an individual pupil to hold the handset, whilst at the same time other pupils could hear all the conversation.

14% of schools reported connection problems. The videophones were suitable for use only with ISDN lines and these were retained in all schools in Northern Ireland, which were due to have broadband installed. In a few instances, the ISDN line had already been removed and had to be re-installed. In the Republic of Ireland, all schools still use ISDN for all videoconferencing and Internet connection, although broadband is being considered by a number of schools as an option for the forthcoming academic year and the Department of Education's policy is that all schools should have broadband by the end of 2005.

Because of the synchronous nature of videoconferencing, it was expected that there would be problems with finding a convenient time to suit both classes. Teachers in the post-primary sector encountered more difficulties

with timetabling videoconferencing (47%) than those in primary (24%) or special schools (33%).

In order to overcome the timetabling difficulties, some post-primary schools used lunchtimes to videoconference. The following is one teacher's story:

*"Some of the pupils would be very keen and always come to do the VC and get stuck in whereas others think, this is my lunchtime and I can't be bothered turning up. Disappointing but that is the way it is. Others are somewhere in between, you just have to give them some encouragement. It evolved, we started videoconferencing initially just in groups and other people passing the door started to see and wanted to get involved in it. I didn't mind them being in because at that stage they were chatting to each other and having a bit of 'craic' and it wasn't work related as such. I had students from year 10, year 12 all coming in just sitting round."*

### **3.3 The benefits of videoconferencing**

Fifty percent of teachers considered videoconferencing to be "very beneficial" while 30% regarded it as "beneficial". Of this total of 80% of teachers giving positive feedback on videoconferencing, the greatest impact was noted within the special school sector, where 87% of teachers regarded videoconferencing as "very beneficial" and 13% regarded it as "beneficial".

Within the primary sector 46% of teachers regarded videoconferencing as "very beneficial" with 40% giving it a "beneficial" rating. The following message, posted in NINE by a teacher gives an idea of this medium as a means of pupils sharing talent with their peers at the other location:

*"Just a wee note to thank you greatly for all the effort your class put into their party pieces today. They really were fantastic . You must be so proud of them all. My class really enjoyed the video conferencing. They all had a super time and so many of them were asking when they could do it again!"*

Another comment from a primary school teacher about using new technology:

*"The video conferencing was an excellent new aspect of technology that the children were introduced to. It made a big difference that the children were able to see each other. It was fun preparing activities for this and equally so listening to the other children."*

Post primary teachers made least use of videoconferencing, partly due to the difficulty of timetabling. 33% of this group considered videoconferencing to be "very beneficial" with 19% regarding it as "beneficial" and 29% giving this medium an "ok" rating.

One partnership within the post primary sector was an interesting collaboration between pupils in a school for the deaf in the South and hearing pupils from an Integrated College in Northern Ireland. Comments from teachers in this Deaf/Hearing partnership give a flavour of the benefit of videoconferencing:

*"... we had our first conferencing session with our partner school ... It worked first time and both schools found it very interesting. It was good to see the girls we are currently working with and especially to understand and communicate with them. My students and I had learnt our names using the iris mantel alphabet and the Dublin girls were able to make them out, it was great. We are currently negotiating a face-to-face meeting and have agreed in principle that we will do one, probably in Dublin in February."*

And, from the other teacher:

*"I was delighted with today's conference. I must admit that I was apprehensive and worried that we wouldn't be able to understand each other. It was a huge relief and very exciting for us. I was very impressed at how well the girls communicated - I didn't have to intervene at any stage. Looking forward to the next conference."*

In the school for deaf girls in Dublin, use was also made of the videophone to contact an Association for the Deaf in Kerry:

One student wrote the following about the videophone:

*"It was fantastic to know that we, the deaf are able to use the visual phone. It was like a dream come true for me. The picture was very clear and I could see the sign language very clearly and I spoke to ... I felt they were in the same room although they were in Kerry. I would love to stay on the visual phone for long but I cannot be greedy... I am sure many of the girls will love to use it and it would be great if the Principal has one."*

In the special school sector, the impact of videoconferencing between two schools was summed up as follows:

- Videoconferencing helped to develop social skills. The children need to develop the skills of talking to a child they don't know, and taking turns in talking.
- They felt they got to know each other during the conferences. When they met for a face-to-face, they had already decided who their "friends" were, and they sought out specific people.
- They got to know about Belfast – there was a lot of looking at maps and at the other school.
- The project was very popular with parents and with the board of management. Parents don't expect that a child with special needs will be videoconferencing with another school.

Special needs pupils, not just in the special school sector, but also within normal primary schools gained a lot from videoconferencing. Many teachers described sessions where special needs pupils took ownership of the Dissolving Boundaries programme and were motivated to do more work. It was a "confidence booster" where the visual helped to improve pupils' social and communication skills.

These findings are consistent with those of Abbott et al who found in her study of special needs pupils in Dissolving Boundaries that all teachers referred to pupils' "enhanced social and communication skills". With videoconferencing there was no need for keyboard skills, and because of this, most pupils with special needs preferred this medium to computer conferencing (Abbott, 2004). In some instances pupils' reaction to videoconferencing surprised teachers, in that shy pupils became less so and 'bubbly' characters 'clammed up'. It also allowed teachers to see a different side of pupils and allowed all to succeed in a 'non-threatening' way. It also provided a focus for project work and gave pupils a sense of pride when others saw their work. "Weak pupils shone".

For all pupils, the main impact of videoconferencing, according to teachers, was improved oral and listening skills. But other social skills also improved,

such as turn-taking and manners. It also helped pupils learn a better sense of collaboration and motivated them to present their work well to an audience of their peers. In the words of one teacher (post-primary): "they could see who they had to impress".

Some teachers did report a certain shyness amongst pupils when they first encountered this new technology. This self-consciousness is explored by Wheeler (2000) whose research indicates that younger age groups were more anxious than adults when using videoconferencing. He asserts that this self-consciousness is due to the lack of practice within the younger age group in communicating with others in "novel situations". Wheeler also noted that males reported greater reluctance to repeat the experience of videoconferencing.

A message in NINE (from a primary school boy) put in immediately after a videoconference gives a flavour of this shyness:

*"We just did the video phone I was hiding so I would not have to talk into the phone to any one!! I might give it a try later. Your teacher asked was I a girl! Do you do any sports because I do boxing."*

But, improved confidence and the "blossoming of self-esteem" were outcomes of videoconferencing noted by many teachers.

### **3.4 Pupils' ICT skills**

At the time when teachers were asked to assess the impact of Dissolving Boundaries on pupils' ICT skills, the majority of pupils had been engaged with the programme for approximately six months. During this period, pupils had been introduced to computer conferencing, videoconferencing, digital camera and PowerPoint. Some pupils had also had experience with web design. (Teachers received training in either Microsoft FrontPage or BlackCat Spider, depending on their choice).

55% of teachers reported a "very significant" improvement in pupils' ICT skills, while 32% rated the improvement as "significant". The improvement was most evident in the primary sector, with 65% of teachers there

recognising a very significant improvement and 21% seeing a significant improvement. This compares with 45% of post primary teachers reporting a very significant improvement and 45% reporting a significant improvement in ICT skills.

Although the special sector had shown very little enthusiasm for computer conferencing, when it came to measuring pupils' overall ICT skills, teachers painted a different picture. 40% of teachers reported a very significant improvement and 48% reported a significant improvement in their pupils' ICT skills. Teachers felt that pupils broadened their knowledge of the different uses of ICT. They were now exposed to software that had hitherto been unavailable or unused. These pupils now made more use of the Internet, used PowerPoint for presentation of work and enjoyed videoconferencing. "ICT was not used in isolation, but as an integral part of teaching and learning" (Abbott, 2004). Not all pupils were able to write or type but were encouraged to engage with the Programme according to their ability. They gained a better understanding of the speed of processes and the "immediacy" of communication using ICT.

## **4 Impact on North South Understanding**

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One element of the Dissolving Boundaries Programme, which does not exist in any other part of the normal school day, is the contact with a school on the other side of the border. Many schools in Northern Ireland have contact with another school, usually within their own area, in order to promote religious tolerance through the Education for Mutual Understanding (EMU) Programme. The Dissolving Boundaries Programme extends this concept of relating to another school and promotes collaboration between schools separated not just by distance and national border, but working within different education systems.

23% of teachers overall (n=21) rated the impact of Dissolving Boundaries on North South understanding as very significant. Of this group, 21% (n=8) came from the North, and 27% (n=12) came from the South. 45% (n=39) of teachers considered that Dissolving Boundaries had a significant impact on North South understanding. Of this group, 52% (n=21), came from Northern Ireland and 39% (n=18) came from the Republic.

### **4.1 North South understanding in the primary school sector**

Of the group of teachers who considered that Dissolving Boundaries had had a significant or very significant impact on North South understanding (n=60) the greatest impact was felt in the primary sector, with 75% of teachers there considering that pupils' understanding of their counterparts across the border was significant or very significant. One primary teacher, from the South, commented: "The Dissolving Boundaries programme had a "positive impact both on pupils and their parents and wider families". Another primary teacher from the South felt that pupils "didn't have any notions of barriers between North and South. They did notice differences, e.g. Harvest Festivals, St Patrick's Day and differences in the educational system." Another teacher from the South said that pupils noticed geographical differences but that religion was not an issue.

A primary school pupil described one of the benefits of involvement in the Dissolving Boundaries Programme as follows:

*"Well we got to meet people we would never meet. We found out about other places people live and what they like doing."*

Another commented:

*"We got to talk to other people and find out what they like, what they dislike and what their favourite things are. We got to use the digital camera, it was great."*

And ...

*"It was worthwhile because we got to communicate with girls from a different school in a different part of the country. We learned about them and their school. We also got to spend lots of time in the computer room working on the project."*

Because some of the partnered schools came from very different locations, e.g. a large Belfast school linked with a small rural school in Kilkenny, the teacher (North) noted that the differences the pupils perceived were not North South differences but how they differed due to family and home setting. This rural urban contact was evident in several projects and was considered by teachers as very interesting and educational for pupils, whereby pupils were not learning just about life on the other side of the border, but how life was on a farm, in a small town, in a city.

Sport was a common topic for conversation between pupils when using the Pupil Café for chat.

*"Hi Stuart, did you have any Hockey matches lately? I have a Hurling match with the school tomorrow, another on Saturday, and I have a running race on Sunday" (sic).*

But a message from Belfast indicated that not all sports were recognisable:

*"Hi my name is Matthew I read your messages. What is hurling? Do you like playing on the Internet too? What is your 2nd name? Do you like Kerby?"*

This message elicited the following response:

*“Hi Matthew. hurling is the fastest field game in the world. It is used with a stick called a hurl or hurley. What is Kerby? My 2nd name is Dunphy. What is yours?”*

These messages were part of one computer conferencing partnership which had a total number of messages (counted in May 04 ) of 557. Of these, 326 messages were social and belonged in the discussion area called Pupil Café. The remainder were curriculum related and were in the discussion area called ‘Work in progress’.

In one link, which was a primary sector all-Irish speaking (Gaelscoil) partnership, the teacher in Northern Ireland commented that it was “very useful for children to see that other children spoke Irish and had the same interests”. Because there is a fairly small number of Gaelscoileanna in Northern Ireland, having a link with a Gaelscoil in the South gives a feeling of belonging to a larger group and helps to dilute the feeling of isolation.

One primary teacher from Northern Ireland said that her pupils gained “greater awareness of other children’s area, experiences and culture, awareness of similarities rather than differences.” In fact, several teachers commented that their pupils saw their partners simply as “other children” and realised that “life down south is similar to life up north”.

The North South awareness created by the Dissolving Boundaries programme was never negative. Even though 21% of teachers felt that the impact on North South understanding was not significant or were “unsure” of the significance, no teacher made a negative comment. Many pupils, particularly from the South, had never travelled across the border, but Dissolving Boundaries “brought North nearer and children got different viewpoints”. One primary school teacher, having travelled with pupils to the North to meet their partner school, gave an insight into the minds of her pupils:

*“Some of my pupils had not been to the North before, and even thought that the coach might be stopped at the border! They now know that the north is no different to the republic.”*

## 4.2 North South understanding in the special school sector

60% of teachers from the special school sector felt that the Dissolving Boundaries Programme had a significant or very significant impact on North South understanding. And hope was expressed, that as the programme progresses, more understanding will develop. What is different in the special school sector in Northern Ireland is that these are "integrated" type schools, with children of different religions freely mixing. So there already exists what one teacher described as "underlying understandings and values".

The main improvement in this special school sector in terms of North South understanding was an increased awareness of place and accent and also the different school systems. Pupils became more aware of the "wider world" and this was of great value to the Social Personal and Health Education area of the curriculum. Their enthusiasm for learning "about the country" was increased. The Programme had given them a real purpose to finding places on a map.

One teacher's comment captures the lack of political awareness within this sector:

*" Our children learn about a place called Belfast. Our children did not have a concept of North South boundaries or religious difference ..."*

Another comment from a teacher in this sector reflected similar lack of awareness:

*"I'm not sure how much our children were aware of issues related to this (North South understanding). They did all cross the border for the first time though!"*

This was a trip to a Viking centre in Dublin, as Vikings were the topic for curriculum work. The teacher also spoke about the social aspect of this interaction:

*"Maybe at home they don't get to mix with other children because they are inside a lot and they don't get to live in the same community as other children. I think just the social awareness has been the most important because the other stuff we could have done (outside of the project). It wouldn't really be as rich to just teach the Vikings. There wouldn't have been that depth of experience and sharing knowledge... It hasn't been as prescriptive as teaching the Northern Ireland curriculum."*

Several teachers drew attention to the fact that their pupils in special schools recognised that there were other children similar to themselves in another part of the country. This was very positive and gave them the opportunity to concentrate on their abilities rather than their disabilities.

### **4.3 North South understanding in the post-primary sector**

Within the post-primary sector, 62% of teachers regarded the impact of Dissolving Boundaries on North South understanding as significant or very significant. In at least one case the cross-border work had carried on from work that pupils had previously done when in primary school, and this continuity was considered valuable.

In the post-primary age group (this ranged from 11-17) there was more evidence of an increased political awareness. But pupils also realised that "they have the same worries, concerns and expectations". Pupils also became more aware of the different systems of education North and South. Horizons were broadened. Teachers reported that pupils were "very receptive and keen to find out more about each other". One Northern teacher reported that a pupil (17 years old) had never been south prior to her involvement with Dissolving Boundaries. It is generally acknowledged that travel from North to South is more common than vice-versa, with the majority of Northern teenagers having visited at least Dublin.

Several of the Southern post-primary teachers felt that their pupils had very little understanding of the North before becoming involved in the Dissolving Boundaries Programme. Being involved "opened up their eyes to a human side of Northern Ireland, different from what they learn from TV and even sterile and removed history texts." One teacher from the South felt that the face-to-face visit to Northern Ireland had a big impact on her pupils. Another commented, "Dissolving Boundaries proved useful in increasing the pupils' limited understanding of past and present political/religious realities." The general feeling among post-primary teachers from the South was that involvement with Dissolving Boundaries gave pupils a first hand insight into northern schools and gave them the opportunity to see the "vast amount of similarities between north/south".

Boys from a post-primary school in the North were very aware of not offending anyone and at the same time concentrated a lot on religious differences (it needs to be mentioned that the boys had never actually asked the Southern pupils about their religion – they simply assumed they were Catholic):

*"With us being from different religions you don't want to offend anybody so you obviously have to take more consideration."*

But at the same time, the boys felt that using computer conferencing had helped to build bridges:

*"We have broken the barrier and we are talking freely. Either groups are not afraid to say anything about their religion."*

Teachers, as well as students, saw differences in the education systems and compared and contrasted these. One teacher summed up the situation:

*"The project taught us students and teachers alike that we are all equals trying to do the same things, devoting ourselves to educational pursuit and recognising our similarities despite differences in conditions of service for teachers and resources available for students."*

One pupil (primary) summed up his understanding of the work of Dissolving Boundaries in poetic form as follows:

## ***Dissolving! Boundaries!***

***Dissolving Boundaries  
Helps us to see,  
There's only a little difference  
Between you and me!***

***The difference is not  
Religion, race or colour,  
The difference is how  
We treat each other!***

## 5 Collaboration

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There are three different aspects to collaboration within the Dissolving Boundaries programme.

- (i) Collaboration within the classroom.
- (ii) Collaboration between pupils in the two partner schools.
- (iii) Collaboration between teachers in the two partner schools.

### 5.1 Collaboration within the classroom

In the Dissolving Boundaries classroom, groups of pupils work together to produce various elements of the project. This is the area where some teachers reported that the make-up of groups differed from group work in other areas of the curriculum. Shy pupils were put together with more outgoing pupils, young and old were mixed (in composite classes), and pupils of different ability levels worked together.

One teacher describes teamwork:

*"Within their groups they are discussing – well, what will we add to the story or does this look better in the presentation? Children who normally wouldn't have been working together now because they are in a little group are more socially involved with their own peers. I also think it has been very useful this year with trying to keep the video link going once a week they have greater interaction with their peers in the south and they have been asking each other then about different aspects of the project so they have been working together that way."*

Another teacher drew attention to the increased use of groups within the classroom:

*"Yes, more group work. Although with videoconferencing we would usually work as a whole class. Maybe a group of children would be presenting their work but the whole class would be listening. Yes group work, especially with computers. Each group found information on different forms of transport."*

This mixing of groups gave all pupils the opportunity to contribute according to their talents, e.g, it wasn't always the bright pupil who was confident with the technology, or was able to illustrate projects with artwork:

*"Working in a mixed ability group has helped the weaker children develop their confidence."*

Another teacher commented that:

*"Pupils took responsibility for work and exerted peer-pressure on others who were not contributing."*

Teachers also reported that self-esteem was greatly enhanced by pupils working together in this way. Comments such as:

*"Confidence, increased self-esteem, team work, collaboration – looking at the world beyond their own needs."*

*"Self-esteem improved in certain circumstances. Teamwork improved. Pride in their own achievements."*

*"Pupils highly motivated to take part in project activities – interest sustained."*

were commonly used by teachers when asked to outline benefits of being involved in the Dissolving Boundaries programme.

Teamwork did not always come automatically to children. A small number of teachers remarked how their pupils had had some arguments within the groups, but now *"were learning to cooperate"*.

## **5.2 Collaboration between pupils in the two partner schools**

Secondly, there is teamwork involved in producing a joint project with the partner school. Here, for example a group consists of 4-6 pupils from school A and 4-6 pupils from school B, working together. Examples of such projects in the Primary Sector are Animal Rights, Transport in our area, The effects of the Famine in Ireland, Lifestyle in the Recent Past, Local History, Myths and Legends. Schools in the Post-Primary sector worked together on projects such as Imperialism, Human Rights, Pattern in Art, Careers, The Plantation of Ulster in our Area and the creation of a drama.

The emphasis in Dissolving Boundaries is always on collaboration, but it is essential that this collaboration is firmly based on curricular work. The words of one teacher sum up this emphasis: *"Dissolving Boundaries is a very curricular friendly project"*.

Curricular learning was greatly improved by collaboration between classes as motivation was improved:

*"The pupils were more motivated to research the topic (The Vikings). They discovered things about the Vikings in greater depth than they would otherwise have done."*

Producing work for a "real group of people" helped the development of language skills, attention to detail and listening skills.

Teachers continually re-iterated the fact that work was more focussed because the sense of audience gave it added purpose:

*"It gave pupils another means of looking at Geography – location of partner school and project-linked information."*

(Special School, NI)

*"Creative writing in English – punctuation, spelling all significantly improved."*

(Primary ROI)

*"The children learned so much from each other and were prepared to find out things related to each topic for one another."*

(Primary, NI)

*"Everything we did by videoconference was related to curriculum and real effort was made by pupils to give 100% when they knew the videoconference was on that topic."*

(Primary, NI)

*"Using PowerPoint to create projects on particular areas of their history and SPHE curricula, made their work more focussed and purposeful. They were also concerned about presentation because of the external audience."*

(Primary ROI)

Teachers often used areas of local interest to include in projects. This helped with curriculum as described by one post-primary teacher:

*"Local case studies of historic buildings, issues lend relevance to more abstract curricular issues."*

Particularly within the Primary and Special sectors, cross-curricular learning took place:

*"There was greater incentive for cross curricular learning. There was a high level of interest. The project tied in with history, geography, maths, science and English."*

(Primary, ROI)

*"A cross-curricular approach created a positive learning environment. ICT skills were improved and collaborative learning took place."*

Because two classes worked together, revision took place in "a fun environment" and sometimes sharing information led to quicker learning:

*"Pupils learn new information ahead of the normal timescale on the curriculum."*

(Post Primary, ROI)

A message in NINE illustrates how one teacher feels about collaboration between schools:

*"I consider the project on Kenya to be one of the most successful projects I have done with a class. There is no doubt that they got hugely involved and we have a great display in the hall with the project work, extracts from NINE and the videoconferences. It certainly was a great learning experience for all concerned."*

And a response, also in NINE from the partner school:

*"My class are thoroughly enjoying the web crossing (NINE) this year and are badgering me to go to the computer suite. They seem to have developed a very good rapport with their (name of school) counterparts which is what this is all about. In addition this has added a new and exciting dimension to our Kenya Project. I'm convinced that they have a much wider knowledge of the country because of the e-learning aspect."*

*"Both schools are very interested in continuing with the project next year. The whole experience was a very positive one for both pupils and teachers alike."*

The impact of the Dissolving Boundaries teamwork on learning in a deaf/hearing collaboration was summed up as follows:

- It increased attendance on Fridays (the day set aside for Dissolving Boundaries work).

- It broadened pupils' outlook. Prior to Dissolving Boundaries, they had no experience of Northern Ireland. This new experience was considered very valuable.
- They enjoyed it, and got a "great buzz".
- One girl who is quite withdrawn really got involved, even on the videoconference.
- Pupils', writing skills have improved they are composing better messages.
- They developed better ICT skills. Most did not know how to send an email at the start.

### **5.3 Collaboration between teachers in the two partner schools**

Thirdly, teachers in the two-partnered schools work together as a team. The beginning of this collaboration takes place when teachers meet at a planning conference, decide together what area of the curriculum they wish to work on, choose a topic, fill in a planning document and sign it. They also decide what the end product of the interaction will be, i.e. web pages, PowerPoint presentation, printed material etc and when they return to their respective schools, work with their pupils towards this goal.

In certain schools, where more than one teacher was involved in Dissolving Boundaries, there was evidence of teamwork between teachers in the school as well as between partnered schools. One teacher describes learning about "modelling" from a colleague. Many teachers noted the feeling of support within the school when they had a colleague involved.

And the impact of teachers from different schools working together was often highlighted. Teachers felt it was very useful to learn from each other, from two different systems of education. This was considered by many to be an important dimension of the project. The Staffroom in each individual project in NINE was a very useful venue for the exchange of ideas. This is what Flecknoe (2002) refers to as the "benefits of virtual discussion as a means of support amongst colleagues". Primary school teachers put in an average of 33 messages per staffroom, with two staffrooms containing over 80 messages.

*"We really enjoyed our video link up-your children are so friendly and my girls were delighted to see who was who- but likewise I think the girls were a bit reticent but hopefully they'll become more confident as time goes on. The girls wanted to know why you had a white phone since ours is black? I didn't even notice! I was reading up on ideas for more successful video conferencing and one was Quizzes so I thought that maybe I could get my girls to make out a few simple questions-some based on The Worst Witch-what do you think."*

And the following messages also show support between colleagues:

*"Hi girls, we will be in the computer room ready to video conference at 9.30am. Will try the numbers you gave us. Our classes are excited too. Thanks for the power point and brochures - they are really good. We also did a power point before Christmas but it is too big to put on one disk. If we take a few pictures out it might work!! See you tomorrow!"*

*"Hi... My class have reached chapter 6 in 'Under a Hawthorn Tree'. Considering what we discussed earlier in the year, I wondered would it be possible for us to do a little bit of joint work on this. If you remember, I explained how I'd done an activity before on this book via a conferencing site. Basically I would ask my kids to think of a question they'd like to ask any one of the characters from the book about any aspect of the book up until chapter 6. For example, they might email a question to their partner/s something like this. Question for Michael O'Driscoll - How did you feel the evening your mother set off to look for your father? Or Question for Mary Kate - Did you want the children to stay with you when you found them hiding in the gorse bushes after escaping from Tom Daly on the road to the workhouse? Your kids would then reply, basing their answers on facts from the book and showing some empathy for the characters of course. For example, Mary Kate might reply saying 'I so wanted to offer the children beds and food in my wee cottage but I just don't have the room. I've only one bed and anyway if I was caught with them they'd make me pay more rent. I can hardly afford what I have to pay already. I felt so sorry for the dears. I gave them some ointments to help them on journey and prayed that God would look over them. I don't believe they'll ever make it the whole way to Castletaggert. They'll end up dead on the roadside like I suspect their are."*

*"Its a good exercise for both classes. Maybe towards the end of the book, we could reverse it and your class could ask the questions with mine playing the part of the characters. Let me know if you think this is suitable. We'll also have to try and get the phones up and running again soon. Speak to you soon."*

## 6 Curricular Learning

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Teachers were asked to rate the impact of Dissolving Boundaries on curricular learning, including communication skills. 38% considered it made a very significant impact, with 45% considering it as significant impact. This impact was most evident in the special sector, with 68% of teachers there reporting that Dissolving Boundaries had made a very significant impact on pupils' curricular learning and 28% regarding the impact as significant. Within the primary sector, 33% of teachers considered that Dissolving Boundaries had made a very significant impact on curricular learning while 50% thought it made a significant impact. In the post-primary sector, 24% of teachers considered that the impact of the Dissolving Boundaries Programme on curricular learning was very significant, with 52% considering it as significant.

Curricular learning through Dissolving Boundaries was more in evidence in the ROI, with 91% of teachers there reporting a significant or very significant impact. 75% of teachers in NI regarded the impact of learning from Dissolving Boundaries as significant or very significant.

In one partnership, the teacher drew particular attention to improved writing skills. Pupils are not allowed to write in text abbreviations, and there is no spell check on NINE. They make some mistakes, but get better. They are learning typing, keyboard skills, and email skills. They also learn about values, conservation, and local history.

Pupils thought the project was worthwhile for the following reasons:

*"I got to know girls in a different school. We did work on myths and legends and did lots of artwork."*

*"We got to talk to other people and find out what they like, what they dislike and what their favourite things are. We got to use the digital camera, it was great."*

*"I liked the trip a lot and the communication over the internet."*

*"Yes – you get to show all the hard work that you have done and get to show someone and be proud of your work."*

When asked for suggestions as to how the programme could be improved for the following year, pupils said:

*"I would like to do more video conferencing to find out more about each other."*

*"I would also like to do more artwork for our projects because I enjoyed drawing and painting."*

## 7 Communication skills

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Linked with the data on curricular learning was the question of learning better communication skills. Overall there was a very positive response from teachers, with the majority commenting on improvement in all areas of communication - reading, writing, speaking, listening. The following are quotes from teachers in response to the question: Did pupils learn better oral communication skills, writing skills?

*"Yes – incentives to write for an audience. Good motivation."*  
(Primary, NI)

*"Yes, better literacy/genres of writing/listening skills."*  
(Primary, ROI)

*"On the videophone they had to speak clearly. In PowerPoint they had to use writing skills in their slides – clear, concise sentences."*

*"Pupils became more confident in talking to partners (who initially were strangers.). When preparing for contact with partner school, they structured what they wanted to say – more thought put in by pupils. An overall positive experience for them, overall communication skills were improved."*  
(Special ROI)

*"The pupils' communication skills, especially those involved with videoconferencing and face-to-face meetings improved significantly."*  
(Post Primary, ROI)

*"Pupils appreciated the importance of listening, working in groups and taking turns."*  
(Primary, ROI)

*"My class were reluctant to speak to the other class during videoconferencing – we can't get them to stop now!"*  
(Primary, NI)

*"Writing skills definitely improved and videoconferences helped with oral skills and self-esteem."*  
(Primary, NI)

## 8 Face-to-face meetings

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Of the total number of schools currently in Dissolving Boundaries, 63% took part in a face-to-face meeting within the last academic year. Of the cohort of schools that joined the Programme in 2003, 92% took part in face-to-face meetings. Seven partnerships reported having two face-to-face meetings. This was obviously easier to organise if the schools were in relatively close proximity to each other.

*"We had 2 face-to-face meetings. These were very successful. Pupils interacted socially, no shyness, activity was enjoyable and suitable, pupils were thrilled to meet new friends and socialise with them. Best part of the project as far as pupils were concerned!"*

(Special School, NI)

Several of the face-to-face meetings involved an overnight stay. One primary school from the Republic of Ireland reported on a 2 day residential as being "*a great success and we were very pleased with the outcome*". Another school, a special school from Northern Ireland reported on a two-day residential visit to Galway with their partner school as having "*a huge impact, and we were exceptionally pleased with the outcomes.*"

Venues varied. Some schools chose to meet in a central location. Many schools selected a venue that was linked to the theme which was central to the inter-school project, such as:

- Plantation of Ulster Centre, Draperstown,
- Patrick Kavanagh Centre, Inniskeen, Co Monaghan
- Viking Centre, Dublin,
- Kilmainham Gaol, Dublin
- Palace Stables, Armagh (Victorian workshop),
- Transport Museum, Cultra, Belfast
- Ulster American Folk Park, Omagh

*"Our visit reinforced the curricular aspect – history. It also meant the pupils met each other and it livened up our (next) video link. However, a longer meeting would have cemented the links."*

(Post Primary teacher)

Some schools visited the partner school and in several cases this visit was reciprocated.

Many teachers regarded these face-to-face meetings, as a very strong element in the project. It was recommended that face-to-face meetings should take place early in the project, and where this happened, the meetings did help to foster much stronger relationships between pupils.

*"The face-to-face meeting was vital. It made concrete the other media used in the overall Dissolving Boundaries Project."*

*"Our face-to-face occurred in the first term – this was motivating. It was a brilliant day and students interacted well. It was well worth the effort and we hope to have a second meeting in the summer term."*  
(Post Primary, ROI)

Having met each other face-to-face, pupils found it easier to communicate by videophone and computer conferencing afterwards. Some teachers reported that the face-to-face meeting gave new impetus to the project.

*"Hi ... I just wanted to thank you and your class for such a wonderful day yesterday, my class thoroughly enjoyed it, as did myself, Kay and Patricia. I hope you all got home safely and without any train delays. I feel that the day was successful in that the children certainly got to know each other and this can only help with our future video links and e-mails. The only unfortunate part of the day was the long journey, which you and the girls had. Hope this didn't spoil things for you too much. Thanks again."*

And from a pupil on that same trip:

*"Dear Caroline and Helen it was great fun meeting you. I liked painting and bowling. But most of all I liked meeting you. Do you remember the alien talking you did Caroline? Do you remember flicking chips at me Helen? Well bye for now, you two are my best friends from Cork. Lots of Love from ..."*

Another pupil expresses her satisfaction with a face-to-face meeting:

*"Hi Wacky Wizards Gemma here did you have a good time at the Leisureplex? I really enjoyed it. Did you like the pottery painting? I thought it was cool I really enjoyed the quiz hope you will enjoy ours. The questions won't be too hard. Can you say hi to Sarah from the Chanting Children. I really enjoyed painting with you. My teacher has a picture of the two of us with our pottery. Well Wacky Wizards I*

*hope you enjoy the `questions on the videophone. Talk to you soon  
From GEMMA."*

A message from one teacher expresses the value of the face-to-face meeting:

*"Hello Beatrice and Trevor, Thank you all so much for an absolutely unique and wonderful experience. We will never forget our face-to-face meeting. It was worth the huge effort put in. I look forward to hearing the feed back in class and we will get the kids to share their feelings on it. Maria and Pat and myself were truly taken by everything. Thank you all- it was so different."*

Another teacher commented:

*"Big impact, very pleased, put everything/everybody in context – made e-communication more worthwhile."*

(Primary, ROI)

And coming from different social backgrounds as well as from different jurisdictions did not pose a problem:

*"It showed that the children from different backgrounds have a lot in common as they bonded really well."*

(Primary, ROI)

The face-to-face was described by a primary school teacher from Northern Ireland as the *"icing on the cake after coming through profiles to computer conferencing to videoconferencing."*

## 9 Conclusion

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The following excerpts from the NCCA (NCCA 2004) guidelines give a flavour of potential benefits from the use of ICT in the classroom.

*"ICT offers the child opportunities to develop social skills through turn taking, sharing resources and helping other children in collaborative work."*

*"Collaborative classroom based projects which use technology features such as threaded discussion and videoconferencing can be used by children to support one another in the learning process."*

*"Presentation software offers children opportunities to share their work with others in the same class, within the school, with parents and partner schools when they create and record examples of their work."*

(NCCA, 2004)

There is still plenty of cynicism around the whole area of integrating ICT into the classroom and some research shows that the full value of new technologies is not being exploited in schools.

The focus of this study has been on the potential of the Dissolving Boundaries programme to effect change in the classroom through the use of ICT. Our research shows that Dissolving Boundaries teachers consider the learning impact of new technologies as very valid. Teachers and pupils alike have embraced the new technologies of computer conferencing and videoconferencing. They have used PowerPoint and web design applications to produce valuable collaborative material. Teachers have adapted their teaching strategies to integrate ICT into the curriculum. They have created learning opportunities based on their normal curriculum, but with added input from the other school. They have increased teamwork within the classroom itself and across school boundaries. They have "broken down the walls of the classroom" using modern technology in an innovative way and have appreciated the benefits of using ICT tools to enhance and sometimes transform their teaching and the pupils' learning. They have recognised Dissolving Boundaries as an agent for change in the classroom.

## Appendix One - List of Participating Schools

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### Northern Ireland

<b>Name of School</b>	<b>Town</b>	<b>County</b>
<b>Acorn Integrated Primary School</b>	Carrickfergus	Co Antrim
<b>Aughnacloy Primary School</b>	Aughnacloy	Co Tyrone
<b>Ballydown Primary School</b>	Banbridge	Co Down
<b>Ballywalter Primary School</b>	Newtownards	Co Down
<b>Beechlawn Special School</b>	Hillsborough	Co Down
<b>Belvoir Park Primary School</b>	Belfast	
<b>Bloomfield Collegiate</b>	Belfast	
<b>Brookfield Special School</b>	Moir, Craigavon	Co Armagh
<b>Bushmills Primary School</b>	Bushmills	Co Antrim
<b>Cedar Lodge Special School</b>	Belfast	Co Antrim
<b>Churchill Primary School</b>	Caledon	Co Tyrone
<b>Cranmore Integrated Primary School</b>	Belfast	
<b>Dromore High School</b>	Dromore	Co Down
<b>Dunfane Special School</b>	Ballymena	Co Antrim
<b>Edendork Primary School</b>	Dungannon	Co Tyrone
<b>Erne Integrated College</b>	Enniskillen	Co Fermanagh
<b>Erne Special School</b>	Enniskillen	Co Fermanagh
<b>Gaelscoil Ui Dhochartaigh</b>	Strabane	Co Tyrone
<b>Garryduff Primary School</b>	Ballymoney	Co Antrim
<b>Gilnahirk Primary School</b>	Belfast	
<b>Glenside Special School</b>	Strabane	Co Tyrone
<b>Harberton Special School</b>	Belfast	Co Antrim
<b>Hazelwood Integrated PS</b>	Newtownabbey	Co Antrim
<b>Hillhall Primary School</b>	Lisburn	Co Antrim
<b>Holy Child Primary School</b>	Andersonstown, Belfast	Co Antrim
<b>Holy Child Primary School</b>	Creggan	Co L'Derry
<b>Holy Trinity Primary School</b>	Enniskillen	Co Fermanagh
<b>Jordanstown Schools</b>	Newtownabbey	Co Antrim
<b>Kilronan Special School</b>	Magherafelt	Co L'Derry
<b>Legamaddy Primary School</b>	Downpatrick	Co Down
<b>Limavady Grammar School</b>	Limavady	Co L'Derry
<b>Lisanally Special School</b>	Armagh	Co Armagh
<b>Lisnasharragh Primary School</b>	Belfast	Co Antrim
<b>Loreto Grammar School</b>	Omagh	Co Tyrone
<b>Newbuildings Primary School</b>	Londonderry	Co L'Derry
<b>Oakgrove Integrated PS</b>	Derry	Co L'Derry
<b>Oakwood Integrated PS</b>	Derriaghy, Belfast	
<b>Our Lady's Grammar School</b>	Newry	Co Down
<b>Parkview Special School</b>	Lisburn	Co Antrim
<b>Portstewart Primary School</b>	Portstewart	Co L'Derry
<b>Rainey Endowed School</b>	Magherafelt	Co L'Derry
<b>Regent House</b>	Newtownards	Co Down
<b>Seaview Primary School</b>	Belfast	Co Antrim
<b>Shimna Integrated College</b>	Newcastle	Co Down
<b>Slemish Integrated College</b>	Ballymena	Co Antrim
<b>Sperrin Integrated College</b>	Magherafelt	Co L'Derry
<b>St Aloysius Primary School</b>	Lisburn	Co Antrim

<b>St Anne's Primary School</b>	Strabane	Co Tyrone
<b>St Brigids Primary School</b>	Maghera	Co L'Derry
<b>St Brigid's Primary School</b>	Ballymoney	Co Antrim
<b>St Ciaran's Primary School</b>	Cushendun, Ballymena	Co Antrim
<b>St Colman's College</b>	Newry	Co Down
<b>St Columbanus College</b>	Bangor	Co Down
<b>St Francis Primary School</b>	Lurgan	Co Armagh
<b>St Gabriel's Boys' College</b>	Belfast	Co Antrim
<b>St John's High School</b>	Dromore, Omagh	Co Tyrone
<b>St John's Primary School</b>	Coleraine	Co L'Derry
<b>St John's Primary School</b>	Swatragh, Maghera	Co L'Derry
<b>St Joseph's Primary School</b>	Belfast	
<b>St Joseph's Primary School</b>	Newry	Co Down
<b>St Louis Grammar School</b>	Kilkeel	Co Down
<b>St Malachy's High School</b>	Castlewellan	Co Down
<b>St Malachy's Primary School</b>	Castlewellan	Co Down
<b>St Mark's Primary School</b>	Twinbrook, Belfast	
<b>St Mary's CBGS</b>	Belfast	
<b>St Mary's High School</b>	Downpatrick	Co Down
<b>St Mary's Primary School</b>	Annalong, Newry	Co Down
<b>St Mary's Primary School</b>	Cabra, Dungannon	Co Tyrone
<b>St Mary's Primary School</b>	Altinure, Park Village	Co L'Derry
<b>St Michael's Grammar School</b>	Lurgan, Craigavon	Co Armagh
<b>St Teresa's Primary School</b>	Omagh	Co Tyrone
<b>St Vincent's Centre</b>	Belfast	
<b>Strabane Primary School</b>	Strabane	Co Tyrone
<b>Sullivan Upper</b>	Hollywood	Co Down
<b>Wellington College</b>	Belfast	Co Antrim
<b>Wheatfield Primary School</b>	Belfast	Co Antrim

## Republic of Ireland

<b>Name of School</b>	<b>Town</b>	<b>County</b>
<b>Killavil National School</b>	Ballymote	Co Sligo
<b>St Mary's NS</b>	Templeboy	Co Sligo
<b>Gaelscoil Chnoc Na Ré</b>	Sligeach	Co Sligo
<b>Sligo Grammar School</b>	Sligo	
<b>Mercy College</b>	Sligo	Co Sligo
<b>St Kevin's Boys NS</b>	Finglas West	Dublin 11
<b>Scoil Mhuire</b>	Co Dublin	
<b>Belvedere College</b>	Dublin 1	
<b>St Joseph's Secondary School</b>	Rush	Co Dublin
<b>Scoil Chiaráin</b>	Glasnevin	Dublin 11
<b>Scoil Eoin</b>	Co Cork	
<b>Gaelscoil Dr Uí Shúilleabháin</b>	An Sciobaírin	Co Cork
<b>Klimeen NS</b>	Clonakilty	Co Cork
<b>Rossa College</b>		Co Cork
<b>Kinsale Community School</b>		Co Cork
<b>St Goban's College</b>	Bantry	Co Cork
<b>Coolfancy NS</b>		Co Wicklow
<b>Scoil Mhuire</b>	Wexford	Co Wexford
<b>Presentation College</b>	Carlow	Co Carlow
<b>Presentation Secondary</b>	Wexford	Co Wexford
<b>St Munchins Girls NS</b>	Limerick	
<b>Scoil Ide Naofa</b>	Ballagh	Co Limerick
<b>Castletroy College</b>	Castletroy	Limerick
<b>Villiers Secondary School</b>	Limerick	
<b>The Mid West School of Hearing Impaired</b>	Limerick	
<b>Gaelscoil O Doghair</b>	Contae Luimnigh	
<b>Lucan Community College</b>	Lucan	Co Dublin
<b>St Brigid's National School</b>	Castleknock	Dublin 15
<b>St Patrick's National School</b>	Dublin 9	
<b>N Dublin National School Project</b>	Dublin 9	
<b>Corpus Christi National School</b>	Limerick	Co Limerick
<b>St Patrick's BNS</b>	Limerick	Co Limerick
<b>Galvone NS</b>	Limerick	Co Limerick
<b>Scoil an Athair Maitiú (Cailini)</b>	Cork	
<b>Scoil Mhuire</b>	Tullamore	Co Offaly
<b>Scoil Ide</b>	Limerick	Co Limerick
<b>Heywood Community School</b>		Co Offaly
<b>Scoil Na Mainistreach De La Salle</b>	Kildare	Co Kildare
<b>Castledermot CC</b>		Co Kildare
<b>St Raphaels SNS</b>		Co Kildare
<b>Scoil Naomh Eirc</b>	Ard Fhearta	Co Kerry
<b>Sacred Heart NS (Presentation primary)</b>	Tralee	Co Kerry
<b>Freastogail Muire Mxd NS</b>	Abbeydorney	Tralee
<b>Mercy Secondary School</b>	Tralee	Co Kerry
<b>Presentation Secondary School</b>		Co Kerry
<b>St Ita's &amp; St Joseph's School</b>	Tralee	Co Kerry
<b>St Clare's Primary School</b>	Dublin 6	

<b>Our Lady of the Wayside NS</b>	Dublin 18	
<b>St Kieran's NS for Traveller Children</b>	Bray	Co Wicklow
<b>St Tiernan's CS</b>	Sandyford Road	Dublin 16
<b>St Augustine's Special School</b>	Blackrock	Co Dublin
<b>Scoil Bhríde</b>	Kilcormac	Co Offaly
<b>St Colmcille's NS</b>	Athlone	Co Westmeath
<b>Ferbane Community College</b>		Co Offaly
<b>Mercy Secondary</b>		Co Offaly
<b>St Hilda's School</b>	Athlone	Co Westmeath
<b>Scoil Raifteiri</b>		Co Mayo
<b>St Peter's NS</b>	Castlebar	Co Mayo
<b>Ballintubber NS</b>		Co Mayo
<b>St Louis Community School</b>		Co Mayo
<b>St Brendan's NS</b>	Hugginstown	Co Kilkenny
<b>St Mary's NS</b>		Co Tipperary
<b>St Mary's Academy CBS</b>	Carlow	Co Carlow
<b>Colaiste Mhuire</b>	Via Thurles	Co Tipperary
<b>Ursuline Secondary School</b>	Thurles	Co Tipperary
<b>School of the Holy Spirit</b>	Kilkenny	Co Kilkenny
<b>St Paul's Senior Primary School</b>	Dublin 12	
<b>Inchicore National School</b>	Inchicore	Dublin 10
<b>Scoil Cnoc Mhuire Senior</b>	Tallaght	Dublin 24
<b>St Mary's School for Deaf Girls</b>	Dominican Convent	Cabra
<b>Stewart's School</b>	Palmerstown	Dublin 20
<b>Knockconan NS</b>	Emyvale	Co Monaghan
<b>Killeevan NS</b>		Co Monaghan
<b>St Michael's Senior NS</b>		Co Cavan
<b>Castleblayney College</b>		Co Monaghan
<b>Patrician High School</b>		Co Monaghan
<b>Holy Family School</b>		Co Cavan
<b>St Patrick's NS</b>	Garristown	Co Dublin
<b>Knockcommon NS</b>	Beauparc	Navan
<b>Kilbride NS</b>	Trim	Co Meath
<b>Scoil Mhuire Post-Primary School</b>		Co Meath
<b>St Ultan's School</b>	Navan	Co Meath
<b>St Vincent's Convent NS</b>	Cork	
<b>Gaelscoil Mhacan</b>	Cork	
<b>Scoil Bernadette</b>	Montenotte	Cork

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