Schola Europaea

PANORAMA
European School Brussels II

TIC dans les Écoles européennes
ICT in the European Schools
ICT in den Europäischen Schulen
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Research on the European Schools system has generally consisted of a number of ‘outsider’ studies which either look at our system as an educational experiment (Swan, 1996) or those studies which report on different aspects of our system (European Parliament report on Baccalaureate graduates, 2008). PANORAMA is an important pedagogical journal which allows us to take a predominantly ‘insider’ view which, in recent years, has tended to reflect on actual pedagogic practice which can be observed across classrooms throughout our 14 schools. This edition of PANORAMA has chosen Information and Communications Technology as its theme. ICT has become a major issue in schools and in education systems around the world. In this Digital Age, a new generation of ‘digital natives’ are using emerging technologies to communicate, to be entertained, to socialise and to learn in ways that were impossible a generation ago. Education systems have tried to invest in, to adapt to and innovate within this new digital landscape and it is important now to try to take stock of how learning, teaching and schooling have been impacted by this recent technological (and socio-cultural) revolution.

The articles in this journal are divided into three main groups. Firstly, there are some wide-ranging articles which attempt to survey the ‘bigger picture’ which exists around ICT in general and in the European school system in particular. A second group of articles looks at good classroom practice using ICT in primary and secondary classrooms across our system. Finally, a third group of articles focus on teacher training models and e-Learning issues which are now becoming more crucial as teachers and schools become more ‘e-mature’ and explore the transformational potential of ICT within both traditional and emerging pedagogies. An ICT-themed journal such as this one, provides a ‘snapshot’ of thinking and practice in the ICT field which is constrained by both context and time. We believe that there is a need for a place where colleagues can update, collaborate and share experiences and information on ICT practice which
continues beyond the publication of a journal such as PANORAMA. Therefore, we have set up a virtual space on Learning Gateway where translations of some of these articles can be found as well as electronic copies of the PANORAMA journal and a ‘forum’ area for colleagues to discuss and share good ICT practice. The link for this virtual area is: https://portal.lg.eursc.org/panorama

This edition of PANORAMA has been edited and produced by the European School Brussels II (Woluwe). I would like to express our sincere gratitude to all of the teachers, inspectors and technical experts who contributed to this edition. I would also like to thank Aude Vicenzi, our communications secretary at Woluwe, who was the vital link between the contributors, editors and the production team. Finally, I would like to thank my colleagues Chris Herring and Jose Fragoso, editors of this journal, for the many hours of meetings and email exchanges which were required to produce such a quality journal of which we can be proud.

The development of ICT policy in the European Schools is both a ‘bottom-up’ as well as a ‘top-down’ process. We hope that the content, professionalism and enthusiasm contained in the articles in this volume will inspire colleagues to become active participants in the transformational ICT processes which continue to develop in our 14 schools.

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March 2010
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VORWORT
VON RICHARD GALVIN, DIREKTOR


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Im März 2010
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Les recherches consacrées aux Ecoles européennes ont été pour la plupart réalisées par des chercheurs extérieurs qui considéraient notre système comme une expérience pédagogique particulière (Swan, 1996) ou alors par ceux dont l’étude portait sur des points particuliers de notre système (Rapport du Parlement européen sur les bacheliers des Ecoles européennes, 2008). PANORAMA est une publication pédagogique importante qui nous permet de présenter un point de vue intérieur et qui, ces dernières années s’est davantage orientée vers une réflexion sur les pratiques pédagogiques qui peuvent être observées dans les différentes salles de classe de nos 14 écoles. Le thème choisi pour cette présente édition de PANORAMA est celui des Techniques de l’Information et de la Communication. Les TIC sont devenues une préoccupation majeure dans les écoles et les systèmes d’éducation du monde entier. A l’âge informatique, une nouvelle génération de « digital natives » est apparue, utilisant les nouvelles technologies pour communiquer, se distraire, créer des liens sociaux mais aussi apprendre, d’une façon inimaginable il y a quelques années seulement. Les systèmes d’éducation ont investi dans les TIC et tenté de s’adapter et d’innover dans ce nouveau paysage informatique ; il est temps maintenant de comprendre quelles sont les conséquences de cette révolution technologique -mais aussi socio-culturelle- sur l’apprentissage, l’enseignement et le système scolaire lui-même.

Les articles de cette publication sont regroupés en trois parties. Tout d’abord, un certain nombre d’articles tente de présenter un cadre général sur les TIC et les Ecoles européennes en particulier. Ensuite, sont présentées un certain nombre de « bonnes pratiques » concernant l’utilisation des TIC dans les classes du primaire et du secondaire à l’intérieur de notre système. Enfin, les derniers articles sont consacrés aux modèles de formation des enseignants et aux problèmes du « e-learning », préoccupations d’autant plus cruciales que les écoles et les enseignants sont davantage « e-matures », les potentialités des TIC étant davantage exploitées dans les pratiques pédagogiques innovantes mais aussi dans des cadres plus traditionnels. L’édition de cette publication consacrée aux TIC propose un instantané de la réflexion et de la pratique pédagogique mais celui-ci est limité dans le
temps ainsi que par les contraintes de l’édition. Nous pensons qu’aujourd’hui existe un réel besoin pour un espace d’échanges, de collaboration où les collègues pourraient mettre à jour leurs connaissances sur les TIC et les pratiques pédagogiques pour prolonger le contenu de ce numéro de PANORAMA. Nous avons donc mis en place un espace virtuel sur Learning Gateway où l’on peut trouver notamment la version électronique de cette publication de PANORAMA, ainsi que la traduction de certains des articles ; enfin un forum permet à chacun de s’exprimer et d’échanger dans le cadre des bonnes pratiques. Le lien vers cette espace virtuel est : https://portal.lg.eursc/panorama

Ce numéro de PANORAMA a été publié sous la responsabilité de l’Ecole européenne de Bruxelles II et je voudrais exprimer ici ma gratitude la plus vive à tous les enseignants, inspecteurs et experts techniques qui ont contribué à cette publication. Je tiens également à remercier Aude Vicenzi, notre secrétaire en communication à Woluwe qui a été le lien fondamental entre les différents contributeurs, les éditeurs et l’équipe responsable. Enfin, je suis débiteur envers mes collègues Chris Herring et Jose Fragoso, éditeurs de ce numéro, pour toutes les nombreuses heures de réunion et échanges par courriels nécessaires à la réalisation d’une publication dont nous pouvons être fiers de la qualité. Le développement des TIC dans les Ecoles européennes est à la fois le résultat d’une « conception descendante » aussi bien que d’une remontée « conception ascendante ». Nous espérons que le contenu, le professionnalisme et l’enthousiasme contenus dans les différents articles de ce numéro inciteront davantage de collègues à participer activement au développement des TICE dans nos 14 écoles européennes.

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Mars 2010
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This article concerns the adoption of state of the art technology at the European schools in two differentiated areas: school administration and the pedagogical use of ICT for teaching and learning. In order to envisage the future evolution for the coming years, some recent technology trends are described, analyzing the impact that those trends will have in our schools.

New information and communications technologies (ICT) are seen as enablers of innovation, productivity, efficiency and economic growth in all sectors of the Economy. Because their effective use enables the requirements of the world of work to be met, but also because higher education uses so-called new technologies, the European Schools regard ICT as a basic skill to be acquired by their pupils and to be used by their teaching and administrative staff.
**ICT IN ADMINISTRATION:**
**State of the art**

The school administration started its computerization at the end of the 1980s, with the development of tailor-made software applications for administrative management purposes and the installation of servers and X-terminals. The terminals were soon replaced by isolated personal computers (PCs) used mainly for word processing.

Nowadays all administration staff work with powerful networked PCs. All PCs in all schools and the Office of the Secretary General are interconnected through a private network where a set of services and collaborative tools are deployed securely. The administrative applications and some services are being modernized in order to be linked to the internet and support secure remote access for staff, pupils and parents. Although there is a high degree of computerization, there is still a long way to go until efficient paperless administration is a reality. Paper files still move from one desk to another, as in many cases physical signatures are still needed, so it is necessary to sign a transaction digitally, then print it, sign it physically and then send the paper to another office. To achieve a paperless office it will be necessary to rethink and reform all current processes in order to use the technology to reduce unnecessary redundant work and maximize efficiency.

ICT has greatly helped the dissemination of information and the transparency of the system. All schools and the Office of the Secretary General are running web sites and specific Documentary Portals that allow the diffusion of all kind of documents. Parents, staff and the pupils’ association also help to share this information by means of mailings and parallel web sites.

**ICT IN THE CLASSROOM:**
**State of the art**

The first computers for the use of pupils were introduced in the late 1990s. In 1999 the Board of Governors approved a syllabus for teaching ICT at the European Schools. The first ICT Plan was drafted in 2001, having as its main objective the standardized use of computer-based tools across the schools in order to give pupils equal opportunities when studying ICT. This objective has been continued with the second and third ICT plans.

By January 2010 the classrooms of our 14 schools had been equipped with 3,737 personal computers, 907 projectors and 417 interactive whiteboards. All schools have ICT rooms that are used not only for teaching ICT but also for many other subjects. In addition, many schools use mobile ICT rooms with laptop trolleys that can be easily moved from one class to another.
Many teachers have interactive whiteboards in their classrooms so they can not only project the content of their PCs but can also use interactive educational software so the pupils can work on the board. Moreover, these interactive boards include an authoring tool that allows teachers to build their own interactive exercises. An interschool pedagogical portal, the Learning Gateway, is also available for all teachers, pupils, inspectors and staff to share any kind of digital content and work collaboratively.

Some advanced teachers also use Virtual Learning Environments (VLE) that allow teachers to communicate with pupils out of the classroom; the teacher can prepare and send to each student different assignments and complementary work for their digital homework. The European Schools have worked with different VLEs such as Moodle, Class Server and Studywiz. Nowadays there are also several teachers interacting with their pupils by means of free ‘cloud’ Web applications such as Blogs, ‘Google Sites’ or ‘Windows Live’.

Ideally, in the future, absolutely all teachers and pupils will work with a corporate VLE that will daily update logins and permissions according to the school administration databases. That will allow the ‘business continuity’ of the school in case of closure due to emergencies (snowfall, epidemics, transport strikes). These virtual classrooms will allow us to keep on working in the case of long-term student illness or teacher absence.

Computer hardware is getting cheaper and cheaper so the availability of equipment won’t be a problem; we can assume that almost 100% of our pupils have at least one personal computer connected to the internet at home. The big challenge will be the effective training of the teachers. According to the latest surveys, almost all teachers are comfortable using a personal computer, accessing the internet, emailing and using a projector to display a presentation. However, only a few teachers are able to generate their own content for interactive whiteboards and very few are familiar with VLEs.

Training should address not only the new technologies but also how to use them to transform the way classes are taught. For instance, if the teacher has prepared some content it could be distributed electronically instead of having the pupils copy what’s written on the screen. If we embed ICT into the curriculum, all the dynamics of the class are subject to change.
NEW TECHNOLOGY TRENDS FOR THE COMING YEARS

When talking about ICT it is very difficult to forecast what the future will bring, but we can anticipate some of the technology trends for the 2010s:

**Data, Information and Advanced analytics:** the data stored in our computers and databases will grow non-stop. It is estimated that in five years the data generated in any organization will grow by 650%, and 80% of this new information will be unstructured. This could imply not only that we may not be able to cope with such volumes of data but that the multiple sources of unstructured data would make it more difficult to extract useful information from this data. Nowadays, the European schools are working with annual statistical reports containing the relevant information for the new school year. However, the tendency is not to read an annual report but to obtain accurate on-line data all the time, in real time, in order to be able to forecast and take decisions before problems arise. Business Intelligence should give to the school management all kinds of indicators needed to run a school.

**Green ICT:** we have a lot of work to do in reducing our ICT carbon print. Simple things such as programming the automatic shutdown of all computers in the school can make important changes. Virtualization (a computer server spends 65% of the time idle) is a must. With new virtualization techniques it is possible to use a single server to do the work of several machines. Web conferencing, remote access to systems and tele-working can significantly reduce unnecessary travel. Digital signatures and encryption can also imply the legal acceptance of digital documents.

**Electronic paper - E-books - Tablets:** this will be one of the greenest applications of IT: reducing the number of printed documents. In fact, most of the time we are forced to print digital documents because it is not easy to read them on the screen. This problem has been solved with electronic ink display technology which is designed to mimic the appearance of ordinary ink on paper. Electronic paper displays reflect light like ordinary paper and the ‘reading’ feeling is quite similar to printed paper. There are nowadays many e-book readers on the market that are perfectly suitable for reading novels but they are still not good enough to be used as a replacement for current schoolbooks as they have small screen sizes; they can only display graphics and pictures on grey levels and the screen refresh time is too slow. The recent launch of the iPad, a revolutionary tablet, internet connected, colour device could herald a dramatic change in the e-book industry as it has a huge potential for replacing textbooks. If we see how Apple has managed to sell 250 million mp3 players (iPods) in less than 10 years, changing the music business in a few years, then they might have a chance to do the same with the book industry and we might in the future see a digital tablet in all school backpacks.
Social networking: Wikis, Blogs, Facebook and Twitter are some of the most well-known names of the so-called Web 2.0. Two thirds of the world’s internet population visit social networking sites, accounting for almost 10% of all internet time. At the beginning of 2010, Facebook had more than 350 million active users; every month there are more than 11 million people (as many people as the current Belgian population) joining this network. Most of our pupils are members, so there will surely come in the near future some useful educational applications that could be worth investing in.

Mobile computing: this is already a reality as people buy more laptops than desktops. 3G connected smartphones are becoming standard, and the new connected devices such as the brand new iPad will make wireless mobile computing a must. Nowadays, there are some schools that are deploying some wireless networks but it seems that in the near future campus wireless networks offering internet connectivity for pupils, teachers and staff will be quite standard. Today, the great majority of IT services are offered in the cloud, which means that our data is on the internet and we need a fast internet in order to work. Some schools have still to improve their connectivity levels. The schools located in cities have a lot of opportunities; however, for schools in the countryside the connectivity prices are still relatively high.

1:1 touch computers: we used to evaluate the ICT development of a school by measuring the ratio of computers to pupils. Nowadays this ratio is 1:6 (one computer for 6 pupils). However, there are several European Union countries that have started projects in order to reach the 1:1 ratio (one computer per child). The computer industry is now offering 400-euro ‘ruggedized’, childproof laptops: drop them, spill liquid on them, these childproof machines can take it. If you add to the package a touch display that can convert the laptop into a tablet, a fast processor, a decent battery that can last for a whole day and wireless connectivity it seems a quite interesting option, especially if those computers can replace photocopies, pocket calculators and textbooks. There are still some open questions about who would have to pay for the computer: parents? School? If a whole school moves to a 1:1 solution there will also be huge problems concerning network bandwidth and wireless network installations in order to cope with such a large number of simultaneous connections. The ICT support at the schools should be also increased accordingly, as our schools typically have a ratio of about one technician for 1,000 pupils.

We are living now in a very exciting period in which we can finally acquire relatively cheap but very advanced hardware and software that could be ‘smartly’ used, transforming the underlying pedagogy, and enhancing student engagement and productivity. Our biggest challenge is how to spread the word and speed up the adoption of technology at the European Schools.

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This article addresses the question of how lessons can be enhanced using ICT, and how ICT can support mother tongue teaching through word processing, the use of interactive resources and interactive whiteboards. It then provides practical ideas on using ICT in cross-curricular lessons.


Cet article aborde la question de la manière dont les leçons peuvent être améliorées en utilisant les TIC, dont les TIC peuvent améliorer l'apprentissage de la langue maternelle grâce au traitement de texte, l’utilisation de ressources interactives et de tableaux blancs interactifs. Il fournit ensuite des idées pratiques sur l’utilisation des TIC dans les leçons interdisciplinaires.
BACKGROUND AND GENERAL INTRODUCTION:

Before joining the European School in Luxembourg I worked in a primary school in the UK for 10 years. For six of those years I was the school’s ICT co-ordinator and a Leading ICT teacher for the county. In this role I introduced interactive whiteboards (“IWB”) in all classrooms, provided training sessions for members of staff, on both hardware and software, set up an ICT club and wrote the school’s ICT policy.

I have decided to write this article so that readers will hopefully find it a useful working document with practical ideas that may be used and adapted for their own teaching.

This article will address the following:

A. The enhancement of a good lesson by the use of ICT and
B. ICT supporting lessons in mother tongue

Due to the word limit the following will be added as an appendix:
Practical suggestions of how ICT can enhance cross-curricular lessons

THE ENHANCEMENT OF A GOOD LESSON BY THE USE OF ICT

There are a number of ways in which a good lesson can be enhanced by the use of ICT. Many teachers will automatically be considering the features of a good lesson in the normal course of planning, so hopefully the following will simply be a reminder. The points are not in any particular order as they are all equally important.

The lesson should be planned effectively with ICT resources noted in the planning. These may include the use of a CD player, websites, IWB, pairwork or individual work on a PC or a visit to the ICT suite. The use of ICT should be noted in the long-term, medium-term and short-term planning documents. Working notes should be recorded after the teaching to provide a record as to the effectiveness of the resources used for future reference.

The teacher should possess good subject knowledge and recognise how ICT supports the learning objectives. There should be a conscious decision as to when and when not to use ICT. Therefore careful planning needs to take place to ensure that the ICT activity chosen is not chosen simply because it would interest the pupils, but also because it supports the learning objective.

Pupils should be challenged and ICT can be used effectively for this purpose. It can extend or support pupils’ learning. Teachers are able to make good use of differentiated questioning from a web address for example when children have to search, skim and scan for information.

Good lessons make effective use of time and the use of ICT should be considered.
Should all children be using ICT throughout the whole of the lesson? Should a group be undertaking independent research and then feedback to other class members? There are many opportunities for the teacher to make best use of time spent using ICT within lessons.

Good lessons should interest, engage and motivate pupils. This is where ICT comes into its own. ICT should add to the learning and not detract from it. There are many wonderful opportunities to bring topics to life by using sound, images such as video clips without sound so that the pupils have to imagine conversations, and images with sound. However, it is important that teachers still consider whether learning is taking place at an appropriate level for all pupils. There should be elements of discussion and different questioning techniques. Teachers may wish to find still clips to support an idea being discussed and project it via a beamer or by the use of an IWB.

Finally, methods and resources used should enable all pupils to learn. Here time should be spent considering whether the teacher and/or the pupils are able to achieve something more efficiently with the use of ICT than without it.

It is important to remember that the use of ICT within lessons should enhance the quality of the lesson and provide useful activities to take the pupils’ learning forward.

ICT SUPPORTING LESSONS IN MOTHER TONGUE

Using ICT in mother tongue lessons provides many effective opportunities to extend pupils’ learning. The use of computers is a powerful and effective tool. Children relish the opportunity to see their work in print and experience increased motivation and satisfaction when they have produced their own work.

This unit will consider the following:

- Pupils’ Use of Word Processing
- The Use of Interactive Texts and Resources
- The Use of Interactive Whiteboards

PUPILS’ USE OF WORD PROCESSING

Any piece of written work can also be undertaken using a word processing program. When introducing a new topic, pupils are often asked to identify the key features of a particular genre which are then recorded on a word document. This document is beamed onto the wall or directly onto a page from an IWB. This writing, created collaboratively by the pupils and teacher, can be clearly seen by everyone and has the advantage of enabling pupils to return to the key features and add to them on different days, by simply retrieving the saved word document. This simple task of saving work and projecting it onto a wall is a very powerful tool. Whole class written work can be undertaken directly into a word document and saved. This in turn can be edited to improve the quality
of the text, manipulated to experiment with paragraphs and highlighted to show certain groups of words, such as adjectives or adverbs. This technique of saving and retrieving written work can be undertaken by the teacher for whole class work, groups for group work and individuals for independent written work.

Advantages for Pupils

There are many skills involved when pupils are asked to word process their work.

Firstly they need to be able to use a keyboard. Many pupils learn this skill from home, but for others, especially the younger pupils, it is a skill that requires practice.

Pupils are able to explore different versions of their written work by revising and redrafting their work. They are able to edit their own work to change the order of the text and understand the reasons for editing. Pupils traditionally find editing a difficult task, but by using a word processing package, the editing becomes instantaneous and much easier than if the same task were to be carried out on paper.

Pupils are able to make use of spell checkers and grammar checkers and make a decision as to the correct choice given.

Pupils can explore different vocabulary by accessing the thesaurus tool, whilst reading their text aloud to see which version they find more effective and suitable for the task. Such changes can be made instantly.

Another advantage is that pupils can experiment with re-sequencing their texts. This is particularly useful when writing instructions or discursive texts when the position of a point in an argument might take more prominence at either the beginning or end of the text.

All pupils are able to present their work neatly regardless of their motor skills. They are able to experiment with the different fonts available and choose ones suitable and appropriate for the task. For example a pupil might choose the font “Chiller” when writing a ghost story, or a story in the style of Gillian Cross, or a spooky poem. They can also experiment with the size of the font, the position of the text on the page and whether the text should be in bold or underlined for headings. All these activities are loved by pupils and at the same time provide a valuable learning activity. For example when pupils are expected to write a piece of Journalistic Writing key features include that the text is written in paragraphs with subheadings and also columns. Pupils are easily able to achieve these requirements when using a word processing package.

By allowing text to be presented in a variety of ways, pupils are able to present and organise their work to meet the needs of different audiences. For example, pupils have taken great pride in producing a class newspaper and bringing their genre to life by giving it meaning. Such an activity can be undertaken as if the pupils were all part of a team producing a real newspaper. This has proved highly successful with increased motivation experienced by all pupils.

Finally, another feature that pupils enjoy is the insertion of images into their written work. These can either be from the web (which requires a certain skill level to search, select and import) or images that children have created themselves. The images could have been uploaded from a camera or created by the pupils themselves in a software package such as Softease. Pupils are then able to manipulate the image on screen by altering the size and position, along with the way the image sits with the text e.g. behind it or on top of it.
Advantages for Teachers

There are not only benefits for pupils, but also for teachers.

- Teachers are able to access pupils’ word processed work and edit it with the child, during the draft stage so that timely learning takes place.

- Teachers are able to share one pupil’s work with the whole class through a beamer to share good ideas and also to enable all pupils to suggest ways to improve the written work. Such suggestions should be made with reference to the success criteria for that particular piece of writing. It is important that the teacher and pupils refer to the key features of the genre and success criteria for the task to evaluate the effectiveness of a piece of writing. The pupils are then able to see how such improvements can be made to their own writing.

- Teachers are also able to focus pupils’ attention directly on different aspects of the text by highlighting, underlining or using bold font. This is an effective tool when used in a timely manner with dialogue between the teacher and pupil.

THE USE OF INTERACTIVE TEXTS AND RESOURCES

Interactive texts include web pages and CD-Roms and are non-linear texts. Pupils are highly motivated by such texts and this increased level of motivation should be taken advantage of.

Given the nature of web pages and CD-Roms, pupils are able to take various routes through the text and experience graphics, sound and text at the same time, thereby bringing the subject to life. Reading such texts requires similar skills, but also different ones, to reading a static text.

Pupils need to be taught how to navigate through a web-based text, but once learnt pupils are very capable at moving around the text with ease. They can simply click on ‘next’ or ‘back’ for example. Indeed, pupils develop a radial approach to reading where skimming and scanning become very important when accessing a web page for the first time.

By looking at a number of web pages, pupils are able to compare the way in which a variety of texts are presented, focusing on content, structure, style, lay-out and purpose. Of course these objectives can also be met using books.

Importantly, pupils learn specific searching strategies and are able to locate resources for a particular task. They need to be selective and make judgements as to the relevance of the information found. This ability to undertake web based research proves particularly useful in cross-curricular subjects. Pupils are able to find relevant information by using a variety of skills such as accessing drop-down menus, hyperlinks, skimming and key words.

Pupils are also able to locate information by using search engines efficiently and asking appropriate questions.

Another benefit is that pupils are able to develop a critical appraisal of websites, being able to evaluate the value and relevance of information found.

There are numerous websites available for teachers to use with pupils. In addition, there are specialised websites which enable teachers to quickly locate other websites or resources.
THE USE OF INTERACTIVE WHITEBOARDS

Perhaps the greatest revolution in using ICT in the classroom has been the introduction of IWBs. My experience has shown that IWBs are at the heart of ICT in the classroom and that there are many advantages to effectively using IWBs. All pupils are able to see the screen; all programs that can be run on a computer can be shown through the IWB; resources that require a choice to be made can be made on the IWB screen by either the teacher or pupils; pupils are able to write and draw on the IWB directly, work can be saved, manipulated and edited in various forms using the tools available (such as highlighting, hide and reveal, underlining, using italics and bold) and there is also a plethora of IWB resources accompanying Smartboards or Promethean boards which can be used by the teacher to supplement their own resources.

The following is a list of useful activities taken directly from Generic Ideas for Literacy – Using an Interactive Whiteboard; Primary National Strategy that can be used with an IWB:

Cut up Poems – after studying a text the teacher shows how to choose words from the given text which reflect the feeling, character or mood of the text. Such words can then be listed as a word bank and then manipulated to form a poem. Pupils are then able to review and amend their poem.

Images to Inspire Writing – carefully selected images can be pasted onto an IWB page. Pupils can use such images as inspiration for a number of activities such as drama, role-play, poetry writing and diary writing entries. By having images on screen pupils can brainstorm their ideas, experience the feelings involved with the characters and then start their writing task.

Thought Bubbles – this is simply the scanning of images from a text providing pupils with the opportunity to fill in the speech bubbles for the characters in the image. Pupils can write detailed bubbles to explore the character’s thoughts or feelings in their own books and thus show the teacher how well they have been able to read between the lines in a text or empathise with a character.

Graph the Story – by selecting a piece of graph paper in the IWB resources it is easy to see how a story can be mapped. Variations include the relationship between two characters over time (with calm moving to stressed on the y-axis and time on the x-axis); the overall plan of the story can be mapped showing problems, climaxes, solutions and anti-climaxes and the emotions of one of the characters can be mapped. Pupils can then be asked to produce their own graph which can be printed out and annotated by the pupils to justify their opinions.

Replacing Words in Sentences – this is a very simple, yet effective activity whereby words can be replaced in given sentences or texts depending on the learning adjective. Words can also be added or removed to highlight the importance of different types of words such as adjectives or adverbs.

Analysing a Book Cover Prior to Reading – this is an interesting activity for pupils and one which requires little preparation on the part of the teacher. The image of the front cover of a chosen book is scanned onto a page of the IWB software and the title blocked out, with speech bubbles inserted for the characters within the image. Pupils are then asked to suggest titles for the book and also comments about the characters, along with speech to fill the speech bubbles. As the pupils read the
book, they take an increased interest in the characters that they have already examined.

Sound Files – by allowing pupils to listen to sound files through a computer from sources such as the BBC or original ones made by the teacher, pupils can formulate ideas about news articles or a piece of persuasive writing. For example pupils could listen to screeching tyres coming to a stop and then be asked to discuss and write a persuasive text about the impact of traffic lights where families cross a road. Teachers can also locate readings of famous poems to enable pupils to appreciate how poems can be read in different ways to make them more powerful.

Word Sorts – pupils are asked to sort a given set of words. For example for a grammar based activity a teacher might provide a variety of adjectives and nouns and ask the pupils to sort them. The results would then show the teacher the pupils’ understanding.

Using Video Clips – this is a powerful resource if used effectively with a clear focus on the learning objective for a lesson. A teacher must be careful to select clips that enhance the learning. Video clips can be used across all genres; for example when examining instructions, it is useful for pupils to view a video clip of, say, the different stages of making a wooden hut, so that they are able to follow the stages involved and thereby organise their writing into suitable paragraphs. Video clips can also be used in pupils’ own role-plays. For example a group of children can create a television advert, which can then be recorded and shown back to the class through the IWB. Such work can then be analysed with reference to the key features and success criteria, so that all pupils are able to assess the work and make amendments and improvements to their own work. Another example that pupils enjoy is when they have written a playscript which is then acted out, recorded and played back to the class through the IWB. Much can be learnt from such an activity.

Saving Shared Writing – this is a wonderful tool as work can be saved so that it can be retrieved on another occasion. The writing can be examined and improved at a later date when all pupils have been able to undertake their own writing and therefore be in a better position to identify ways to improve the shared writing and then move onto their own writing.

Scanning work - pupil’s work can be scanned and imported into the IWB software and then manipulated according to the lesson objectives.

The past five years have seen a dramatic increase in the application of ICT resources within the primary classroom. As a result they are becoming well-equipped for a future centred around ICT in the work place. Pupils are able to use such resources more confidently, and to enjoy the process.
PRACTICAL SUGGESTIONS ON HOW ICT CAN ENHANCE CROSS-CURRICULAR LESSONS

The following is a list of ideas that can be used with different ICT resources. This list is certainly not exhaustive as the possibilities are endless.

**Multimedia** - Powerpoint Presentations across all subjects created by groups or individuals incorporating images (created by pupils, images found from the internet, images uploaded from digital cameras) and also sound files (again from the internet or made by the pupils). Presentations can also be prepared by the teacher to support their teaching and presentation of the subject or use presentations already prepared by others.

**Emails** – to pupils in other classes or other schools across the world.

**Music** – software, electronic keyboard, tape recorder. Composing music for a given text such as the pupil’s own story or a piece of music to accompany a journey through space or a given time period.

**Databases** – geography, mathematics, Discovery of the World. Pupils can create their own databases after undertaking surveys and then manipulate the data using different criteria that they devise themselves. This supports the pupils’ enquiry skills.

**Art & Design** – Escher, tessellating shapes (mathematics). Pupils can work on paper and then recreate their tessellating images easily on a computer program. Create a self-portrait using a paint program or manipulate digital images uploaded from photographs taken by another pupil. Communicate ideas about themselves and develop appropriate vocabulary.

**Digital Microscope** – there are many opportunities when images can be projected onto the wall for all the class to see. Examples include the investigation of the qualities of natural and manufactured materials; looking at a seed, looking at mould etc.
Digital Camera – images can be taken of children in PE when working on balances. The class can discuss how to improve own and other’s balances. Pupils can take photos outside the school to show features of their community. The images can then be used in a powerpoint display that the children create as part of their topic work. The images can also be used to highlight different architectural features. In addition, images can be taken of different parts of a plant which can then be uploaded and manipulated with text being added to produce an information text. Pupils can also create a story by uploading their own images and then manipulating them into an order which supports their writing.

Digital Video Camera – record pupils’ PE efforts and analyse the film on screen to improve work. Can be used with dance, jumping, catching and throwing etc. Also a camcorder can be used to record pupils’ puppet show using puppets that the pupils made themselves and script that they write themselves.

Sound Recording – children are able to record their own and other pupils’ opinions and conversations. This can be undertaken in history lessons when pupils take on roles of given characters, in literacy when pupils’ are taking part in a discussion and other similar situations.

Spreadsheets and Graphic Presentation – mathematics, literacy. Information can be collected from internet research and then manipulated into a graphical format. For example pupils can research how to ‘think global, act local’ and then organize the information in a different manner. Also, pupils can devise their own questionnaires and collect their own data e.g. water usage at home. The information can then be collated on a spreadsheet such as excel and manipulated to show different bar charts, line graphs and pie charts. The findings can then be written up in the form of a report.

Desktop Publishing – all subjects. This is a very rewarding exercise for the pupils and teacher. Obviously pupils can produce their own ‘books’ or ‘leaflets’ or work collaboratively to produce a more substantial piece of written work. Examples include production of books about given topics such as Medieval Life as seen by a Knight or a peasant and the production of guidebooks for any location or time period.

Internet Research – can be used in all subjects and then the findings manipulated in a form suitable for the task and audience. For example: How did peasants live in the Middle Ages?
References:
Leading ICT Teachers Course; Norfolk Education Advisory Service
Using ICT Effectively in the Literacy Hour – ICT and Electronic Texts; Norfolk Education Advisory Service
Generic Ideas for Literacy – Using an Interactive Whiteboard; Primary National Strategy

Useful Websites:
www.primaryresources.co.uk
www.bbc.co.uk/schools/scienceclips
www.bbc.co.uk/schools
www.coxhoe.durham.sch.uk/
www.teachingandlearningresources.co.uk/
www.atozkidsstuff.com/middleages.html
www.northpole.com

Maps:
www.worldatlas.com
www.geography.about.com
www.activityvillage.co.uk
www.eduplace.com
www.yourchildlearns.com
www.mapsofworld.com
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The contribution which successive generations of technology have made in supporting teachers in the classroom is considerable and methods of teaching have responded to new situations. The article surveys some of these changes but then questions whether the potential of the technology available today, is being fully realized. A comparison is made between the informal processes of learning used, outside the classroom, by students today and the learning model they are faced with in school and it is suggested that schools are faced with the possibility of large scale systemic change, even extending to the physical nature of the institutions themselves.


Plusieurs générations de nouvelles technologies ont grandement modifié les pratiques et les méthodes des enseignants. Cet article présente quelques-uns de ces changements, mais la question qui se pose est la suivante : ces technologies sont-elles aujourd’hui totalement exploitées ? Une comparaison est faite entre le processus d’apprentissage informel que les élèves pratiquent en dehors de la salle de classe et le modèle d’apprentissage qui leur est proposé à l’intérieur de l’école ; on peut penser que les écoles sont face à la possibilité d’un changement majeur, pouvant même impliquer une modification physique des établissements scolaires eux-mêmes.
My career as a geography teacher began when black and white hardback textbooks were the order of the day and when a 16mm projector, with a borrowed Shell or BP film, would hold the class spellbound with its constant whirring and flickering. In fact the ‘class-act’ geography teacher was the one who could ‘thread up’ a projector and later ‘splice’ the film back together when the inevitable happened and the film broke and spilled celluloid all over the classroom floor! I have always tried actively to embrace current technology, from the previously mentioned 16mm films, filmstrip projectors and ‘Banda’ machines (spirit copiers) of the 1970s to the ‘Beamers’, laptops, Smartboards and learning portals of today when a teacher from the 1970s would be bewildered by an array of devices worthy of a space station control console!

Modern technology has certainly enhanced the learning of my pupils but I have doubts as to whether there has necessarily been any development in their process of learning. Like many teachers today I feel that I am stumbling happily in the right direction, trying to integrate my new tools into my existing teaching. It is a very exciting world but I think that there are many questions to ask about how we need to employ what is available to us now and more to the point what might be lurking just round the corner. Why look at what we are doing now? Why not 5 years ago or in the next decade? One answer would be that we need to constantly review what we do but I think that there is a logic in asking big questions now, because this is the time when various strands of change have come together and the potential for development is huge. We have undreamt of instant communication, direct access to massive information retrieval systems, protected learning portals, clever universal software, integrated multi-media platforms and hardware which is increasingly flexible and miniaturized. We also have a school community (students and teachers) which is increasingly ‘savvy’ in terms of ICT skills.

In spite of all which has just been said, the process taking place in most classrooms today derives from the 19th century when, as mass learning became more necessary to equip an industrial workforce, a version of the ‘elitist’ education of the time was borrowed and established in a cost-effective manner across national school systems. Its form is still recognizable across the globe today and certainly in our own schools. One could argue that it is both cheap to run and capable of producing measurable results. The teacher acts as an ‘expert’ and with the help of a variety of resources attempts to transmit his or her knowledge to students in a form in which is can be remembered and hopefully, applied. The students on the other hand have to receive that knowledge, mostly at the same speed, have to record it, learn it and later demonstrate that they can remember it and apply it.

There have been many attempts to modify the process. Some have been initiated by individual teachers, some by subject associations and some by governments but few have really questioned the nature
of learning and whether or not the aim of the learning process is the same now as two hundred years ago.

Outside school, young people inhabit a rich and complex learning environment which they need to master. They use a wide range of technology to do this. They exchange key information, they search for knowledge using a range of investigative techniques and they often employ a form of ‘trial and error’ or intuitive research to enhance their range of skills. They are divergent. They learn according to need and often in a style which seems random in its nature but is fast, effective and often collaborative rather than competitive. If they are able to learn some things so effectively in this manner, should we examine why we continue to use the same techniques as always in the classroom, to use what are seemingly 19th century solutions for the demands of the 21st century?

As a student I encountered examples of so-called ‘Programmed Learning’, mainly American in origin and promoting the idea that there was a linear route to learning but one which allowed different alternatives for the learner. This is an attractive idea and one which still surfaces today. In the 1960s, this was in the form of specially constructed ‘books’, but recently I was involved in a European School project called ‘iClass’ which explored the potential for using the idea of personalized ‘programmed’ learning, but this time with the full force of the micro-chip behind it. It was an interesting experiment but on the whole it didn’t provide immediate new answers to the question of learning with new technology because it had to be integrated into a model of education which depended upon having pre-determined goals and mechanistic routes to their achievement.

In my second school during the mid 1970s, I experimented with ‘Resource Based Learning’ as it was called at the time, with a group taking ‘O’ levels (the 16+ examination in use at that time in the UK). I redefined my role to become a ‘manager of learning’ and spent many hours writing task sheets and assembling, filing and classifying an enormous collection of newspaper articles, textbook extracts, photographs, pamphlets etc. Students negotiated their own route through this with my help as facilitator. By the end of the course they would have covered all the ideas and be ready for their exam. They would have been responsible for their own learning. My nerve held until the April before their June exam when panic set in. Were they prepared? How did I counter the ‘Mr. Johnson tells his class all that they need to know’ brigade. In the remaining three months I stood dutifully at the blackboard and whistled through the entire ‘O’ level course. Had I been wrong in trying to use such a system of learning? That is a good question. It is a question which we have to face in today’s world. We cannot deny that we have greatly increased our capability to ‘do’ personalized, self-directed learning of a kind which, if it works, will turn the student into the self-motivated, self-evaluating ‘life-long learner’ that we believe is needed in today’s world. If we are going to use the new opportunities in a different way we need to face a number of questions.
The first concerns the nature of learning. What constitutes learning? Is it when we remember something, or understand something or are able to apply something or indeed a mixture of all three? If we come down on the side of application rather than rote remembering, one thing about learning seems certain. We learn something most effectively when we need to learn it and when we discover it for ourselves. A staff room cynic once suggested that the only person learning in a classroom is the teacher. I am increasingly inclined to agree with him. The teacher has a reason for understanding what is being taught, has a need to construct organizing frameworks to ‘contain’ the knowledge and is likely to be exposed to questioning concerning its application. I have heard teachers say that the first time they fully understood some of the difficult concepts in their discipline was when faced with teaching them for the first time. The issue of personal relevance is crucial to learning. Today’s rich information environment is an exciting place to play! There is much to learn. When I search the web for a specific piece of information I very often become sidetracked and learn all kinds of useful things which I had not set out to learn. It is rather frowned upon by inspectors today, if a teacher is not able to produce a list of ‘intended learning outcomes’ but is it always possible or desirable to pre-define these outcomes precisely or, to put it another way, could (or even should) learning outcomes vary from student to student? Can there be ‘multiple acceptable outcomes’, and if there are, how do we set about evaluating the effectiveness of the learning and the attainment of the student, two things which schools (and society) have always been rather keen on?

In approaching potential change, we also have to consider the ownership of teaching and learning. Whoever owns the process of learning controls what is considered to be learning, how that learning is achieved and how it is evaluated. Should the nature of learning be dictated by the school or by a central body or by an external examination or through the demands of university gatekeepers. All of these possibilities are highly prescriptive. I suspect that real innovation in the learning process can only take place when control of the process is localized down to the individual classroom or group of teachers but then we face the problem of validating new forms of
learning. The learning and evaluation process of the UK’s General National Vocational Qualification (now replaced by Vocational ‘A’ levels) required students to provide evidence to show that they had undertaken certain processes of learning and had acquired a range of skills. This was a flexible form of evaluation which allowed multiple outcomes. The forms of evaluation employed in the European School at the present times encourage little of this approach, although within the ‘A’ mark the teacher has, in fact, a lot of discretion.

The final area of discussion must centre on the nature of the learning institution and the relationship of the learner to it. How will it be funded and organized and managed. What will it be like in a physical sense. Will it look like a school or will it have workspace which allows much greater interactivity and flexibility. Will children of different ages learn in very different kinds of environments? Will students always be within it or will they telementor or teleconference. Will they be organized into groups and if so how and for what purpose. Will they interact with each other and with their teachers / mentors in a much more flexible manner than today. To what extent will they negotiate what they learn and how, either individually or collectively?

I discussed these ideas with a group of Year 6 students at Woluwe. I started by asking how they learned new things outside school such as how to play a new on-line game or how they keep up to date with their favourite genre of music or how they would learn how to work their new mp4 player etc. I then asked them to imagine a situation where schools had never existed in a physical sense. They were completely free to devise their own preferred system of learning. How would they learn most effectively and also enjoy their learning? There were some interesting ideas. One student in particular articulated his ideas well. He wished to be set ‘open ended’ projects which he had to undertake using the internet, but sometimes coming together with his teacher and with peers for collaborative work. He said that much of what he would do would take place at home but that there would have to be some kind of learning centre (you could call it a school!). When I asked him what this place would be like I got an immediate response.
It would be a giant cafeteria with lots of spaces of different kinds, some really open and some more closed off, some big, some small; some with circular tables; some areas of 'easy chairs'; some carpeted areas with cushions. It would be a bright place with lots of plants and nice artwork on the walls. There would be no fixed computers because everyone would have netbooks or handheld devices connected by wireless to printers or smartboards or screens of different sizes which would be scattered around the area almost at random. Very important was the supply of constant coffee and croissants! It is interesting that this concept is being used in some schools already in the UK and also in some more progressive, research based companies which need high levels of collaboration between staff.

I asked if there was any role for ‘traditional teaching’. He thought not, but other students disagreed and thought that they would like a mixture of types of work. They all agreed that ‘learning to learn’ or problem solve using data was more important today than remembering things.

As a student I studied ‘Philosophy of Education’. It is interesting that in today’s increasingly goal directed, ‘tick-box’ world, this subject has been largely replaced in teacher training by the study of how we deliver the Curriculum. It seems to me that this is a time when a discussion of the ‘philosophical’ basis of what we do in schools needs a major debate, not simply how we manage it. What kind of knowledge do our young people need in order to succeed today? What are the essential skills for them in the 21st Century? How best can they acquire this knowledge and these skills? How can we harness the massive power of modern hardware, software and information systems to make education more relevant to the world which they will inhabit?

There are huge implications here for what we as teachers are doing. If the beamer is simply replacing the slide projector and the white board the blackboard, then I believe that we will have failed to grasp the potential of technology within the learning environment and that an increasingly wide gap will emerge between the school environment and the virtual environment in which students conduct much of their real learning. School education will continue as a means of separating out those considered to be ‘bright’, from the rest, which has always been one of its functions within a hierarchical society but a real opportunity for a qualitative change in the contribution of education to society may have been lost.

It may seem hard on those teachers who have struggled to acquire ICT skills, but using technology in education does not, in my opinion, mean working a ‘smartboard’ or animating a ‘power point’ presentation, however much these might enhance what is done now. The real debate is where we go from here. Today’s students will need to add to their knowledge and upgrade their skill base constantly, throughout their lives and schools must help them to become effective ‘lifelong learners’. We must begin to talk about how we can do this before education becomes something which is done at school and then forgotten about, rather than school being a place where students develop an effective process of learning which will serve them for the rest of their lives.

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ICT AND PROJECT TEACHING

BY JANA KRATOCHVÍLOVÁ

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Project-based teaching is one way of developing information and computer literacy. It has recently become a widely-used method of teaching in many schools. Everybody is talking about projects, but what is a project? If we want to use projects in teaching, we have to understand them comprehensively. This contribution defines the project according to its original meaning and presents the pupils’ project (3rd, 4th, 5th grades) in European school Brussels III in the year 2008 entitled “What am I interested in? What are my hobbies and how can I present them to others?” It includes the aims of the project as well as its activities and presentation.


L'apprentissage par projet est l'une des façons de développer la maîtrise de l'information et de l'informatique. Son utilisation s'est récemment développée dans bon nombre d'écoles. Tout le monde parle de projet, mais qu'est-ce que le projet? Si nous voulons l'utiliser pour enseigner, nous devons le connaître de manière approfondie. L'article définit le projet dans son sens premier et présente les projets "Quels sont mes intérêts? Quels sont mes hobbies?" et "Comment puis-je les présenter aux autres?" réalisés par des élèves de 3e, 4e et 5e années de l'Ecole européenne Bruxelles III en 2008.
The expansion of the use of projects in teaching is documented in many professional articles; discussions with teachers and J. Stockton’s idea that (1920) “the project-based method was viewed as something fashionable, as a gimmick, used more or less as a trick and without full realization of its character and power” all contributed to the research, the aim of which was to achieve an overview and understanding of the teacher’s conception of project-based teaching today (Kratochvilová, J. 2006).

The research sample was made up of a targeted selection of schools and teachers in the Czech Republic who use project-based teaching, have a high degree of experience of it and could therefore confidently respond to the required task.

The findings of the qualitative research were not satisfying. By analysing teachers’ written work we have managed to outline individual elements of the teacher’s conception of project-based teaching augmented by other concepts, from which we selected the most important:

The idea of the concentration (topic) as the central idea of the project is a basic element of project-based teaching which significantly influences its progress. If the concentration idea takes the form of a theme (which does not introduce a definite issue or a specific task, and the theme does not arise through the pupil’s initiative), then individual sub-themes and their contents divert the teacher from project-based teaching towards thematic teaching. Thus the most characteristic feature of this form of teaching imperfection is not about the pupil’s initiative, through which the pupil takes on full responsibility, but rather about the teacher’s initiative.

During the creation of the project, teachers proceed from their own ideas and needs and from the requirements of the curriculum. In this way, they become the proposers of the project. The project is often shaped for children, but without children being involved. Children are not always invited to take part in the creation of the project or in the formulation of its central idea.

The implementation of project-based teaching places certain requirements and demands on the teacher and involves an important change in the concept of the teacher’s role. The teacher is not the main initiator who gives the children complete information, but he should become an adviser who helps the children to fulfil the project’s objectives and accompany them in the process of achieving their output.

From this analysis we conclude that there is a deviation from the original character of the project as being the pupil’s “discovery, investigation and enterprise” towards the project being based on the principles of thematic teaching or actually being thematic teaching which is carefully prepared and implemented according to the teacher’s vision.

These (and other) investigations show us the necessity of defining the project (which corresponds to the original concept of project teaching in pragmatic theory):

“The project is a complex task (issue), connected with a living reality which
the pupil identifies with and assumes responsibility for, so that through his theoretical and practical work he can achieve the required result (output) of the project, for whose defence and assessment he has arguments that emerge from newly acquired experiences.” (Kratochvílová, J. 2006)

“We understand the project-based method as a structured system of activities for the teacher and pupils in which a dominant role is played by the classroom activities of the pupils, with a supporting role being played by the teacher in an advisory capacity, which together aim to achieve the goal and the concept behind the project. The complexity of the activities requires the use of various methods of teaching and various forms of work.” (Kratochvílová, J. 2006)

This concept of project created the foundation of our project and activities with pupils of 3rd, 4th, 5th grades European school Brussels III which took place in the year 2008. The general title (topic) of the project was ‘What am I interested in? What are my hobbies and how can I present them to others?’

The project was classified as a long-term project (six months); it included an individual project, a school and home project, and a cross-curricular project integrating various issues of educational content. A very important feature was its independence - the pupils decided on the topic, content, arrangement and output of the project.

The main goals of the project were to develop literacy - in both reading and information technology.

The special aims were to use modern information and communication technology, to find, use and apply information about the topic of the project, to compare information and knowledge from a greater number of alternative information sources, to use software and hardware tools creatively during the project, and finally to present the project output.

Project-based teaching is a complex process with several phases: the planning of the project, its implementation, presentation and assessment.

**PLANNING OF THE PROJECT**

The name of the project ‘What am I interested in? What are my hobbies?’ was written on the blackboard as a question, as a problem to be solved.

Each pupil had enough time to decide what he/she would choose to solve. (Some of them changed their topics during the first week.) After that they wrote down the titles of the projects that they were interested in, plus key words and questions, and informed their schoolmates about their topics.

For example:

The most important step in the project is to consider and decide the output of the project at the beginning. Pupils have to know what the end result should be in order to be able to choose the work strategy and the content of the topic.

In the case of our project, pupils suggested a book and multimedia presentation for parents as their end products. So we agreed on the date for the presentation: 13.3.2008.

As soon as the pupils knew the topic, the expected output and the date of the presentation, they could start working on their project. Every week they worked on it during one Czech language lesson and one ICT lesson in the computer room. At that moment the second phase started.

### IMPLEMENTATION OF THE PROJECT

First, the pupils started to think about the project contents and made a mind-map.

After that pupils thought about possible sources of information for their project. First they accumulated many books and magazines both from home and from the school library. They were learning to decide which book was appropriate and corresponded to their reading and thinking levels. They had to read a lot (naturally), learned to choose the key words, and to write about their interest according to their abilities. They were responsible for the output in the end.

When they had enough information from the books, they began to find new information via the computer. They had to become acquainted with many websites and choose some of them for their project. They were enthusiastic about looking for pictures of the animals, footballers and other topics. They printed the pictures and added them to the written text.

The pictures from magazines and the Internet were also used as a source for creative activities.

After having spent enough time surfing the Internet and downloading pictures and information, the children needed to type something concrete about their topic on the computer. They started using the software for typing poems, stories, news, summarising...
important information and drawing it. For some of them it was very difficult as they didn’t have enough experience of creative writing. However, they had a huge desire to succeed in writing a beautiful book and to present it to the parents. At the end of the project everybody was able to use the text editor.

The pupils from the 5th grade also learned how to create various kinds of charts and tables.

During this phase of the project pupils collected, classified and analysed information from many sources. It is clear that the teacher played a variety of roles: observer, partner, advisor and supervisor. But the most important is the role of adviser – the teacher should lead the pupils to the output of the project. During the long-term project the pupils’ motivation and the appropriate atmosphere were very important, too.

During the last month of our project pupils prepared the presentation, the next phase of our project.

PRESENTATION OF THE PROJECT

The presentation included a demonstration of the result – the output of the project. In our case the presentation was in both written and oral form. The written form was the book made by pupils which was presented to the parents. At the same time the pupils presented the process of this project and new knowledge about the topic. Pupils made invitation cards for their parents using the computer and they presented their projects by means of PowerPoint. They also prepared some refreshments for parents.

The parents of all pupils took part in the final presentation. It was amazing to see the children independently manipulating a computer, standing with a microphone before a gigantic screen and presenting their gained knowledge and competencies. I could perceive their stress, but also huge happiness and pride in the result of their work. If the project is collaborative, then pupils feel and assume a responsibility for their results, and they are able to achieve a lot.

The whole long-term project developed many competencies in reading and computer literacy. The pupils utilised simple and suitable methods when searching for information on the internet; they searched for information on web portals, in libraries, magazines and from their own sources; they are now able to work with text and graphics and table editors, and use suitable applications; they applied basic aesthetic and typographical rules for the work with text and pictures; they used information from various information sources and evaluated simple relationships between sets of data; they prepared and presented information in text, graphic and multimedia forms at user level, and they used the basic, standard functions of a computer and its most common peripheral devices.

Most important was the pupils’ interest in active reading and writing during the project. Project-based teaching brings the pupils development in complexity – cognitively, socially and emotionally. It develops
important information and drawing it. For some of them it was very difficult as they didn’t have enough experience of creative writing. However, they had a huge desire to succeed in writing a beautiful book and to present it to the parents. At the end of the project everybody was able to use the text editor.

The pupils from the 5th grade also learned how to create various kinds of charts and tables.

During this phase of the project pupils collected, classificated and analysed information from many sources. It is clear that the teacher played a variety of roles: observer, partner, advisor and supervisor. But the most important is the role of adviser – the teacher should lead the pupils to the output of the project. During the long-term project the pupils’ motivation and the appropriate atmosphere were very important, too.

During the last month of our project pupils prepared the presentation, the next phase of our project.

The presentation included a demonstration of the result – the output of the project. In our case the presentation was in both written and oral form. The written form was the book made by pupils which was presented to the parents. At the same time the pupils presented the process of this project and new knowledge about the topic. Pupils made invitation cards for their parents using the computer and they presented their projects by means of PowerPoint. They also prepared some refreshments for parents.

The parents of all pupils took part in the final presentation. It was amazing to see the children independently manipulating a computer, standing with a microphone before a gigantic screen and presenting their gained knowledge and competencies. I could perceive their stress, but also huge happiness and pride in the result of their work. If the project is collaborative, then pupils feel and assume a responsibility for their results, and they are able to achieve a lot.

The whole long-term project developed many competencies in reading and computer literacy. The pupils utilised simple and suitable methods when searching for information on the internet; they searched for information on web portals, in libraries, magazines and from their own sources; they are now able to work with text and graphics and table editors, and use suitable applications; they applied basic aesthetic and typographical rules for the work with text and pictures; they used information from various information sources and evaluated simple relationships between sets of data; they prepared and presented information in text, graphic and multimedia forms at user level, and they used the basic, standard functions of a computer and its most common peripheral devices.

Most important was the pupils’ interest in active reading and writing during the project.

Project-based teaching brings the pupils development in complexity – cognitively, socially and emotionally. It develops various competences (knowledge, skills, abilities, attitudes and values). Last, but not least, pupils learn willingly and they enjoy their own learning. Project-based teaching occupies an important place in the educational process. Nevertheless, it has to be a real and well organized project.

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Interactive White Boards (IWB) have become a popular and generally effective teaching tool in classrooms throughout the world. More than 500 Interactive Boards will be in use in European School classrooms across our system by the end of 2010. This article looks at the current research on Interactive White Boards and suggests how these tools could be used to enhance both teaching and learning in the future. The IWB research on teachers and teaching suggests that the IWB was seen by many teachers as a non-threatening, ‘bridging’ tool which allowed non-ICT specialist teachers to begin the process of embedding ICT into their teaching. It seems that teachers would have to go through a number of learning phases before an IWB would be used by them as a tool which could transform their pedagogies. Time for preparation, experimentation and reflection with the IWB was seen by many research studies to be critical, as was the need for relevant and stimulating in-service training. The research seems to show that the use of an IWB has a generally positive effect on learners who seem to be more engaged and motivated in the learning process. However, there is little concrete evidence of the ‘deep interactivity’ which would engage learners at a higher cognitive level. A small number of recent studies suggest that, in a continuous and prolonged IWB teaching and learning environment, a positive impact on attainment can be measured. It would seem that the IWB is used more as a ‘learning’ board in the primary school setting while the dominant use of an IWB in the secondary school context seems to be as a ‘teaching’ board, with an emphasis on the presentational capabilities of the technology. It would appear that IWBs in secondary schools are used mainly to enhance and deliver lessons in the Sciences, Mathematics and in English.

In Bereich der Grundschule scheint die interaktive Tafel eher als „Lern-Tafel“, in den weiterführenden Schulen überwiegend als „Unterrichts-Tafel“ eingesetzt zu werden; dabei erfolgt eine verstärkte Ausrichtung auf Präsentationen und die Möglichkeiten, die diese Technologie in dieser Hinsicht bietet. Smartboards werden hauptsächlich in den naturwissenschaftlichen Fächern, in Mathematik und in Englisch eingesetzt.

Les tableaux blancs interactifs (TBI) sont devenus des outils utiles et répandus dans les salles de classe partout dans le monde. Plus de 500 tableaux blancs interactifs seront utilisés dans le réseau des Écoles européennes d’ici la fin 2010. Cet article se penche sur la recherche actuelle sur cet outil et propose des utilisations qui pourraient améliorer l’apprentissage et l’enseignement.

Les études menées sur les professeurs et l’enseignement montrent que les TBI sont considérés comme des outils «non intimidants » et de transition qui permettent aux professeurs qui ne sont pas spécialistes de l’informatique de commencer un processus d’intégration des TIC dans leur enseignement. Il semble que les professeurs devront passer par un certain nombre de phases d’apprentissage avant que le TBI ne puisse être un outil qui pourrait transformer leur pédagogie. Les études ont montré que le temps pour la préparation, l’expérimentation et la réflexion avec le TBI sont impératifs ainsi qu’une formation continue stimulante et ciblée.

Les études montrent également que l’utilisation des TBI a un effet positif général sur les élèves qui semblent plus occupés et motivés par l’apprentissage. Cependant, les preuves manquent qui montrent qu’une « interactivité profonde » stimulant les élèves à un niveau cognitif supérieur a bien lieu. Il a récemment été prouvé que l’utilisation continue et prolongée du TBI avait un impact positif mesurable sur l’accomplissement. Il semblerait que le TBI est utilisé davantage comme « tableau d’apprentissage » au primaire alors qu’il est utilisé comme « tableau d’enseignement » au secondaire, en insistant sur les capacités de présentation de cette technologie. Apparemment, les TBI sont principalement utilisés au secondaire pour améliorer et donner les leçons de sciences, de mathématiques et d’anglais.
January is traditionally a time when the European schools begin to consider purchasing ICT equipment. It is a time for visiting the BETT show in London and a time for retailers in the field to make impressive ‘pedagogic’ claims about the latest, ‘must have’ piece of hardware or software that all effective 21st Century teachers should have (Buckingham, 2007, Chap 1). The Interactive Whiteboard (IWB) appeared on the educational hardware horizon in the UK and in Europe in the mid 1990s. The ‘wow’ factor of this new technology was impressive (Beauchamp and Parkinson, 2005) – as was the price of the IWB itself, the data projector and computer – and it soon became ‘the’ presentation technology which every school wanted in order to replace the overhead projector and VCR/TV units of the 1980s and mid 1990s. BESA, the British Educational Suppliers Association, estimated that there were 282,000 IWBs in UK schools in 2009. These figures are impressive when compared with an estimated 27,000 IWBs in 2002 and 57,000 IWBs in 2004 (Beauchamp and Parkinson, 2005). It is clear that the market demand for IWBs (and consequently the demand for data projectors and computers) is very high. As Kennewell and Higgins (2007) note:

"... But the IWB seems to have a pedagogical and cultural status-in the UK at least- which makes it different from other pieces of new ICT equipment. In particular, it has been enthusiastically adopted by almost all teachers who have one installed in their classrooms, and is sought after by many of the teachers who currently do not have one. The rate at which these still expensive items have permeated UK schools is phenomenal"

Many other educational systems around the world report similar growth rates for IWBs with Governments taking the policy lead in many cases (UK, 2004; Mexico, 2006). There are approximately 450 IWB’S in the 14 European schools (February 2010).

In this essay I will investigate two important questions related to the rapidly increasing use of IWBs in classrooms around the world:

1) What does the research literature say about the current thinking with respect to the impact of IWBs on Teaching and on Learning/Attainment?

2) Are there any major differences in how IWBs are used in Primary school classrooms as opposed to Secondary school settings?

Before treating these questions, I will trace the recent usage of IWBs within the context of the development of teaching, learning and Information and Communication technologies (ICTs) in schools over the past three decades.
IWBs IN SCHOOLS UNTIL NOW

In 1980, the presentation technologies available to teachers consisted of the blackboard, a slide projector, an epidiascope, a 16mm film projector and a television set which could tune into educational broadcasts if timetables allowed. By the end of the 1980s, the overhead projector, along with the photocopier, had become the standard presentation and resource support tools for many teachers (Reedy, 2008). Computers did make an appearance in schools during the early 1980s. Apple II, BBC Micro, Commodore 64 and Amstrad computers, albeit with very limited software applications, promised much but, in reality, were only used effectively in some mathematics and science classes. Information Technology (IT) or ‘Computing’ became vocational subjects in some schools but the locked computer room remained closed to the majority of teachers and pupils outside the mathematics/science area. Teachers did use the word-processing capabilities of these early computers but as a teaching tool, they were virtually non-existent. The arrival of the VCR and TV technologies in the early 1980s had a far greater impact on the presentation and visual teaching options available to teachers at this time. Once the VHS v. Betamax v. Phillips 2000 format battle was played out, the Video Room and the portable VCR/TV unit became standard parts of a teacher’s ‘toolkit’ with commercially produced video material or recorded public television educational programmes becoming teaching and learning resources.

After the initial ‘false dawn’ in the mid 1980s, the second ICT revolution of the mid 1990s had a far greater impact on teaching and learning both inside and outside classrooms. Networked IBM-compatible computers with a common MS Dos Operating System made the computer room more teacher and student ‘friendly’, while the internet (world wide web) finally allowed the communication and collaboration potential of cheaper computers (which were now being used as Internet Access Devices, not as ‘computing’ machines), the Windows Operating System and digitalized resources to have a major impact on teaching and learning in classrooms around the world. Today, the wireless, mobile classroom with Netbooks linked to a Learning Platform is a reality in many schools in Europe and beyond.

Presentation technologies such as the IWB became an option during this second ICT wave across schools in the mid to late 1990s (Beeland, 2002; Cogill, 2003). Computer-linked replacements for the overhead projector began to appear on the market with tools that would allow the new ‘data projector’ to project the computer screen image onto an existing, regular whiteboard or onto any flat surface (Mimio, eBeam, Onfinity). A special pen was able to manipulate the image on the screen by touching the image itself, thereby acting as a computer mouse. The first ‘interactive’, ‘digital’ or ‘electronic’ whiteboards were also controlled by a special pen (Promethean’s Active Board which has 70% of the UK market; Moss et al, 2007) and later by a combination of a finger touch and/or a pen (SmartBoards). An IWB is defined by BECTA (2003) as:

“... a large, touch-sensitive board which is connected to a digital projector and a computer. The projector displays the image from the computer screen on the board. The computer can then be controlled by touching the board, either directly or with a special pen”

The software ‘behind’ the IWB (actually installed on the computer attached to the IWB) was the crucial element in providing teachers with a resource base and content
creation tools for use in their teaching. Indeed, the pre-loaded proprietary software is the main battleground between the different manufacturers of IWBs in the market today. There are dozens of manufacturers and suppliers of IWBs (increasingly in Asia), although in the UK and Europe, two IWBs dominate: the Promethean ActiveBoard and the SmartBoard. The crucial difference between these two IWBs is their method of input or interactivity. The Promethean board uses a special pen which touches the board to activate the various software features. The SmartBoard can be activated by the teacher or student touching the board with a finger. This fundamental and important difference is largely ignored in the research literature (except by Reedy, 2008) which is surprising as one might have thought that the method of physical interaction with the IWB would play an important role in how the teacher would plan to use the board in the classroom. A number of peripherals (Moss et al, op cit; Kennewell and Higgins, op cit) can now be attached to the IWB. Voting systems, Slates for remote control of the IWB’s functions, visualisers and speakers can all enhance the potential of the IWB as a teaching and learning tool. IWBs in different locations can be linked together during a distance learning event, while much of the commercial educational software available to teachers will have the label ‘IWB compatible’ stamped on it. The same basic interactive technologies which underpin the IWB have now been further developed into the ‘Table Technologies’ which are now appearing (Smarttech and Microsoft) in the market and which transfer the interactive potential of the whole-class IWB to that of a small group level around an interactive table. This interactive, touch-screen trend is also reflected in the wider, popular ICT market with many students having this ‘interactive’ experience with their Tablet PCs, iTouch-style phones, touch-screen computers and televisions and iPods/MP4 players.

CONCLUSIONS FROM THE RESEARCH

TEACHERS AND TEACHING
Early research on teachers and ICT (Glover and Miller, 2001) suggested that most schools had a small number of ‘early adopters’ of ICT on their staff (Missioners). These were teachers who recognised how new technologies might be used to consolidate or even enhance the creation and presentation of their teaching resources. The vast majority of teachers were interested in the potential of technology (Tentatives) but were not able or willing to abandon the tried and tested teaching models which they had become accustomed to over time. For this group, new classroom technologies would have to be made ‘teacher-proof’ before they would have the confidence to begin to embed them into their teaching. A third group of ‘resistant’ teachers (Luddites) were usually totally opposed to any new developments in teaching technologies and due to the unreliability of early ICTs, they could very often point to a case where a perfectly good lesson was destroyed because the technology did not work. Today, it would seem that this division of staffroom ICT skills along these lines has changed over time. Formal, targeted ICT training and the universal use of the internet and mobile technologies in recent years have made teachers more technically confident and skilled in their use of ICTs (Personally, I think that commercial websites such as Ryanair.com have had a major influence in breaking down resistance to internet use by teachers— a glance at the history of ‘websites visited’ on any staffroom computer should confirm this perception). Today, 75% of primary
It seems clear from the recent research literature on IWBs that teachers must probably go through a number of developmental phases before they can reach the stage where they can exploit the pedagogic transformational potential of the technology as opposed to merely making use of the technical possibilities for the various presentation modes which an IWB can afford. These stages are probably similar to those that any teacher must go through in order to better embed ICT (not just an IWB) into their teaching. Burden (2002) identified three stages which he called Infusion, Integration and Transformation. Beauchamp (2004) identified five stages in an effective transition framework for teaching with an IWB, while Miller and Glover (2004) identified a three stage model which begins with the Supported Didactic Stage, progresses to an Interactive Stage, and culminates in an Enhanced Interactive Stage. During this last stage, the teacher has moved from an ‘instructional’ to an ‘involved’ role and she is using the technology to stimulate, integrate and develop interactive learning. Haldane (2007), in her typology of IWB pedagogies, identified five stages (foundation, formative, facility, fluency and flying) which initially focus on the teacher's technical abilities and then goes on to deal with pedagogies. The most recent model of pedagogical change and the IWB is described by Lewin et al (2008) who, after a two year study of the process of pedagogic change with IWBs, identified a three stage model of development and discovery:

**Stage 1:** teachers fitting new technologies into established pedagogies

**Stage 2:** teachers engaging in collaborative exploration of the new opportunities offered by these technologies
Stage 3: teachers using the IWB skillfully and intuitively in ways that extended or transformed their established pedagogic practices (p. 301)

Therefore, it seems to be clear that engaged teachers who consistently use the IWB will eventually develop the skills, experience and creativity to transform the way they teach and, by extension, how their students learn. This process takes time and it seems that time to reflect, time to experiment and time to plan are central determinants in this process (Moss et al, 2007, p. 6). The critical role of the teacher as the main change agent in this transformational process is clearly reflected in the literature:

“Teachers are the critical agents in mediating the software, the integration of the software into the subject aims of the lesson and appropriate use of the IWB to promote quality interactions and interactivity” (Moss et al, 2007, p.455)

It seems that teachers must fully engage with this technology in order to go beyond the stage of just considering the IWB as an attractive presentation tool, to recognizing their IWB as a tool with the potential to transform how they teach and what they teach. It would seem from the research that when teachers have gone through the various phases of experience towards embedding the IWB into their teaching, they reach a ‘deep understanding’ of how this tool can transform pedagogies through an understanding of the potential for pedagogical interactivity (Moss et al, 2007; Smith et al, 2005; Hennessy et al, 2007; Gillen et al, 2007). Teachers at this level act as ‘learning context creators’ in their classrooms with the IWB mediating the learning process both for the students and for their teacher. Training and professional development are vital components of any IWB implementation strategy (Kennewell and Higgins, 2007 ; Higgins, Beauchamp and Miller, 2007). The supportive and visionary role of the school management is also essential in order to create a school culture which encourages teachers to maximize the pedagogic potential of the IWB ( Glover and Miller, 2007; Schuck and Kearney, 2007).

LEARNERS, LEARNING AND ATTAINMENT

Most of the research evidence suggests that the use of an IWB in a classroom has a positive effect on learners and on their learning. It seems to be generally accepted that an IWB can facilitate the targeting of a variety of learning styles, can encourage attention and increase motivation of the learner (Moss et al, 2007). Students have indicated that lessons with an IWB can be more ‘fun’ (Hall and Higgins, 2005) and deliver more ‘authentic’ and relevant learning experiences ( Schuck and Kearney, 2007). When packaged with other ICT tools such as Classroom Management Systems, Learning Platforms and eLearning solutions, Hunter and Beveridge (2007) would argue that an IWB could help merge the ‘formal’ learning experienced inside the classroom with the rapidly emerging ‘informal’ digital learning environment which is generally outside the classroom. However, the research does not yet show that the use of an IWB will have a major impact on the ‘deep’ interactivity which would engage learners at a much more intensive level (Moss et al, 2007). Perhaps as teachers become more skilled and practiced at embedding the IWB as a transformational tool into their teaching, we will begin to see more concrete evidence of a deeper impact on learners and on their learning.

Moss et al (2007) could find no evidence from their statistical analysis that IWB acquisition in London schools had impacted on attainment in the 3 core subjects in the school year 2004/5. However, if time is
an important determinant of whether an IWB is successfully embedded into a teacher’s pedagogy, then one might expect any impact on attainment levels to become apparent over a longer timeframe. Two reviews of the Primary Schools Whiteboard Expansion Project by researchers from Manchester Metropolitan University (Somekh et al, 2007) would suggest that the introduction of an IWB, for at least two years, does have a positive and measurable impact on pupil attainment. Lewin et al (2008) concluded that their analysis showed:

“There were measurable gains in children’s test score results (at age 11) in Mathematics, English and Science when they had been taught with an IWB for more than two years” (p. 296)

Are there any differences in how IWBs are used in Primary classrooms as opposed to their use in Secondary school settings?

There seems to be much more reported research in the literature on IWBs and their impact in the primary school sector than on experiences with IWBs in the secondary school sector. This may not be surprising as setting up and conducting research in primary schools is generally easier, as they are usually smaller institutions with whole-class teaching settings, where the same class would be taught every day by the same teacher in a particular classroom. Lewin et al (2008) recognized this important advantage for their research context:

“... for the majority of the school day, primary school teachers are based in the same classroom and teach most, if not all, of the curriculum to a single group of pupils. This meant that teachers, their teaching assistants and the pupils had exclusive and sustained access to the IWB” (p. 292)

Rudd (2007) goes on to say that:

“There is also evidence to suggest that IWBs may be more ‘accepted’ at primary level because they are viewed as a resource more readily identifiable with primary strategies and whole-class teaching requirements. The multimodal aspects allow for concepts to be explained and expressed in different formats and styles, and the often ‘tactile’ nature of use has been argued to be generally beneficial for pupils of this age, helping to increase the engagement and attention by engendering ‘theatrical tension’ in the classroom” (p. 5)

In secondary school classrooms, the IWB seems to support a more conventional teacher role, which sees her in front of
a whole class (Moss et al, 2007). Research studies on IWBs in secondary schools usually focus on Science, Mathematics (Beauchamp and Parkinson, 2005) and English Language teaching (Schmid, 2006) which are traditionally the subject areas which embraced new technologies since the 1980s. However, the use of the IWB at secondary level tends to be dominated by using the IWB as a presentation tool, with PowerPoint presentations dominating a more traditional, didactic model of teaching (Reedy, 2008). I have noticed that, in the dozens of teacher inspections which I do every year, the powerful content creation tools, which are embedded in the proprietary and specialised software which is bundled with IWBs (e.g. SmartNote or ActivInspire) are usually used more effectively by primary school teachers than by their secondary colleagues. Hennessy et al (2007) have found however, that expert secondary school teachers were seen to make excellent use of an IWB when they were guiding students towards mentally challenging activities and when learning materials are constructed collaboratively by students and their teacher in the classroom. I suppose that one could argue that an excellent teacher would do this anyway, with or without an IWB. Gillen et al (2007) sound a warning that does have resonance for many secondary classrooms:

“However, as has been the case with earlier ICT initiatives, there is a danger that the introduction of this expensive, potentially valuable piece of equipment is ‘technology-led’ (introduced because it is available) rather than ‘education-led’ (it is introduced because it is known to meet the professional needs of teachers and the educational needs of children better than existing educational tools)”

Therefore, primary school teachers seem to have been able to ‘exploit’ the IWB in their classroom to being much more than a high-tech presentation tool. The nature of the primary school classroom, where the pupils and their teacher spend large blocks of time together in the same classroom is probably more suited to ‘deeper’ use of and experimentation with an IWB than in a secondary classroom. The secondary teacher usually has contact with a class for 120 minutes per week and has to cover a subject syllabus which is usually externally assessed. The time factor is particularly relevant here. Maybe the primary school bias in the IWB research literature is not surprising after all.

The IWB research on teachers and teaching suggests that the IWB was seen by many teachers as a non-threatening, ‘bridging’ tool which allowed non-ICT specialist teachers to begin the process of embedding ICT into their teaching. It seems that teachers would have to go through a number of learning phases before an IWB would be used by them as a tool which could transform their pedagogies. Time for preparation, experimentation and reflection with the IWB was seen by many research studies to be critical, as was the need for relevant and stimulating in-service training.

The research seems to show that the use of an IWB has a generally positive effect on learners who seem to be more engaged and motivated in the learning process. However, there is little concrete evidence of the ‘deep interactivity’ which would engage learners at a higher cognitive level. A small
number of recent studies suggest that, in a continuous and prolonged IWB teaching and learning environment, a positive impact on attainment can be measured. It would seem that the IWB is used more as a ‘learning’ board in the primary school setting while the dominant use of an IWB in the secondary school context seems to be as a ‘teaching’ board, with an emphasis on the presentational capabilities of the technology. It would appear that IWBs in secondary schools are used mainly to enhance and deliver lessons in the Sciences, Mathematics and in English. Within the technology market, products usually have a very short life-cycle. Computers, mobile phones, game consoles are all quickly replaced by the next generation of an even better technology. Will the IWB also be replaced in the near future? Large, touch-screen plasma televisions and some visualisers have the same presentation possibilities as the IWB (also with no need for a data projector). Wireless keyboard/mouse combinations or a wireless ‘slate’ tool can introduce ‘interactivity’ into a lesson which is directed from any computer and a data projector. Table technologies could mean that students will have their own ‘mini-IWBs’ which will be networked together as an interactive, collaboration tool. At this year’s Bett show, Intel re-launched their student-friendly ‘Classmate’ tablet-style Netbook which easily integrates with a SmartBoard and facilitates one-to-one teaching in a ‘connected’ classroom. This seems to have the potential to be an effective combination which could enhance the level of interactivity between these teaching tools.

In summary, I would tend to agree with Tim Rudd (2007) when he situates the potential of the IWB within the context of a broader ICT provision and as part of an educator’s ‘tool box’ which can facilitate and mediate pedagogies appropriate to the teaching and learning context within which the learning process takes place:

“Whilst many benefits of using IWBs are reported, this is far from universal, with a number of reported difficulties and challenges. This is not to say that the fundamental aspects of existing IWB technology are not potentially excellent tools to support learning and teaching, only that there are other factors to carefully consider. IWBs were developed with the intention to help enliven the delivery of educational content within the then existing framework, and we should not expect IWBs to be a panacea for challenges to more collaborative and interactive learning at system level” (p.11)
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The study of the impact of technology in primary schools (STEPS), funded by the European Commission, analysed national strategies for the integration of ICT in primary schools in 30 countries in Europe, their impact on learners, teachers and future development perspectives, drawing on quantitative and qualitative surveys of policy-shapers and over 18,000 practitioners, a meta-analysis of more than 60 research studies published in over 20 countries, 30 country reports and 25 case studies of good practice. This article summarises the main results of this landmark study and outlines some implications for policy-making and schools.


L’étude de l’impact de la technologie dans les écoles primaires (STEPS), financée par la Commission européenne, a analysé les stratégies nationales pour l’intégration des TIC dans les écoles primaires dans 30 pays en Europe, leur impact sur les apprenants, les enseignants et les perspectives de développement futur, en s’appuyant sur des enquêtes quantitatives et qualitatives auprès de plus de 18.000 enseignants, une méta-analyse de plus de 60 études de recherche publiées dans plus de 20 pays, 30 rapports de pays et 25 études de cas de bonnes pratiques. Cet article présente les résultats principaux et quelques implications pour l’élaboration des politiques et les écoles.

1 This paper draws on longer studies in STEPS written by the author, A. Balanskat, T. Hüsing, W. Korte, B. van Oel and L. Sali.
The ‘Study of the impact of technology in primary schools’ (STEPS) sought to provide a balanced and comprehensive picture of the impact of ICT on primary education. The study was commissioned by the European Commission Directorate General Education and Culture and undertaken jointly by European Schoolnet (EUN) and Empirica GmbH between January 2008 and June 2009.

The main purpose of STEPS was to produce a comparative analysis of the main strategies for the integration of ICT in primary schools in the EU-27, Iceland, Liechtenstein and Norway, their impact and future development perspectives. The study aimed to identify the impact of ICT at three levels: on learning and learners, on teachers and teaching and on primary school development plans and strategies. It sought to identify the main drivers and enablers for effective and efficient use of ICT, and to propose recommendations on the integration of ICT in education for policymakers and stakeholders.

**APPROACH**

A multi-perspective approach was adopted for STEPS, taking into account evidence from stakeholders (policymakers, teachers and head teachers), research and site visits to schools (including interviews with learners). Evidence came from five sources:

- a policymaker survey in the 30 countries to provide an overview of policy approaches to ICT in primary education;
- an analysis of quantitative data from over 18,000 teachers and head teachers interviewed for the 2006 LearnInd ICT benchmarking survey (Korte & Hüsing, 2006);
- a review and analysis of the evidence from over 60 research studies published in more than 20 countries;
- 250 responses to a school survey seeking qualitative insight into the impact of national strategies in schools, and the identification of good practices via self-reporting;
- 25 case studies documenting the good practices identified.

**KEY FINDINGS**

**IMPACT ON LEARNERS AND LEARNING**

ICT improves children’s knowledge, skills and competences

There is a broad consensus among primary teachers about the positive impact of ICT on learners and learning. Research shows that a range of skills and competencies are acquired by the use of ICT: digital, communication, language (first and second), social and cognitive skills. Teachers interviewed in the LearnInd survey note a positive impact on basic skill acquisition (reading, writing, calculation) through the use of ICT — and research...
echoes this finding. UK research shows that English, maths and science test scores improve with ICT, and a Hungarian study shows that ICT-rich constructivist learning environments improve learning outcomes, especially for disadvantaged children. Many case studies highlight how ICT helps children understand the subject they are studying and caters for individual needs, although schools find it hard to isolate the contribution of ICT to test scores.

However, research suggests that there is a discrepancy between children’s under-use of ICT at school and their more frequent and often more sophisticated use at home. Although a range of digital skills are acquired outside school informally, some basic computer skills are not.

**ICT increases motivation, confidence and engagement in learning**

Some 87% of teachers say that pupils are more motivated and attentive with ICT — according to the LearnInd data. Much of the research suggests that ICT has a positive impact on student attendance, behaviour, motivation, attitudes and engagement, that guided, active and enquiry-based tasks with ICT are particularly motivating, and that technology enables finer differentiation and personalisation. A large-scale comparative study shows that pupils participate more actively in learning when ICT is used. Teachers in the school survey felt strongly that ICT is a means of overcoming low motivation, social diversity and disengagement. In the case studies, there are examples of schools using ICT to improve links between learning inside and outside school and involve parents. ICT also impacted on group processes and collaborative learning.

**Assessment can be more sophisticated and individualised**

ICT-based assessment systems used in some case study schools give more sophisticated feedback to teachers, parents and pupils on their performance, e.g. through the analysis of test scores. Virtual learning environments enable the individual tracking of progress and help identify the next ‘learning step’, so enabling pupils themselves to detect errors and shortcomings. Achievement can be recorded in e-portfolios.

**IMPACT ON LEARNERS AND LEARNING**

Most teachers use ICT and are ‘ICT-optimistic’

Some 75% of primary teachers (and their pupils) use computers in class according to the LearnInd data: from around 90% in the Nordic countries to approximately 35% in Greece, Latvia and Hungary. Teachers find that ICT supports in equal measure a range of learning and teaching styles, whether didactic or constructivist, in passive activities (exercises, practice) and in more active learning (self-directed learning, collaborative work). The research shows that rich constructivist learning environments improve learning outcomes, especially for learners from disadvantaged areas. Teachers in some countries (United Kingdom, Cyprus, the Netherlands, Portugal and Poland) are more optimistic about ICT than others (Sweden, France and Austria). Nevertheless, a significant minority (21%) consider that using computers in class does not in itself have significant learning benefits. There is little to no correlation between impact-
optimism and levels of school equipment, sophistication of use or even teacher skills. There is a cluster of countries with high-skill levels and high expectations as to ICT impact: the United Kingdom, the Netherlands, Cyprus and Malta.

**ICT is pedagogically under-used**

Despite the high levels of reported classroom use mentioned above, according to some studies teachers use ICT more for administration, organisation and planning. They also indicate that teachers are aware of the potential benefits of ICT for students, have a positive perception of ICT in terms of supporting active autonomous learning and creating authentic tasks, but lack the pedagogical vision to integrate ICT effectively in teaching. The research shows that ICT can promote new pedagogical approaches, but only if ICT is fully integrated into subject lessons. In the Nordic countries, teachers in primary schools more often regard ICT as supporting their pedagogy than teachers in secondary schools.

**Quality training increases teachers’ motivation and digital and pedagogical skills**

Teachers responding to the good practice survey consider that using ICT improves their motivation and teaching skills. We know from the policy survey that the 30 countries are investing in developing teacher ICT skills; but that in a significant number of countries teachers entering the profession may have little formal training in using ICT in teaching. Researchers have drawn some worrying conclusions about the effectiveness of continuing professional development in ICT: that teachers have failed to acquire the desired level of ICT skills for classroom instruction and that training has not translated into gains in pupil learning. Research suggests that teachers adapt more easily to new technologies through a step-by-step approach with minimal disruption, and that on-site is preferable to off-site training. Training courses failed to match needs and lack the pedagogical and practical dimension, according to the analysis of responses to the policy survey. The survey also indicates that reliable technical back-up and inspiring pedagogical support for teachers are often missing.

**IMPACT ON SCHOOLS AND ICT PLANNING**

**Children’s access to technology is improving**

Analysis of the 2006 LearnInd data reveals that almost all primary schools use computers, with at least 88 % of schools in each country having Internet access and with an average of eight Internet computers per 100 pupils. However, there are huge variations in ICT infrastructure and connectivity across and within countries. The computer-to-pupil ratio ranges from Luxembourg (23 computers per 100 pupils), Denmark and Norway (18), the United Kingdom (16) and the Netherlands (15) to much lower figures for Latvia, Lithuania and Poland (6) and Greece and Slovakia (5).

According to figures provided for the policy report, the computer-to-pupil ratio now ranges from 3.1 to 32 per 100 pupils and that eight countries have more than 14 computers per 100 pupils (representing over 50 000 schools). Some 72 % of the...
study’s 209,866 primary schools have broadband and in 20 countries over two thirds of primary schools have broadband. Interactive whiteboard provision ranges from very few (e.g. Finland, Norway) to near saturation (the UK, where all primary schools have at least one). Denmark, Estonia and Norway have the highest levels of virtual learning environments that offer access from outside school. Smaller primary schools are disadvantaged in terms of equipment according to research, yet case studies show that the benefits for schools in small communities are considerable.

Whole school ICT integration and leadership matter
ICT integration in subjects and classrooms is the key to changing teaching practices, according to research — and the school leader’s support is crucial in cases where primary schools are free to integrate ICT in the curriculum. The policy survey suggests that countries with high levels of ICT favour dispersion into classrooms. Some 68% of primary schools have computers in classrooms, rather than in computer labs, according to the LearnInD data. This is the case in more than 90% of primary schools in Luxembourg, Slovenia, the United Kingdom, the Netherlands, Cyprus and Ireland. In contrast, there are 10 countries with computers in classrooms in fewer than 50% of schools (Cyprus, Estonia, Greece, Italy, Latvia, Lithuania, Hungary, Poland, Slovakia and Spain). In these countries, the majority of primary schools use computers for education in dedicated computer labs.

ICT improves administration and access to information
Schools have incorporated ICT into management tasks and ICT is increasingly used by teachers for administration and planning. In several case studies, school-wide planning improved with the help of ICT. This is because ICT makes administration accessible to wider groups through a web interface and school records are more easily maintained, exchanged and updated. However, research indicates that school ICT plans tend to concentrate more on infrastructure than on how ICT can be used to enhance teaching and learning, and this can actually work against innovation (as found in some case studies). Virtual learning environments are becoming more widespread, but are used more for administration than for learning. Research shows that sufficient time is needed to assimilate virtual learning environments. However, once introduced, they are increasingly used by teachers.

PRIMARY SCHOOL SYSTEMS
Strategies for ICT tend to feature infrastructure and teachers’ digital competence
Responses to the policy survey indicate that all 30 countries have or have recently had at least one ICT policy or initiative affecting primary schools, usually aimed at improving infrastructure and digital competence among teachers; and less frequently targeted at the supply of digital learning resources, pedagogical reform or leadership. From the 74 policies, programmes and projects analysed in the study, strategies range from a system-wide intervention including ICT to specific projects focused on, for example, equipment, e-safety or teacher educator ICT training — and with the locus of control running from central government control to high levels of school autonomy and responsibility. ICT in schools is still a topic that arouses controversy; and where the debate involves the general public, the concerns tend to be about e-safety, according to the policy surveys.

Digital competence usually features in the curriculum
Digital competence is in the primary school curriculum in 22 of the 30 countries according to the policy survey,
either integrated across subjects (in 15 countries) or taught as a separate subject (in 11 countries). LearnInd data shows that teaching ICT as a separate subject, computer science, varies across Europe: ranging from being taught in nearly all schools in Latvia, Poland and Hungary to very few in Finland (19 %) and Austria (9 %). There is little evidence from the LearnInd data to suggest that teaching computer science as a separate subject implies placing less importance on ICT in other subjects. There are, however, exceptions to this observation: in the United Kingdom, ICT is used in most subjects in 94 % of schools; but at the same time, computer science is taught separately in only 52 % of schools. In Latvia, conversely, ICT is used in most subjects in 42 % of schools and computer science is taught separately in 97 %.

ICT responsibilities within the system can be unclear

In most countries, ICT is part of general education policy and there is also a specific ICT policy for all schools, but no specific policy for ICT in primary schools. In countries where ICT has long been used in primary schools, policies seem to make fewer explicit references to ICT; and so ICT could be said to be pervasive and a given. Responsibilities can be unclear according to the policy survey: while primary schools have increasing autonomy as public sector services become decentralised, ICT responsibility in the system varies and is sometimes unclear. Hardware provision is often a national or municipal responsibility, but not maintenance, technical or pedagogical support. This can leave schools in some confusion.

SOME CONCLUSIONS

The final STEPS report is available at http://steps.eun.org. It comprises a synoptic report, conclusions and recommendations, five contributory reports, 30 country reports and 25 case studies, together with a paper describing the methodology in detail.

What is certain from the evidence is that teachers are at the heart of ICT success in Europe’s primary schools. They are positive about ICT but can be frustrated by external (and some internal) inhibitors. Teachers need ongoing appropriate training and quality support driven by pedagogy not technology, good digital learning resources and room for initiative and risk-taking. School leaders and municipalities (depending on school governance arrangements) would benefit from guidance in the use of ICT in organisational change and the use of tools for whole-school self-evaluation.

Likewise, it is clear that primary school children are excited about technology; they are competent with ICT in many (but not all) respects and are at home with technology, using it extensively outside school. This should be more actively exploited by schools, but sensitively (it’s their technology and their free time), and ensuring that critical gaps like children’s media literacy are covered.

The value and contribution of ICT as an enabler for more general educational policy visions, reforms and objectives could be more explicitly stated in policies. Technology’s impact can then be evaluated in terms of its contribution to these wider policy aims. Until recently, policy measures to encourage the use of ICT have tended to focus on improving infrastructure and developing teacher competence in ICT. From that narrow perspective it is more difficult to justify the investment. In some recent education policies and initiatives, ICT is invisible, either because it is a given or perhaps because it is perceived as problematic. Yet the evidence suggests that ICT’s impact on schools, teachers and learners can increase the effect of other initiatives, for example reducing learner drop-out, efficiency gains, key competence development, improved teaching and school autonomy.
Tom Claes is a primary teacher at the European School, Mol.

Today, a society is no longer conceivable without ICT. ICT skills are basic skills. As teachers we should support students in achieving these skills. This article tries to motivate teachers to integrate ICT in their lessons.

A clear vision of ICT in education creates a solid foundation for its use in the classroom. If you recognize the importance of ICT, you have the strengths to enable students to learn through ICT. Some examples show how you can use ICT in a lesson. It can be used to learn, to create, to give a presentation; there is a range of possibilities.


Dieser Artikel soll alle Lehrer motivieren, ICT in den Unterricht einzubinden.


Einige Beispiele zeigen auf, wie ICT im Unterricht eingesetzt werden kann, um zu lernen, zu entwickeln, zu präsentieren … und vieles mehr.

Aujourd’hui, une société n’est plus concevable sans les TIC. Celles-ci sont devenues des compétences de base. En tant que professeur, nous devons aider les élèves à acquérir ces compétences. L’article essaie de motiver les enseignants à intégrer les TIC dans leurs pratiques pédagogiques. Une vue d’ensemble des TIC est le fondement de l’utilisation en classe. Si vous reconnaissez également l’importance des TIC, vous aurez la capacité de permettre aux élèves d’apprendre à travers ces techniques informatiques. Vous trouverez des exemples pour leur utilisation pour les leçons. Elles peuvent être utilisées pour apprendre, créer, donner une présentation… Un éventail de possibilités.
There is nothing more difficult to plan, more doubtful of success, nor more dangerous to manage than the creation of a new order of things... Whenever his enemies have occasion to attack the innovator they do so with the passion of partisans, while the others defend him sluggishly so that the innovator and his party alike are vulnerable.

Niccolo Machiavelli
(1469-1527)

The road to implementing ICT in education is littered with many small and large obstacles. Some teachers are afraid to use the computer, others have enough computer skills to work with the students and to get started. What steps can we take as ICT coordinators to motivate everyone? What tips can we give? How do we get from teacher to supporter?

VISION OF ICT

ICT IS A KEY ELEMENT IN A POWERFUL LEARNING ENVIRONMENT
The educational value of ICT can be fully effective if it is combined with other materials. A classroom without a teacher is obviously irrelevant. Teachers should be able to guide young people in a way that they develop frameworks by themselves and that they can sort information and knowledge ready to handle. Young people must learn to deal critically with the computer. Interpersonal communication and cooperation in face to face relationships remain essential in the learning process.

ICT IS MAINLY A MEANS.
In primary school it is erroneous to see the computer as the final objective, rather as a tool to be used to develop skills in various integrated situations. ICT provides opportunities for instruction concerning innovations in education. New educational concepts - supported with or without ICT - have a substantial impact on the teaching organization. This organization eventually results in schools that evolve into multimedia and open learning centres. ICT should be seen as a means to support items such as work, to support areas such as learning support, participation, globalization, lifelong learning and intercultural education. Therefore, ICT will deliberately incorporate these innovations in the future.

SCHOOLS AND TEACHERS ARE AT THE FOREFRONT OF THE INTEGRATION OF ICT IN EDUCATION
The integration of ICT begins in schools and by teachers. It is especially important to help ICT starters and also to find a way to give extra support to enthusiastic teachers. The teacher as a supporter is in the middle of the class instead of teaching the lesson in front of the class. In the medium term, the organization and architecture of schools and school buildings will be different. The introduction of ICT has a significant impact
on the entire educational structure. The support and commitment of schools and teachers is needed to achieve successful innovation.

**ICT LITERACY IS A BASIC SKILL**

The use of ICT as technology and its information and communications capabilities is a skill that all young people should possess when they graduate. Even adults need to acquire that skill. The target remains the integration of ICT in all subjects and all educational levels. This goal is achieved best by children who started using ICT as a tool in kindergarten. ICT literacy is not a separate lesson.

Education, free speech and access to information are fundamental rights of every European citizen. Therefore the European parliament recognizes that internet is essential in the European Union. Access can not simply be closed. The Internet is now a European Human right.

In November 2009, an agreement regarding this was reached.

By mid 2011, Member States have to transpose this into national law.

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**THE G-ACCELERATION**

**WHAT IS A REVOLUTION?**

The classic example from the distant past is surely the invention of the printing press. Since the end of the eighteenth century, economists speak about five revolutions: the industrial revolution, the era of steam and railways, the era of steel and electricity, the era of oil and the car, and last but not least the information age.

For each revolution there is a “critical entry point”, a spark that sets everything in motion. The start of the Industrial Revolution was the introduction of the cotton machinery of Arkwright in 1771, the other were the test of Stevens Rocket4-steam for the Liverpool-Manchester railway in 1829, the opening of the Carnegie's Bessemer steel company in 1875, the production of the first T-Ford in Detroit in 1908 and the announcement of the microprocessor from Intel in Santa Clara in 1971.

In each of these revolutions, you recognise more or less a recurring pattern. In the beginning, there is above all imitation, followed by a gradual evolution of accessibility and commercialization, while also discovering and exploring the multitude of potential opportunities of the new concept. Suddenly it all accelerates (of ten uncontrollably) which then results in a real revolution. Most revolutions then offer new opportunities for restructuring, i.e. There usually follows a consolidation phase that brings new stability. In each of the listed revolutions was a profound transformation process launched that left no aspect of society untouched. Radical changes in the patterns of production, organization, management, communications, transportation and consumption led eventually to a new ‘way of life’. Each wave lasted about 40 to 60 years.

One could be under the illusion that this better knowledge of history can help us to manage and direct future development of a new wave at a critical point. But nothing is further from the truth. Every time the situation appears, even in the eyes of the best informed, it will be totally different from what has happened in other revolutions.

A simple visualization can help. And not surprisingly: the mathematicians use the 'logistic' function to describe this kind of dynamic phenomena in nature and in sociology.
As in any revolution it is good to know when we are situated in the vicinity of the G-acceleration. At that time, the process takes on its own momentum and it is difficult to adjust this. In practice, it is a task to keep the acceleration period as short as possible so that the necessary stability (asymptotic phase) is secured without too much delay.

It is our intention, in a systematic way, to try a number of solutions which guide us safely through the G-acceleration. We do want to uncover some pitfalls to prevent the uncontrollable G-acceleration. It is our collective task to ensure that the delay is as short as possible and quickly leads to new peace and stability.

So, don’t wait too long to implement ICT in your school, in your class and in your lessons.

WHY LEARNING WITH ICT?

There are several good reasons for learning with ICT:

Education without ICT is not very convincing anymore. It should reflect the experiences of the ‘youth of today’. It must have the ability to motivates the student and teacher, and has demonstrated positive effects on reducing learning problems, improving the learning performance and the attractiveness of the teaching profession. Students in schools with good ICT facilities, with school management and teachers adequately skilled in the use of computers in teaching, perform better than students in schools where ICT is not (well) integrated.

Education must prepare students for a society that demands on ICT-related skills, such as dealing with the large amount of information on the Internet. Especially for vocational education ICT is important. In most professions ICT has become very important and it is impossible to do a job without using computers. Not only ICT skills of general interest are important, but also job specific skills.

Education should not lag behind the rest of the information society. ICT in education always means ‘use ICT for learning’, also for the youngest pupils in primary schools. Most students work and play a lot at home with computers; others are dependent on facilities in schools, libraries and community centres.

The digital world is developing, is growing and is becoming more complex. The environment is not always safe. Viruses, information that conflicts with the Constitution or general norms and values, propaganda and lies are sometimes in unexpected places. Education should prepare students to this deal with these problems. Younger students should be protected, older students should be armed.

The integration of ICT can enrich and enhance education and make it attractive to students and teachers. Finally, ICT can facilitate the organization of the learning process and reduce the administrative burden on teachers and management.
HOW TO USE ICT IN YOUR CLASS

Efficient use of ICT in the classroom is more than just a few computers in a classroom, some educational software and the students put it all to work. No, ICT used in the classroom means choices, if you want to use it optimally. Choices regarding materials (software, websites ...), objectives, classroom management, grouping, curriculum content and teaching methods. It is also important to remember that, certainly in primary schools, ICT is not an end in itself but a means to knowledge, skills and attitudes.

When students and teachers use ICT in their lessons, it encompasses the development of the whole person. You can be sure that the motivation, the results, the enthusiasm will be extensive. The willingness to create, learn and work together will greatly improve.

Don’t forget, working with ICT in your class means that you educate children in one or more areas of ICT-competencies. The ICT-rose gives you a perfect view of those skills.

Principal Competencies
Learning process-oriented competencies
- The students can collaborate on a functional task in which they use ICT.
- The students can use ICT to support multimedia information proposals.
- The students can learn independently in an ICT supported learning environment.
- The students can look up information, processing and storage using ICT.
- The students may use electronic communication and send and receive private messages.

Students can independently practise using ICT.
- The pupils can use ICT independently to create a piece of work.

Instrumental skills
- The students have the necessary knowledge and instrumental skills to use the ICT equipment and use it in relevant contexts.

Social and ethical competencies
- The pupils use ICT appropriately and take on responsibility for their actions.
PRACTICAL EXAMPLES OF ICT IN THE CLASSROOM
I know very well that all this is very nice in theory. I hear many colleagues repeatedly saying that the theory is indeed very useful, but the practice is still different. Some teachers think that using ICT in the classroom is a waste of time, some activities don’t show scores (and parents like to see the results!), it requires too much preparation, I will demonstrate with some examples that with a little goodwill, a little ICT knowledge and of course good ICT materials it is not that difficult.

Example 1:
As a teacher in the Dutch section, containing mainly Flemish and Dutch students, it is impossible not to talk about November 11th (end of WW I) in the classroom. Instead of telling the whole story and showing some photos, a tremendous opportunity presents itself to use ICT. There is a wonderful website about World War I in Belgium (www.inflandersfields.be) with interesting information for the students of my class (4th grade).

With a few worksheets, containing brief instructions and many interesting questions, the students get to work individually or in pairs. At their own pace, they use the website and search for the right information and answers.

Example 2:
During initial introductions, ICT can be used easily. The interactive whiteboard is an excellent opportunity for students to get involved in these instructions. You can easily move from the board shedule to websites, pictures and other documents. With a few simple clicks you develop an interesting interactive lesson.

Example 3:
ICT is an important component during differentiation (in level and pace), group work, the use of work stations, etc. Many methods have their own software and you can find interesting exercises online. The more skilled ICT teachers may use e.g. “Hot Potatoes” to develop their own exercises to use in the classroom.
It is important to ensure that all pupils can work at the computer and not only faster students.
APPEAL:
In the European schools we have been fortunate to benefit from the Learning Gateway. Unfortunately, this is little used. However, I would like to urge all teachers to make greater use of this platform. Many teachers have well-developed lessons, PowerPoint presentations, worksheets, and Smartboard lessons. Why not upload them on Learning Gateway so that other teachers from other European schools can use them?

ICT in education is seen as supporting the learning process. It is one of the many resources that can enhance education. Children can learn by doing, where appropriate ICT should be integrated within the daily teaching situations.

Do not underestimate your students, do not underestimate yourself. It is not too late to jump on the ICT-train. It is more than worth the effort to try it in your class, integrated in your lessons, and it provides an exciting tool for your pupils to learn effectively.

Good Luck!

Tom Claes
Primary Teacher 4N
European School Mol

RETURN OF ICT IN EDUCATION

General effects:
- Learning objectives are achieved better and earlier
- Students have more pleasure in participating in education and feel successful

Specific benefits:
- High flexibility
- Increased value versus books by unlimited links to other information

Pleasure in education for student and teacher
Access to unlimited information
Better / easier integration of all sorts of applications
Easily adapt to differences between students
Learning to solve problems (independently)
Acquiring and assessing large amounts of information

Sources:
ICT-vademecumn, Visie en documenten betreffende de realisatie van ICT-leerplandoelen en -eindtermen, VVKBao.


Elke burger heeft recht op internet, De Standaard, 6 november 2009, Evita Neefs.
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RETURN OF ICT IN EDUCATION

Eurokids is a newspaper created by the 5th year pupils of each linguistic section for all children in primary and nursery classes. You can listen to each article on the school website as a podcast.

Eurokids ist eine Zeitung, die von Fünfklässlern aller Sprachsektionen erstellt wird und allen Kindern des Kindergartens und der Grundschule zugänglich ist. Dank des Programms "podcast" kann jeder Artikel auf der Website der Schule auch gehört werden.

Eurokids est un journal réalisé par les élèves de 5e année de chaque section linguistique pour toutes les classes de maternelle et de primaire. Chaque article peut être écouter sur le site Internet comme podcast.
TOUTE UNE ÉCOLE DANS LA PRESSE ÉCRITE ET RADIOPHONIQUE

Les objectifs poursuivis par la mise en œuvre de ce projet sont d’informer les autres classes, les parents, le secondaire, des activités réalisées au sein de l’école maternelle et primaire ; de motiver les enfants à l’écriture, la lecture de leur langue maternelle et des langues des autres sections linguistiques ; de communiquer, développer son esprit critique, exprimer ses opinions ; de participer à un projet commun européen dans un esprit d’équipe, de solidarité en utilisant les outils informatiques et audio-visuels (appareils photo, enregistreurs, etc.).

Eurokids est un journal de presse écrite réalisé par une équipe de 16 à 20 journalistes qui sont issus des classes de 5e année de la section primaire. Ces élèves viennent des 11 sections linguistiques de notre école. Eurokids a pour but de diffuser toutes les activités qui se font dans les différentes classes primaires et maternelles (environ 70 classes).

Cette équipe de journalistes de nationalités différentes se réunit une fois par semaine dans le cadre des cours des heures européennes. Ces « journalistes en herbe » rédigent des articles, réalisent des interviews et font des photos. Ils collectent et rédigent parfois les articles donnés par les différentes classes.

Ce journal est donc rédigé dans les 9 langues des différentes sections linguistiques.

Quand tous les articles sont rédigés sur les ordinateurs à l’atelier informatique, les journalistes les corrignent et les trient en fonction de l’année de la classe : 2 pages sont réservées par niveau.

Ensuite, ils réalisent la maquette de la mise en page et tout est enregistré sur un CD-rom. L’imprimeur se charge de le reproduire en 1800 exemplaires. L’équipe de rédaction les distribue dans les différentes classes.

Sur une année scolaire, Eurokids paraît 2 fois : en janvier et en juillet ! Eurokids n°7 a vu le jour en janvier 2010.

Depuis l’année 2008-2009, nous avons décidé de passer à la presse radiophonique. Le CD-rom est enregistré sur le site internet de l’école grâce à l’aide de Mr Fragoso : www.eeb2.eu (section Primaire - Projet à l’école). Chaque article est lu par un élève dans sa langue d’origine et est enregistré pour permettre d’écouter les différentes langues.

Il suffit de cliquer sur un article et, directement, la voix du journaliste se fait entendre....

Alors bonne lecture et bonne audition sur le site de l’école !

Annick Fauconnier,
initiatrice du projet
Enseignante en section FR
annick.fauconnier@eeb2.be
Jose Fragoso is a teacher, ICT coordinator and CDP representative in the primary cycle at the European School Brussels II, Woluwe.

James Marsden is a teacher in the primary cycle at the European School Brussels II, Woluwe.

This article examines the expansion and development of the use of ICT in the curriculum in the Primary School. Taking into account the different aspects of ICT, it reviews the current position and highlights opportunities for the future. It identifies key elements which have enabled technology to be used effectively to support the children’s work and examines the difficulties in promoting an ICT rich curriculum. In conclusion, the article shows how these projects and elements are imperative in continuing to promote the growth and development of ICT.
BACKGROUND

The past few years have seen a rapid growth in the availability of technology. Students and teachers have access to a wider range of equipment, for example, smartboards, digital cameras, laser printers and computers are becoming more powerful and faster. In addition to this, teachers themselves are progressing in their knowledge and use of technology both in and out of school, and the use of email or social networking to communicate has become the norm rather than the exception.

Wider access to the internet has resulted in more direct contact between schools and parents. In addition, the student population themselves are becoming more accustomed to using ICT in their everyday lives, not just as an educational tool. The use of social networking sites, chat, music and film downloading and the range and availability of technology has undergone rapid expansion.

In the European schools, the ICT policy and scheme of work which is currently in use (ref: 2000-D-218) has been overtaken by the rapid expansion in technology over the past few years. At the time the policy was written ICT was intended to be a tool which would lead to:

- proven expression and communication
- ability to search for, work out and represent knowledge related to the various communication channels
- interpersonal communication and collaboration, even at a distance
- effective approach to study and growth in terms of general knowledge
- acquisition of a mature and critical attitude towards the mass media

The policy goes on to state that “a pupil's familiarization with technological instruments develops a range of knowledge and skills which become the starting point for secondary education.”

To this end, the skills that were thought necessary for a primary school pupil to develop were:

- technical use of computers (starting up, switching off, using the mouse);
- searching for and entering texts (word processing, graphs, etc.);
- searching on the Internet;
- use of electronic mail;
- critical use of technical objects.

Primary school pupils would then have acquired the range of knowledge and skills which would enable them to enter the secondary school, ready to begin work on the secondary school ICT curriculum.
SOME PRACTICES

It is against this background that we have tried to extend and develop the use of technology to support and develop learning within the primary school in the European School of Brussels II.

Alongside and integral to this background, individual initiatives and projects have depended on the use of technology within the school. E-twinning has opened the school community to the wider world and has allowed communication and comparative studies between schools.

The continuing development of the school website has promoted a more open access to information for parents and encourages contacts between school and the wider world.

The writing and production of a school newspaper (‘Eurokids’) has required children and staff to develop and extend their use of computers and demonstrated to their readership the inherent possibilities of technology. This has included the use of voice recordings, digital film making and animations that have been put on the school website in a digital version of the most recent newspapers.

TO EVOLVE AND DEVELOP ICT PRACTICE IN A SCHOOL

One of the most important factors in the development of ICT in the current situation is the strong support and leadership of the school management team. This is a key factor in the progress that has been made in the acquisition and use of equipment – not only on the academic side, but also in improving school administration and communication, both internal and external.

This leadership is a crucial factor, but without a system of effective technical support staff who also have an important advisory role, this leadership would not have the impact desired.

The third link in this chain is staff expertise. The importance of the knowledge, experience and ability in this area of the teaching staff cannot be ignored. They bring a wide background of experience of software and hardware and ultimately it is they who are, with the children, the end users of the resources. The knock-on effect of this classroom-based work is that the ICT curriculum has evolved into one which is rich both in its variety and its complexity.

The wealth of knowledge and training brought by teachers to the European schools has resulted in the scaling of new
One of the most important factors in the development of ICT in the current situation is the strong support and leadership of the school management team. This is a key factor in the progress that has been made in the acquisition and use of equipment – not only on the academic side, but also in improving school administration and communication, both internal and external. This leadership is a crucial factor, but without a system of effective technical support staff who also have an important advisory role, this leadership would not have the impact desired.

The third link in this chain is staff expertise. The importance of the knowledge, experience and ability in this area of the teaching staff cannot be ignored. They bring a wide background of experience of software and hardware and ultimately it is they who are, with the children, the end users of the resources. The knock-on effect of this classroom-based work is that the ICT curriculum has evolved into one which is rich both in its variety and its complexity. The wealth of knowledge and training brought by teachers to the European schools has resulted in the scaling of new frontiers, further enhanced by in-house training in areas such as:

- The creation and use of school websites (TYPO3);
- Creation, use and maintenance of blogs (both in classrooms and during educational visits);
- Animation (use of digital cameras and software such as Movie Maker);
- Educational Learning Environments such as Studywiz.

This team of management, technicians and teaching staff together through consultation and discussion is able to effectively plan

and use the funds available. The continued investment in maintaining good quality, modern and up-to-date equipment is vital for the continued progress and the long term aim of extending the use of ICT in the school.

PROJECTS: STUDYWIZ AND NETBOOKS

Projects that are being undertaken currently in the primary school can be divided into two groups:

1) Use of technology as an integral part of work within classes. This includes use of the smartboard, the development of the use of the computer room, the mobile classroom, the use of existing computers within classrooms and the Netbook project.

2) The development of technology as a tool for students and teachers to manage individualised learning programmes – i.e. Studywiz.

The Netbook Project began with a group of students in the last month of school during the previous school year. The successful acquisition and use of ICT in this class convinced the teacher and school management to embark on the project. However, the distribution and use of 20 computers to the same number of students has been a considerable challenge and a radical change to the traditional paradigm of the use of technology: the teacher and students no longer go to the computer room. Instead, the classroom has become home to computers that the students withdraw every day from the trolley where they have been left to charge overnight.

Other teachers and their classes also have access to these computers. This access has been made available to them through workshops, enabling them to learn how to use various programs such as Studywiz.

The classroom has jumped firmly from the twentieth to the twenty-first century.

Initially it was necessary to overcome some obstacles and this has been a learning curve for both teacher and technicians concerning
the future use and installation of such equipment in similar situations. One such obstacle was that the classroom computer and the netbooks were originally equipped with different systems: Vista and XP.

Another problem was charging all twenty of the computers, because the trolley was only equipped for sixteen. This involved some gymnastics every morning connecting all the computers. Even now, unfortunately, the problem has not been resolved, and the productivity of some students has been limited because the students, having been allocated a computer with their own number on it, prefer to work with their “own” computer rather than having to share with another student.

It was also necessary to overcome other problems with some creativity, such as organizing students into teams to take out and put away the computers. These structural procedures are essential to the project, since the efficient organisation of equipment is a vital factor in maximising its usage.

The project was further hampered by network issues: often it was slow to start or simply disconnected in the middle of work in progress. On such occasions the browser screen would fade and all data, images or text that had been gathered were lost, much to the dismay of the students.

The organization of groups, early learning, and laying the foundations of work were carried out in class, but this has not focused solely on technology: the main reference points were the competences described in the Carnet Scolaire.

One of the central tasks for students at the beginning of the project was the creation and maintenance of a classroom blog. This meant, therefore, deciding if the blog as the centre of work should be given greater weighting in order to allow it to integrate more fully with the learning of the mother tongue.

An offshoot of the project was the integration of the technological skills acquired by the students with the use of a word processor and spreadsheet. At the same time as they were learning about nouns, adjectives and verbs, they were also discovering files, hardware, documents, user names and passwords.

Finally, the learning of these skills was followed by the enrolment of students in Studywiz.

Studywiz is an attempt to capitalise on students’ everyday use of ICT to enhance their learning experience. It aims to teach the students to use it in a responsible way in a safe environment. Currently only children from 5th year classes are accessing Studywiz, but it is possible for this platform to be used successfully by other year groups. Children use it to complete learning tasks, assessments, save and keep work or to send mail to their teacher and other students within the group. Teachers can use Studywiz to allow students to access work at home (for example when normal lessons have been interrupted), to set assessment tasks and to monitor pupil progress.

This project is still in the initial stages but it is already clear that it has a very positive impact on students and in time will enable the pupils to use ICT skills to support their own learning.
There is still much to do, however. Parents also need to be included in this learning process as it is they who often regard this technology with the most suspicion. Despite the assumption of the existence of a ‘computer literate’ society, some students do not have ready access to internet linked computers.

The platform itself is sometimes cumbersome to use. It is expensive (licences need to be purchased) and against emerging national curriculum-based platforms (for example Escola Virtual – Portugal) it struggles to fulfil the needs of the students of the European School system - for example, only four choices of language are available (English, French, German and Dutch). It also initially requires enormous input from teachers which runs contrary to the idea of technology as a time saving device.

Despite these problems, teachers and students involved with this learning platform believe that it is an important and exciting development that enhances everyday learning in the classroom.

**CONCLUSION**

The speed of technological development is a serious problem for educators in a world of limited budgets and shrinking resources. However, the approach in our school where the long term aim of developing the students’ use of technology to underpin their learning now and into the future is being strongly supported at all levels – school leadership, technical support, teachers’ acquisition of knowledge and a wide range of innovative projects.

The focus of the primary school ICT curriculum is changing, raising the question of where the students will go next when they enter the secondary school. Here, then, is an exciting opportunity to provide a curriculum which will challenge and motivate them still further…

…to infinity and beyond.

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CREATING MP3 FILES TO ENHANCE LEARNING

BY JULIAN MORGAN
Paper given for ARLT, July 2009

Julian Morgan is a Latin teacher in the English section of the secondary cycle in the European School, Karlsruhe.

Latin teaching in the modern classroom is prone to system failure, not least because it lies entrenched in the past. Even so-called modern, market-leading approaches to Latin teaching in the English language are now more than 40 years old. Many of our students switch off and turn to other subjects, because of a misguided feeling that these are somehow more relevant to the modern world. If Latin teachers do not go out to address this key issue in the twenty-first century, they will lose their students, as well as their jobs and the future of their subject. This article explores ways in which traditional learning can be supported and improved by the creative use of podcasting technology. The writer teaches Latin at the European School, Karlsruhe, and has been the UK partner in the CIRCE Project since 2003. The teacher training course which arose from this project won a silver award from the European Commission as one of the three best courses in the entire Lifelong Learning Programme in 2008.

It has become more apparent in recent years that we can all become content creators, at different levels, if we take the trouble to explore technology which is easily available to us at home, in the classroom, or both. One of the things we all do a lot of as teachers is talking and it is the realisation of how easy it is to record ourselves which can be a real eye-opener. In recent years I have become more aware of this and am now using sound recordings in many aspects of my work.

One moment of revelation arrived for me in late March 2007 at Derby Grammar School, when my colleague and I found out that we had entered our A2 Latin candidates for an illegal combination of literary texts. In this situation, after the initial panic, we had to face up to the fact that we had let down our three students very badly and that the only way out of the mess we had created was to be inventive.

I then made a decision to teach the Tacitus Book 1 option, which was still being offered in 2008. Instead of doing this in the normal way, I had to re-assess how to teach at at least three times the normal speed, which was to say the least, a real challenge. I then made a full set of chapter by chapter recordings of the text, using an existing translation which I had made with a Lower VI class. Instead of working from the Latin to the translation, I worked from the translation back to the Latin, in a complete set of recordings, which I made in real time. Each chapter took between about five and fifteen minutes to complete.

Working under my new method, the students were instructed to play the sound files back, while looking at the translation. Then, they were told to come to class but without the translation, and regurgitate what I had recorded for them. It became apparent very quickly that, not only were they able to do this, but were also able to go beyond what I had said, making connections and adjustments as they went. We only had four weeks to complete the whole exercise, and we were fully successful in our aim. I had never thought it might be possible to complete an A Level set text in four weeks with any class, however gifted. Yet what told here was not the time frame alone, but also the quality of learning achieved.

This method is one I can highly recommend. It need not be targeted as a four week exercise, however, and indeed, that kind of pressure is pretty intolerable in a normal situation. It could easily form part of a real lesson, after a text has been studied properly in the traditional way. All you have
to do is to fire up your computer (laptops are good for this because most have built in microphones) and go over the passage with the recording software switched on.

For Mac users, the best and easiest software to use is GarageBand, which comes free on all Apple systems, whereas for PC users, the water is a little muddier. I normally recommend Audacity, which you can download freely from http://audacity.sourceforge.net/. Finished sound files can be saved as .aiff, .wav, .avi or .mp3 files. The conversion to mp3 format makes the files much smaller and easier to transfer. In this article, I will demonstrate how easy it can be to make a simple recording from a text and then how to convert it to mp3 format.

And the end of the story, as far as the students were concerned? Two students got their A grades, both with outstanding marks in Tacitus. The third was advised by the school to concentrate on his German and not spend excessive amounts of time doing Latin, because the German grade was part of his conditional offer for St Andrews. He did not attend the lessons and his grade did suffer, as he ended up with an overall C. However, he is still studying Latin as part of his university course, emails and texts me regularly and attended the JACT Summer School this year.

USE OF SOUND RECORDINGS FOR POETRY AND REVISION

Inspired by this necessary experiment with regard to sound files, I began to turn my mind increasingly to the business of getting students to use them. Once you can demonstrate how a recording can be made, using a basic exercise such as the file CLC 46.mp3, you can then ask students to make simple files of their own, either in class, or at home. I suspect that this sort of thing does not lend itself to working with a class in a computer lab, but maybe you could try it there and see for yourself. Students working on simple dialogues or passages for reading is something which can have terrific advantages, especially if you are involved in preparing entries for reading competitions.

When I started work at the European School, Karlsruhe, in September 2007, I wanted to encourage my Year 11 students to spend time reading Latin properly, as well as take part in some kind of competition. The trouble was, that it is really very difficult to organise such an event when the partner schools are in countries as far apart as Holland and Spain! I eventually hit on the idea of the European Schools Latin Reading Competition, which opened up the possibilities of wide-scale collaboration. The rules of the competition are basically quite simple, in that students can submit their own sound recordings of a text studied, which in 2009 was the Laocoon passage from Aeneid II. All teachers submitting student work for the competition mark the work of all the other teachers’ students, to ensure fairness.

This process certainly offers a model of working between establishments across wide distances, though the reaction of some schools can be unpredictable: one of the entries in the first year of the competition appeared in the form of a video film, which was not at all what I wanted! However, I was able to learn from this, by introducing a Level 2 competition in 2009, where the Sixth form students were actually required to produce a film recording. I chose a section of the Second Philippic, because I thought it offered
huge scope for creative input, as well as the challenge of dealing with the rhetoric. In the event, only ES Karlsruhe students submitted a film, which therefore won the event by default, but it will be seen that this was in fact of very high quality and therefore not a failed experiment.

I have uploaded my student Emelie Yngstrand’s version of Laocoon and my Sixth form class’s version of a text from the Second Philippic, at http://www.j-progs.com/ARLT2009/. Both entries were winners of their categories in 2009. In addition, I have uploaded the winning entry from the first competition in 2008, where the passage was from Aeneid IV.

A CONCENTRATION ON RHYTHM

As part of my ongoing work to prepare my own students for this competition, I used the Ovid poem in CLC Stage 39, about the Flood. I did all the normal stuff along the way: students worked together on a collaborative translation and received marks for various parts of the process, including individual parts of the translation, scansion and the actual reading of the poem. The aim of the exercise was to discover what Latin poetry felt like to listeners and performers when it was part of a recitatio.

Using a laptop and data projector, the whole class reached a collaborative translation, which was then checked on screen in class. Rules of scansion were given and explained, using the well-known formula "Down in a deep dark dell stood an old cow munching a beanstalk." This was done in the traditional way, using notebooks and pencils.

Next, the students worked in pairs to create a scanned version, using all the traditional spondees, dactyls and so forth. This too
was done in a traditional way, using note
tbooks and pencils. After checking all the
scansion, we used the laptop and data
projector again to construct a set of piano
chords in GarageBand, which followed the
metrical pattern of the poem. Three basic
chord patterns were used, in C Major: the
first corresponded to a spondee, having
two crotchet-based chords per bar; the
second corresponded to a dactyl, having
crochets, followed by two quaver-Based
chords per bar; a third was created to
represent a trochee. By using simple copy
and paste techniques, it was possible to
create a digitally scanned version of the
poem. Each student took an active part
in “scanning” one or two lines of poetry.
Between each line of poetry, a bar’s rest
was inserted on screen.
After this electronic “scansion”, the
students each read ten lines of the poem
aloud, which I assessed for accuracy
of syllable numbers. There followed
discussion about how the reading
should not be allowed to become too
mechanical but should take into account
what the poem meant. Finally, we were
ready to make the collaborative recording
in class to the piano rhythms created in
GarageBand, with each student reading
one or two lines. The practice was difficult
and intense. The whole poem was now
able to be assembled on the computer,
with the piano parts removed.

Finally, I worked at home on an arrangement
of a finished product in GarageBand. In
2009, I ran the process for the second time,
and was quite determined that the new
version should be as different as possible
from what I had done the year before. I have
uploaded both versions to http://www.j-
progs.com/ARLT2009/, where they can be
compared.

**ADDING DRAMATIC EFFECT**

Once we came to preparing for the
**European Schools Latin Reading
Competition**, we had to balance the very
rhythmical approach we had found in
recording Ovid, against the need for having
dramatic impact in the reading. I was keen
that the students might try to create the
passion and anger of Dido (2008), or the
anguish of Laocoon (2009) rather than
just reading dactyls and spondees. I did
some of the work on the scansion myself,
so we would not spend too long on the
whole task, and I pre-recorded a set of
piano chords in the same way as we
had done for Ovid. I also then recorded
a swift, one-take version, in real time, of
myself reading the text. I deliberately went
against the earlier approach, by focusing
on Dido’s anger and lapses into madness,
or Laocoon’s empassioned howls.

When I played this new version in class,
the effect was considerable. The students
now understood dactylic hexameters
better than most classes I have ever
taught, and were given a reading of this
new passage as a template of what they
might now do themselves. I encouraged
them to aim for something which could
combine the two approaches, the
rhythmical and the dramatic.
We were fortunate to have a Black Board, a laptop and a projector. We divided up the class, with one student per line of poetry. We recorded audio on the laptop and video projection on the Black Board. Each student read his or her line of poetry, and we checked for accuracy of syllables.

I found that students enjoyed the interactive approach. They felt that they were part of the process, and they were proud of their work. I also found that they were able to understand the metrical structure of the poem better than I had ever taught it before.

As of now, I believe this is something to build on and I believe it could be a real development area for the future. In fact, some of the entries in the European Schools Latin Reading Competition support that belief. We can now get our students to combine technical accuracy and understanding of original texts with all the peripheral technology of the iPod age.

On a technical note, Apple’s GarageBand is a so-called loop-based sequencer. As well as creating simple sound recordings, it enables you to create MP4a files, which run on iPods where pictures can be seen on screen along with the music, as it is playing. There are similar programs for the PC but they seem to cost money, so proceed with caution. I have had good reports about FL Studio, which you can find out about at www.flstudio.com/.

If you need more information about this work, please contact me to discuss it, via email on julian@j-progs.com.

Julian Morgan,
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DISTANCE-LEARNING AND TEACHING OF SLOVENIAN IN A WEB CLASSROOM

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Marijana Klemenčič Glavica is a teacher at the Ledina Grammar School, Ljubljana, Slovenia.

The fundamental question is how to include digital technologies into the planning and implementation of Slovenian language lessons. How can they contribute to the effective and optimal achievement of objectives of Slovenian language lessons, which are comprised of linguistics and literature, in elementary and secondary schools? The following article introduces distance teaching and learning of the Slovenian language in the Moodle web classroom and stresses the urgency of the so-called didactic placement of such lessons.

Die grundlegende Frage lautet, wie digitale Technologien in die Planung und Umsetzung des slowenischen Sprachunterrichts integriert werden können oder, anders ausgedrückt, inwiefern digitale Technologien zu einer effektiven und optimalen Umsetzung von Zielen des slowenischen Sprachunterrichts, der sich aus Sprach- und Literaturunterricht in Grund- und weiterführenden Schulen zusammensetzt, beitragen können. Der folgende Artikel befasst sich mit Fernunterricht und dem Erlernen der slowenischen Sprache über die e-learning-Plattform Moodle und betont die Dringlichkeit einer so genannten didaktischen Einbringung eines solchen Unterrichts.

La question fondamentale est de savoir comment inclure les technologies numériques dans la planification et la mise en œuvre des cours de langue slovène ou, en d’autres termes, comment les technologies numériques contribuent à l’efficacité et à la réalisation optimale des objectifs de cours de langue slovène, qui sont composés de linguistique et de littérature dans l’enseignement élémentaire et secondaire. L’article suivant présente l’enseignement à distance et l’apprentissage de la langue slovène dans la classe Internet Moodle et souligne l’urgence du placement didactique de ces enseignements.

1 The article is an abbreviated and adapted article Distance learning and teaching of the Slovenian language in the Moodle web classroom, which was published in the Slovenščina v šoli magazine in the spring of 2008. The magazine is intended for teachers in the Republic of Slovenia and abroad who teach Slovenian on the primary and secondary level.
DISTANCE LEARNING AND TEACHING OF SLOVENIAN WITHIN THE E-PROJECT ENTITLED E-SLOVENŠČINA: UČENJE IN POUČEVANJE SLOVENŠČINE NA DALJAVO (E-SLOvenian: distance learning and teaching)

With the 2004 ratification of the Convention defining the Statute of the European Schools, the Republic of Slovenia obtained the right to teach the Slovenian language in the European Schools. In the 2004/2005 school year, the European School of Brussels I, which is attended by the highest number of Slovenian children compared to other European Schools, was the first to implement Slovenian language lessons, only to be followed by the European School of Luxembourg II and Karlsruhe.

ORGANIZATION OF THE E-PROJECT

In September 2006, the European Schools that didn’t have enough children for conventional Slovenian language lessons, i.e. Slovenian language lessons with a teacher directly in the classroom, organized distance teaching of Slovenian language for four students attending the European School of Alicante in Spain and the European School of Bergen in the Netherlands, within the e-project of the National Education Institute of the Republic of Slovenia entitled E-SLOvenščina: učenje in poučevanje slovenščine na daljavo. Further, at the initiative of parents and in agreement with the Ministry of Education and Sport, seven other students from Tel Aviv (Israel), Abu Dhabi (United Arab Emirates) and Dublin (Ireland) were also included in the project. In the 2007/2008 school year, Slovenian language lessons were implemented for 9 students; four were attending the European School of Brussels (Alicante, Bergen) and five were attending various schools throughout the world (United Arab Emirates, Ireland, France); in the 2008/2009 school year, the project was implemented for 15 students, two of whom were attending classes in the European School of Bergen.

The e-project E-SLOvenščina: učenje in poučevanje slovenščine na daljavo (http://info.edus.si/izod), intended for students of European Schools based in Brussels and for children of diplomatic, consular, economic, press, and other representatives of the Republic of Slovenia throughout the world, is implemented within the subject group for the Slovenian language of the National Education Institute of the Republic of Slovenia, which is preparing special and didactic solutions for distance learning and teaching of the Slovenian language, in cooperation with the subject group for computer sciences and informatics and with contemporary findings of experts in Slovenian studies.
In the organizational and contextual sense, the activities are implemented by a team of experts composed of two Slovenian language teachers, Martina Kroflič from the European School of Brussels I and Marijana Klemenčič Glavica from the Ledina Grammar School, Ljubljana, a Moodle expert, Janko Harej, from the Nova Gorica School Centre for Technical Sciences, and a member of the subject group for the Slovenian language of the National Education Institute of the Republic of Slovenia and inspector of education at primary level in the European School, Marija Žveglič.

LESSON PLANNING

On the basis of the curriculum for Slovenian as a first language (L1) in European Schools based in Brussels at primary and secondary levels, and on the basis of the valid Curriculum for the Slovenian language: Elementary School Education Programme in the Republic of Slovenia for Slovenian language lessons, the two Slovenian language teachers plan lessons. This consists of annual and ongoing preparation for the distance teaching of Slovenian – they plan discussions and evaluation/assessment of a non-literary and literary text within the distance learning and teaching of Slovenian.

1.2.1 Preparing for Slovenian Language Lessons in the 7th Grade of Elementary School and the 2nd Grade of Secondary Level

In the displayed model of the discussion of the literary excerpt, we will focus only on planning activities for achieving the education objective Učenec pregledno pozna književnika Miška Kranjca in njegovo delo (the student is familiar with the author Miško Kranjec and his work), with emphasis on the use of the Internet as an electronic source of information. From the perspective of the discussion of a literary excerpt, the so-called secondary placement of the text is at the forefront. We plan activities through which students will place the literary excerpt into the author’s creative opus and learn about his life and work.

Teacher's activities

Activities before reading the literary text/excerpt
Reading of a literary text/excerpt
Activities after reading the literary text/excerpt
Activities for achieving education objective

Life and work of Miško Kranjec

A teacher invites students to visit and read the website about the life and work of Miško Kranjec. Special attention is given to the use of a reading strategy (for example, a strategy for defining the essential element and/or the strategy for defining important details, graphic display of important information, etc.).

A teacher encourages students to prepare an original text about the life of Miško Kranjec.

Student's activities

Students VISIT the web site and READ the text. Further on, they WRITE DOWN basic information in any optional form; they note comments, possible questions, dilemmas, etc.

Before writing, students READ the biography of Miško Kranjec in the reading-book or other books (such as the lexicon of Cankarjeva založba Slovenska književnost).

Students PRESENT/WRITE information about the life and work of Miško Kranjec in an independent, original way; if possible, they present their work at a distance (for example, in the form of a speech performance through Skype).

2 In the 2008/2009 school year, Tatjana Lotrič Komac from the Naklo Elementary School, Slovenia, was also included in distance teaching of the Slovenian language.
Write down the biography of Miško Kranjec in an original/unique form (for example, in the form of a thinking model, disposition points, an imaginative interview with the author, the “Aggravation” game, quiz question, etc.).

In the initial phases of the training of students for the effective use of electronic information sources, a teacher him or herself looks for an information source and offers it to students (the meaning of reading strategies), and later, when students are more skilled, they perform the activity on their own. If we want them to be successful in searching for information in electronic information sources (as well as in others), we must train them appropriately. In expert literature (Prim. Steinbuch 2004: 165) teachers can find numerous strategies for searching or selecting information sources, but they should choose the ones which will best enable their students to find and select the facts and information they need.

In discussing a literary text as a whole or a literary excerpt, it is possible to use sources other than electronic ones. The displayed model indicates the possibility of planning secondary placement with electronic information sources (available on the Internet), which, thanks to considerable popularity among students, provide many possibilities for achieving education objectives in this particular case.

**LESSON IMPLEMENTATION**

The two teachers implement distance learning (including evaluation/assessment) of the Slovenian language by making students accept (listen/watch, read), analyse, and form a non-literary or a literary text (speaking, writing). They also prepare teaching material (including tests and matura material) that enables students to learn as independently as possible; however, they also use existing e-material, which is the result of the call for applications of the Ministry of Education and Sport (for example, e-material *Književnost romantike* v drugem letniku gimnazij, strokovnih in tehniških šol (Literature of Romanticism in the second year of grammar schools, vocational and technical schools).

Marijana Klemenčič Glavica

**LESSON PLANNING**

Distance teaching for students on the secondary level takes place three times a week for 45 minutes and two times a week for 30 minutes at primary level.

For every student and for every individual lesson, I prepare work instructions, which inform the student about the activities. The instructions also inform the student about where to look for content-related material for a teaching unit (for example, in the chapter LANGUAGE TEACHING, the title of the theme: VERB); in case he/she deals with the theme independently, he/she follows a PowerPoint presentation that relates to all phases of a lesson for a given hour (initial motivation, announcement of new contents, analyses, syntheses, new tasks, etc.). In the event that a lesson takes

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3 ‘Secondary placement’ defines literary-theoretic, literary-historic and other placement of a literary excerpt, whereas the term ‘primary placement’ is used for placing a literary excerpt within the whole literary text.
place “live”, we deal with the new subject together, while attempting to focus on the student’s experiences (particularly while motivating him/her, and later, during the analysis of new contents).

I must also point out that even if older students deal with the material independently, I check their work each time. So, I have an agreement with students to connect via video-conferencing once a week, or at least once every fortnight (at which point I explain all ambiguities, we check homework, agree upon types of exams and assessments, etc.).

**“LIVE” LESSONS**

I connect with a student through Skype and we follow work instructions. As the instructions also inform us about the location of a given theme, we open the theme and the student goes from question to question, answers and explains his ideas; if necessary, I explain new content (this is crucial, especially with younger students, while students at secondary level from the 3rd grade onwards want to be independent and like to go over the content – at least some of it – on their own. However, I must point out that I always check the student’s independent work – often with the student – so that he/she will receive feedback on his work).

**DISTANCE LEARNING AND TEACHING IN COMPARISON TO CONVENTIONAL LESSONS**

Features and Advantages:

- Adaptability to student’s spatial and temporal limitations and abilities;
- Students get accustomed to independent learning;
- The possibility of on-going correction and supplementing of material – availability of up-to-date information;
- Use of computer services: storage of learning contents, internet search;
- A video-conference connection enables contact with a teacher, who can check or assess a student’s work, which induces self-discipline and prompt work.

Deficiencies:

- Not enough e-material for the Slovenian language for all ages;
- Accessibility of printed material is often not possible (for example, students in Israel are often unable to access books – consequently, we are looking for internet sources, which are often insufficient, etc.).

Martina Kroflič

**LESSON PLANNING**

When planning lessons, I observe the following: the existing curriculum; abilities, background knowledge, working and learning habits, motivation, wishes and expectations of the children, work conditions and cooperation with parents. Students are aged 9 to 14; they have attended schools in Slovenia for a few years, but now they don’t have Slovenian language lessons as part of their regular education. So, in agreement with parents, each of them has two hours of distance lessons per week (90 min.). Lessons take place live or in a web classroom. In both cases, I prepare appropriate material for individual students or use existing textbooks and exercise books for literary or non-literary texts.

**“LIVE” LESSONS**

In live lessons (I use Skype and Windows Live Messenger), I lead a student through all phases of a lesson, while tasks in a web classroom must enable a student to go over them on his own. After a student posts his material in a web classroom, I check the solutions and give the student written or oral feedback – comment on a completed task.
DISTANCE LEARNING AND TEACHING 
IN COMPARISON TO CONVENTIONAL 
LESSONS

Deficiencies:

- Not enough e-material for the Slovenian language for all ages;
- Existing material for Slovenian language lessons (video-cassettes and audio-cassettes, manuals in a CD-format) cannot be used, because students don’t have it and it cannot be presented through Skype, so it should be converted to MP3 or available through the internet;
- Unrealizable group work or hardly realizable work in pairs (such as dramatisation of an excerpt);
- Living in different time zones can lead to more difficult adjustment of a schedule between student and teacher (for example, a three-hour difference in Abu Dhabi, where 'our' Sunday is a working day);
- Access to additional printed material is practically impossible in a student’s environment (for example, reading badge books), so we are looking for appropriate sources on the internet, which are often bad or insufficient.

DIDACTIC PLACEMENT OF DISTANCE TEACHING OF THE SLOVENIAN LANGUAGE

When a student and a teacher are physically separated in the learning and teaching process, lessons are organized in the Moodle web classroom in accordance with general features of an educational process, in terms of organizational and content-related aspects, and with specific features; but mostly in terms of time, which requires a special didactic and methodical approach. In implementing distance Slovenian language lessons, numerous questions appear: implementation of curriculum (European School), lesson implementation, monitoring of lessons, training of teachers, knowledge assessment, matura, teaching material, preparation of e-learning material, reading badge, Slovenian language competition, gifted students, inclusion of students with disabilities (for example, physically impaired, students with long-term illnesses), e-library, cooperation with parents, cooperation of a teacher with school management, inclusion of students who are doing practical training, etc.

Special didactics of distance learning and teaching of the Slovenian language opens numerous fields that experts will be forced to face in the future. Special care must also be given to (e-)learning material, which must enable independent learning as well as planning and implementing of special didactic approaches.
WHAT KIND OF LEARNING MATERIAL SHOULD BE USED IN DISTANCE TEACHING OF THE SLOVENIAN LANGUAGE?

E-material/e-learning material for use in learning and teaching of the Slovenian language – as a support in achieving objectives of the curriculum for Slovenian in the elementary and secondary school systems – should be in accordance with modern findings of professionals who define Slovenian as a school subject, and it must be appropriately methodical and didactical:

Concrete curricular circumstances should be observed (provisions and proposals of the curriculum on an individual level and within a programme with regard to objectives and contents, didactical recommendations, etc.);

Acceptance (reading, listening/watching), analysing and formation activities (speaking, writing) – non-literary and literary (e-)texts (functional objectives) should be precisely defined; at the same time, educational objectives for a subject must be foreseen;

Non-literary and literary (e-)texts should be appropriate, not only in the quantitative sense, but primarily in terms of quality;

In selecting non-literary and literary (e-)texts, the following aspects should be observed: the individual student or learner, his or her age, communicative and cognitive abilities as well as receptive and imaginative abilities, experiences, and interests;

Appropriate proposals for achieving education objectives (basic linguistic concepts, particularly on the level of use, professional expressions, writers and their works, etc.);

Tasks should encourage students to develop communicative abilities (i.e. the ability of critical acceptance of (e-)texts of various types and the ability to form appropriate, comprehensible, proper, and effective (e-)texts of various types) and to develop the ability of literary reading, acquire useful knowledge in a literary-theoretic and literary-historic sense and to perceive literature as a positive value;

e-texts/e-learning material should enable the use of modern information communication technologies to the greatest extent possible (for example, internet as a source of information, interactivity, sound, video, etc.),

Tasks should, to the greatest extent possible, motivate students to learn, to be innovative and creative, to connect background knowledge, to be independent learners, to value individualization and differentiation, etc.; this is mostly clear from the very structure of tasks that accompany (e-)texts; tasks should be formed extremely carefully (diction of instructions, taxonomic levels in case of individual tasks).
CONCLUSION

Despite some deficiencies regarding distance learning and teaching of the Slovenian language, particularly the price of technical equipment and software as well as the didactic (un)suitability of learning material, and finally, the absence of direct personal contact between a student and a teacher, it still makes sense to use distance learning for the Slovenian language, not only for lessons in extraordinary circumstances (for example, teaching children of diplomatic, consular, economic, press, and other representatives of the Republic of Slovenia throughout the world), but also as a supplementary form within regular formal education in European School, etc. (for example, discussion of an individual reading badge book, preparation of students for Slovenian language competitions for the Cankarjevo recognition, discussion of literary-historical periods with the use/making of web questionnaires).

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The following article explores how web based technology can be exploited and used to support the teaching of Mathematics in the Primary classroom. In particular, it considers an internet-based programme called Mathletics, and examines in detail why it was chosen, how it has been used to support the learning objectives of the Second Grade curriculum and how it has strengthened Home-School links. Finally, the article reflects on the success of Mathletics and the positive impact that it has had on the children's learning and on their attitude towards Mathematics.

Der folgende Artikel zeigt auf, wie Web-basierte Technologie als Unterstützung für den Mathematikunterricht der Grundschule genutzt werden kann. Im Besonderen bezieht er sich auf ein internetbasiertes Programm mit Namen "Mathletics"; es wird dargestellt, warum gerade dieses Programm gewählt wurde, wie es genutzt werden kann, um die Lernziele einer zweiten Klasse zu erreichen und wie es die Beziehungen zwischen Schule und Zuhause verstärken kann. Abschließend werden die Erfolge dieser Arbeit ebenso betrachtet wie ihr positiver Einfluss auf das Lernverhalten und auf die allgemeine Einstellung gegenüber Mathematik.

L'article suivant étudie l’application des logiciels pour Internet dans l’enseignement des mathématiques à l’école primaire. Il s’agit surtout d’un programme pour Internet qui s’appelle ‘Mathletics’. L’article explique en détail pourquoi cet outil a été choisi et comment son application en classe a pu aider à atteindre les objectifs pédagogiques de la 2e année primaire, et à renforcer la continuité entre le travail fait à la maison et celui fait à l’école. Enfin, l’article réfléchit au succès du logiciel Mathletics et à l’effet positif sur l’apprentissage et sur l’attitude des enfants envers les mathématiques.
A REVIEW OF THE IMPLEMENTATION OF THE MATHLETICS PROGRAMME IN A YEAR 2 CLASSROOM

I am currently working as a Year 2 teacher and am teaching my class for a second year. As I reflected on the progress they had made in Mathematics during the year I realised that they, like many other children, would benefit from more consolidation and practice, particularly of addition and subtraction number bonds to 20. The First Year syllabus of the European Schools lays great emphasis on the understanding of numbers to 10 and numbers to 20 and this knowledge lays the foundation for the children’s learning in subsequent years. A quick recall of these essential number bonds is not a reflection of mathematical ability but makes the subsequent learning of more formal methods of calculation much easier. Those children who have the most difficulty mastering number bonds are often the ones who would most benefit from having those facts at their finger tips. The question was how best to achieve this instant recall, and I began to research the possibilities.

WHY I CHOSE MATHLETICS

I had heard about ‘intelligent’ maths programmes which chose the activities for the children by responding to the children’s speed and accuracy and began to research the possibilities on the internet. There I discovered an internet based programme called Mathletics, which was a mixture of activities, designed to consolidate classroom learning and a maths ‘racing’ game, from which the programme takes its name. Here the children race live against other children from all over the world. They have to answer number facts questions correctly, and the quicker they answer the faster they go with the fastest winning the race. As a teacher I would have access to the Teacher’s Centre, which would allow me to follow the children’s progress, as they worked their way through the activities and offered me the flexibility to tailor the programme to the needs of my class. Since it was internet based it could be accessed from both home and school and I thought that it could provide a useful link between home and school. As well as consolidating work done in class here was another way to practise those essential number bonds in a fun and exciting way. The final point in Mathletics favour was its price; a year’s subscription to Mathletics was quite reasonable compared with other similar programmes available.

I started to use the Mathletics programme with my class in September and it has been a great success. For the children it has proved extremely motivating and enjoyable and the sessions on Mathletics have become something to look forward to. The programme has lots of in-built factors which help to keep the children engaged and motivated. When they first log on they are able to design and create their own avatar or Mathletics character. This character appears on the screen whenever they are working or racing and the children enjoy seeing the avatars of their opponents. When they are on Mathletics they earn points for correct answers and the number of credits that they have earned is shown
in the bottom corner of their home screen, so the children can easily check how they are doing. If they earn a thousand points in a week they earn a bronze certificate. Later on, bronze certificates turn to silver certificates and then silver certificates to gold certificates. The idea has been carefully worked out so that the children should be reaching the gold certificates in the summer term, towards the end of the school year. I give the certificates out weekly to rounds of applause and the children who have gained them are, quite rightly, very proud of themselves. I make a big point of telling them that their certificates have to be put up in a very prominent place at home where everyone can see them! With their credits the children can go ‘shopping’, buy accessories for their avatars and change the way they look and they usually have a few minutes at the end of each session to do this. There are also games that can be played which practise mathematical concepts, for example, catching pairs of numbers to 10 with a fishing rod or commanding a dog to move by using directional language. As the children score more points, more games are unlocked and available to play.

THE BENEFITS IN CLASS

Although the programme is very accessible and easy to use it took a couple of weeks to get used to the routines of the computer room and to become familiar with Mathletics. My class had had relatively little ICT experience but now they are able to access the internet, log in to Mathletics and use the keyboard and mouse confidently. As I have quite a large class the children often have to share a computer while they are in the computer room. However, this has brought many benefits. In those first sessions, those who had had more experience with ICT were able to help those who were not sure what to do. Later, the children would show each other different things that they had discovered about the Mathletics programme: how to find the help button, how to try something easier or harder or how to spend their credits. Now, they share their Maths expertise with each other. While they are working they are entirely focused and talk about the activities that are on the screens in front of them. They are very supportive of each other and have learned a lot about sharing and taking turns. As a class we have discussed what is the best way to help each other learn and the children have quickly realised that supplying the answers to one another doesn’t further your partner’s understanding. Instead explaining things to each other and telling your partner the strategies you used to complete an activity is more important. By explaining their strategies to each other it also helps them to clarify their own ideas and consolidate their own understanding of mathematical concepts. They read the instructions together and in doing so practise their mathematical vocabulary and by talking together they clarify any words they don’t understand. This is particularly important, as many of the children in my class do not have English as Mother Tongue. As
the children work, they often tell me about what they have done at home and talk to me about any problems in Mathletics they have had. Sometimes we can look through the activity together and this helps to clear up any misunderstandings. However, sometimes I realise that this is a difficulty that needs to be revised again in the classroom, perhaps with concrete materials. During the Mathletics session at school, the children usually complete some activities and join in some Mathletics races. The computer chooses your opponents from other children who are also logged on at the same time and sometimes two members of the class end up playing against each other which causes great excitement!

THE BENEFITS AT HOME

As a teacher the Mathletics programme offers me a great deal of flexibility as I am able to pick and choose and organise what it offers to suit the needs of my class. There are a lot of activities available in Mathletics and it is easy for the children to feel overwhelmed by choice. Therefore, by using the Teacher’s Centre I limit the number of topics available to the children each week, usually to three out of a possible six and I change the topics available so that they reflect what we are doing in class. Through the Teacher’s Centre I am also able to set Focus Activities and with the agreement of the parents I am now using this as Maths Homework this year. Each week I choose activities which will consolidate what we have been learning in class and set them as focus activities. Once they have been set, the next time the children log on these activities appear on the screen and have to be completed first, before anything else can be done. The children have one session a week in the computer room and then try to log on about three times a week from home. This Home-school link has been a very important part of Mathletics and the parents have been extremely interested and supportive. They have given the children the time and opportunity to play on Mathletics, often sitting down beside them and talking with them about what they are doing. As the Mathletics homework is related to our work in class, the parents have a better understanding of what we are doing at school and it has also given many parents more insight into their children’s mathematical abilities. Parents are also able to log in weekly into the Mathletics site and check on how much their children have done in Mathletics and what progress they have made.

Through the Teacher’s Centre I can look at each child’s progress in more detail. I can see how many times they have attempted an activity (the computer generates different questions each time the child attempts an activity) and what they have scored. I can use this information to generate reports on individual children, highlighting their strengths and weaknesses, a form of formative assessment which helps with my planning. Since the children can choose freely from the topics available their choice of activity can also be revealing. If they are consistently avoiding a particular topic it
could be an indication of a difficulty in this area. As well as setting focus activities as homework I can also set focus activities for individual children. Using the results table it is quite easy to identify where individual children need more practice and target their efforts in those directions. Mathletics also offers plenty of opportunities for differentiation, not only from the teacher’s side but the children are also able to try the activities at varying levels. If they are finding a particular activity hard they can try the Something Easier button and conversely if they are finding the activity easy they can challenge themselves with the Something Harder button. When they race they choose the level they want to race at and can switch freely from level to level. They quickly find that it is no fun racing at a level that is too challenging as they get beaten every time. Instead I find that they return to a more appropriate level and practise their numbers skills where they have a chance of winning. However, I am also able to choose at what level the children race at and if I think that they are not being challenged enough I am able to block them from racing repeatedly at a lower level.

CONCLUSIONS

I originally chose Mathletics as I thought it would offer the children in my class the chance to improve their number bonds skills and consolidate classroom work in an exciting and motivating way. However, it has brought additional benefits, some of which were entirely unexpected. In the classroom the children are much more confident with the basic number bonds. Their recall is noticeably quicker and this has allowed them to concentrate more on the new concepts that are being taught to them this year. The fact that Mathletics can be accessed from anywhere has helped to build better links between home and school. Because they have been working at home with their children, parents are now able to talk to me much more specifically about any difficulties their child might be having. Before, they might have said to me “She doesn’t find Maths very easy.” Now they say to me “She understands the concept of grouping numbers in tens and solves those problems quickly, but she still finds the subtraction sums hard” and then we can go on to talk about how we can help her in that particular area.

I thought that the programme would appeal to the children in my class but I was not prepared for how enthusiastic they have become. Between the activities, the races and the games there is something in the programme to appeal to everyone; I have a very competitive group of children who loved the races from the beginning but over time, even the more tentative children, have grown in confidence and enjoy sharpening their skills against opponents from the other side of the world. Finally, for some children, the computer has been a great motivator and through the certificate reward system it has allowed some unexpected children to shine. By using the programme consistently it is relatively easy to reach the number of points required for a bronze certificate and children who previously had limited success in Maths are now finding themselves successful, which is in turn inspiring them to play even more. For many children it has built their confidence in their own abilities and raised their self-esteem and made them realise that Maths can be enjoyable and fun!

Samantha Malmbergs
Tamara Neckermann is ICT coordinator in the German section of the primary cycle at the European School Brussels IV, Berkendael.

The article concerns itself with the possibilities of the use of multimedia ICT software in the context of "social integration" in the instruction of Primary students. The integration of new pupils, who come from other countries with different language backgrounds into an existing class community, is the main priority at the beginning of the school year. This example of an ICT course shows how independently of the teacher, they take the first step towards integrating socially.

L'article traite de la possibilité d’utiliser, au niveau de l’enseignement primaire, les TIC dans un contexte "d’intégration sociale”. En effet, l’intégration de nouveaux élèves qui viennent de pays dont la langue d’enseignement n’est pas celle de la classe sera la thématique prioritaire des premières semaines de l’année scolaire. Cet exemple d’un cours TIC pris en main par les élèves montre comment ils font un premier pas vers une intégration sociale.
Meine bisherigen Beobachtungen und Erfahrungen zeigen, dass eine positiv verlaufende Integration in eine neue Klassengemeinschaft eine Lernumgebung fordert, die Offenheit und Freiraum zur Selbstinitiative initiiert und fördert. Das bedeutet, Kindern einen eigenen Spielraum ermöglichen, indem Situationen geschaffen werden, die eine möglichst „lockere“ und angstfreie Begegnung und Annäherung ermöglichen.

Vor einer ganzen Klasse zu erzählen, wo man herkommt, welche Hobbys man hat und all die üblichen Vorstellungsrunden, ist sicherlich nicht für jeden die einfachste Variante der Mitteilung und der ersten Begegnung.


Der Auftrag an die Schülerinnen und Schüler lautete: Unsere Klasse stellt sich vor.


Das waren die besten Vorraussetzungen, um sich zielgerichtet anzunähern, zu fragen, wie alt bist du denn, wann hast du eigentlich Geburtstag, wo bist geboren, wo hast du gelebt, welche Schule hast du besucht und so weiter. Das Programm, das den sogenannten „alten Schülern“ schon bekannt war, führte zu weiteren Gesprächsanlässen und selbstständigem

Nun, wie viele „LernFLIEGEN“ hier mit einer Klappe und in zwei Unterrichtsstunden geschlagen wurden, lässt sich schnell erahnen und muss nicht dem Lehrplan entsprechend umständlich aufgelistet werden! Integration jedenfalls fand nicht nur zu zweit vor einem Bildschirm statt, sondern wurde von Bewegung durch den Raum, hin zu einer anderen Gruppe - Wie heißt du noch mal? - und wieder zurück zum nächsten - Wo bist du geboren?

Wo hast du deine Ferien verbracht? - begleitet. Und selbst die Schülerinnen und Schüler, die sich bereits zu kennen glaubten, staunten nicht schlecht, was Sie noch alles voneinander erfahren konnten.


FAZIT: WIE SIEHT EINE GELUNGENE PRÄSENTATION AUS?

Ein interessantes Lay-out, große passende Fotos - wenig Text mit dem Schwerpunkt auf Fakten - ein freier Vortrag - laute Stimme - durch Blickkontakt und mit Fragenstellungen sowie Gesten den Zuhörer in seinen Vortrag einbeziehen!


UND DIE INTEGRATION?

Die war „Schnee von gestern“!

Jeder kannte jeden und Freundschaften wurden während der Erarbeitung im ICT-Raum geschlossen - die üblichen „Kennenlernspiele“ waren dann nicht mehr nötig.

Tamara Neckermann

Nun, wie viele "LernFLIEGEN" hier mit einer Klappe und in zwei Unterrichtsstunden geschlagen wurden, lässt sich schnell erahnen und muss nicht dem Lehrplan entsprechend umständlich aufgelistet werden! Integration jedenfalls fand nicht nur zu zweit vor einem Bildschirm statt, sondern wurde von Bewegung durch den Raum, hin zu einer anderen Gruppe - Wie heißt du noch mal? - und wieder zurück zum nächsten - Wo bist du geboren? Wo hast du deine Ferien verbracht? - begleitet. Und selbst die Schülerinnen und Schüler, die sich bereits zu kennen glaubten, staunten nicht schlecht, was Sie noch alles voneinander erfahren konnten.


FAZIT: WIE SIEHT EINE GELUNGENE PRÄSENTATION AUS?

Und die Integration?

Ein interessantes Layout, große passende Fotos - wenig Text mit dem Schwerpunkt auf Fakten - ein freier Vortrag - laute Stimme - durch Blickkontakt und mit Fragenstellungen sowie Gesten den Zuhörer in seinen Vortrag einbeziehen!


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Tamara Neckermann

Inspired by an "Evaluation of quality provision in the European school libraries" and looking at the development of the library, I notice that since digital information is more easily and more widely accessible than has been printed information, the library has evolved from a passive collector of documents into an active distributor and has become the centre of information and lifelong education.

Being the centre of information means that the organisation of the libraries will change and that once they are centres of lifelong education they must be permanently accessible, not only by the pupils but also by their parents and everyone else who wants to educate themselves. The school library will have a function in public life and, while keeping its educative character, will become a partner of public and specialized libraries.


Inspiré par "Evaluation of the quality provision in the European school libraries" et en étudiant l’évolution des bibliothèques, j’ai remarqué qu’avec l’accès à l’information digitale plus massive et plus facile que l’accès à l’information imprimée, la bibliothèque a évolué de collectionneur passif de documents vers un distributeur actif et est devenue le centre de l’information et de l’éducation permanente. Devenir le centre de l’information influencera l’organisation des bibliothèques et en fera le centre de l’éducation permanente, accessible en permanence non seulement aux élèves mais aussi aux parents et tout autre personne voulant s’éduquer. La bibliothèque scolaire aura de plus en plus une fonction dans la vie publique et, tout en conservant son caractère éducatif, elle deviendra un partenaire à part entière des bibliothèques publiques et spécialisées.
L'étude "Evaluation of the quality provision in the European school libraries" (réf. 2003-D-4810-en-1) faite par le comité de bibliothèque et présenté au Board of governors via le Board of Inspectors and pedagogic mixte, donne un aperçu de la situation des bibliothèques de différentes écoles européennes et formule en conclusions plusieurs recommandations.

L'étude susmentionnée date d'avant l'escalade du terrorisme suite au « 11 septembre » et ses conséquences politiques sur la vie privée. Depuis lors, un nouveau défi s'annonce qui demandera du courage de la part des bibliothécaires pour développer et entretenir une éthique professionnelle digne à la déclaration universelle du droit de l'homme et la défense de la liberté d'accès à l'information.

L'attitude éthique du bibliothécaire devrait être reprise dans la description de tâches (job description) et en faire part entière.

Inspiré par "Evaluation of the quality provision in the European school libraries" et ses recommandations, j'ai formulé quelques idées sur la bibliothèque scolaire, non seulement pour les bibliothèques des écoles existantes mais aussi pour les bibliothèques des écoles futures.

Ainsi, j'ai recherché comment intégrer le soutien d'études individuelles, les learning activities, y inclus apprendre à apprendre tant stimulé par le centre de guidance, raccorder la bibliothèque aux TIC, l'apprentissage des bibliothécaires et des professeurs pour un usage le plus efficace des TIC dans les bibliothèques.

Tout en étudiant l'évolution de la bibliothèque du 21e siècle, j'ai remarqué que la bibliothèque a évolué du collectionneur passif de documents vers un distributeur actif d'informations et d'un centre multifonctionnel et culturel. Elle devient de plus en plus le centre même de l'école tant que le centre de l'information que le centre physique de l'école, accessible de tous côtés et par tout le monde, élèves, parents et même des personnes étrangères à l'école.

VERS LA BIBLIOTHÈQUE DU 21E SIÈCLE

Quand la bibliothèque mythique d'Alexandrie fut incendiée, des milliers de documents et d'informations sur le monde antique furent détruits. C'était au temps où les bibliothèques collectionnaient de l'information uniquement consultable sur place. La destruction d'une bibliothèque était synonyme de la destruction d'informations. Ce fut longtemps le cas jusqu'à l'arrivée de l'imprimerie.

Avec l'introduction de l'imprimerie au 15e siècle, l'information était distribuée et répandue sur plusieurs exemplaires, même sur des milliers de copies. Des savants et des lecteurs rassemblaient ces livres tout en organisant leurs propres bibliothèques.

Une bibliothèque était un endroit fixe qui conservait de l'information. Ce n'est que quand l'information rassemblée devint trop
vaste que divers systèmes furent élaborés pour classer et réunir toute la connaissance dans les bibliothèques.

Un bibliothécaire américain, Melvin Dewey, développera en 1876 le système décimal de classification, la Dewey Decimal Classification, appelé communément le Dewey. Le principe du Dewey est la succession du général au plus particulier. Pour cela il répartit l’ensemble des documents en 10 grandes classes, thème ou sujet général comme par ex. philosophie, sciences exactes et naturelles, les arts... Par la suite, chaque classe peut se subdiviser en sous-classe et ainsi de suite. Avec un plan encore plus ambitieux, la création d’une bibliographie universelle des connaissances et des sciences de l’humanité entière, et en commun accord avec Melvin Dewey, deux scientifiques européens et professeurs à l’ULB (Université libre de Bruxelles), Paul Otlet et Henri La Fontaine, créeront la Classification Décimale Universelle (CDU). Ce travail fut malheureusement interrompu par la première guerre mondiale. Les deux systèmes de classification, le Dewey et le CDU, avaient démontré leur utilité et sont à ce jour les systèmes de classification les plus répandus au monde. Comme Daniel Boornstin l’a remarqué dans "The discoverers", la diffusion de la connaissance par le livre est si immense qu’une fois imprimée, aucune loi ni ordonnance ne peut rattraper ses messages. Un livre édité plus tard peut contredire une publication précédente mais ne peut l’effacer ou la faire disparaître. Les autodafés, la censure et les index seront toujours perdants.

L’introduction de l’Internet et des nouvelles technologies d’information et de communication (TIC) ont bouleversé le monde de la communication et de la distribution d’informations et ont réduit le monde à un village. Le plus important n’est plus la collection des documents mais la diffusion. L’accès à l’information digitale est encore plus massif et plus facile que l’accès à l’information imprimée. Chaque ordinateur est une bibliothèque en soi et peut contenir des milliers de documents qu’il peut reproduire et diffuser en nombre illimité. Et même la destruction des plus gros serveurs, des plus grandes collections digitales ne provoquera plus la même catastrophe culturelle que l’incendie de la bibliothèque d’Alexandrie.

UN NOUVEL ÉLAN POUR LA BIBLIOTHÈQUE SCOLAIRE?

Une bibliothèque scolaire, en particulier les bibliothèques des Ecoles européennes, doit-elle rester à son niveau actuel ou doit-elle suivre l’évolution et élargir ses offres tout comme les bibliothèques publiques ?

Répondre à cette question, c’est prendre les options nécessaires pour l’organisation, l’emplacement et le développement des bibliothèques scolaires, pas uniquement pour les bibliothèques dans les écoles européennes existantes, mais aussi, et en particulier, pour celles des futures écoles.

Rejeter les TIC dans la bibliothèque, c’est mettre la charrue avant les bœufs. L’introduction des TIC a bouleversé notre manière de travailler. Grâce à l’Internet, les bibliothèques offrent une plus grande gamme de service aussi bien pour le loisir que pour l’étude. De plus en plus de bibliothèques l’utilisent et pas uniquement pour faciliter la catalographie, mais aussi pour offrir divers services en fonction de l’étude permanente, lifelong study, des cours d’initiation aux techniques digitales, l’interprétation et l’évaluation des
informations reçues par Internet... Ainsi que des informations sous les formes les plus diverses, non seulement aux élèves mais aussi aux adultes.

Dans l’ancienne bibliothèque avec sa documentation sur un support en papier, l’utilisateur était obligé d’aller à la bibliothèque. Avec les informations digitalisées, la bibliothèque est capable de distribuer les informations: de collectionneur, elle devient distributeur d’informations sous les formes les plus diverses (papier, CD, DVD, Internet, etc.).

La consultation de l’information n’étant plus liée à un endroit physique, l’adresse de la bibliothèque permet de distribuer n’importe quel document vers n’importe quel endroit. Ne plus être lié à un endroit a des conséquences tant pour la collection que pour l’utilisateur des documents.

En même temps, la bibliothèque développe son rôle éducatif et évolue vers un centre d’éducation de nouvelle technologie et un centre multimédia.

En dehors de l’élément technique dû à l’existence du centre multimédia et les conséquences pour la collection et la distribution des documents, l’enseignement scolaire a évolué de l’enseignement individuel vers la formation et la stimulation du travail en groupe. L’école n’est plus l’endroit où on reçoit une formation et sa préparation vers la vie professionnelle, elle devient un endroit où on apprend à apprendre.

L’éducation scolaire avec ses programmes scolaires et ses valeurs morales ne se limitera plus aux années scolaires de l’adolescent mais l’accompagnera durant toute sa vie, tant du côté professionnel que pour son temps libre.

Cela exige que l’organisation et l’inspection soient du ressort des instances nationales ou internationales avec des concepts pédagogiques et une morale qui recherchent le bien-être et le développement de tous ses citoyens et non à quelques-uns qui recherchent des profits lucratifs et véniaux avec l’organisation de l’enseignement.

L’école comme départ pour l’éducation permanente, où apprendre à apprendre influencera l’organisation des bibliothèques et fera de l’école et de sa bibliothèque le centre de l’éducation permanente, accessible en permanence et non seulement aux élèves mais aussi aux parents et tout autre personne voulant s’éduquer. La bibliothèque scolaire aura de plus en plus une fonction dans la vie publique et, tout
en conservant son caractère éducatif, elle deviendra un partenaire, à part entière, des bibliothèques publiques et des bibliothèques spécialisées.

L’organisation de la bibliothèque comme centre d’éducation permanente et en distance learning center demande une architecture adaptée.

La bibliothèque ne sera plus l’endroit où on consulte uniquement des documents en papier mais aussi des documents sous toutes autres formes multimédia les plus diverses (CD-rom, DVD, Internet, etc.).

Tous ces documents demandent des appareils de lecture appropriés et des locaux adaptés à ces lecteurs. La bibliothèque deviendra un centre qui rassemblera une multitude de locaux adaptés aux différentes fonctions (salle de lecture pour documents en papier, salle multimédia, salle d’étude multimédia, salles de travail en groupes, salle pour le distance learning, etc.).

L’association des bibliothèques scolaires, des bibliothèques publiques et des bibliothèques spécialisées aura aussi des conséquences sur l’organisation des bibliothèques scolaires telles que l’accessibilité, les heures d’ouverture, l’organisation de l’emprunt... L’influence et l’importance de la bibliothèque scolaire dans cette association seront plus ou moins importantes selon le lieu ou le pays où la bibliothèque est située. Une bibliothèque scolaire dans une région pauvre en bibliothèques publiques aura plus d’importance pour les habitants de la région que celle située dans une région riche en bibliothèques publiques bien équipées.

Néanmoins, la participation des bibliothèques scolaires exige une harmonisation des bibliothèques scolaires des Ecoles européennes tant au niveau statutaire, du human resources des bibliothécaires et le personnel administratif que celui de l’organisation matérielle des bibliothèques (catalographie, système informatique, etc.). Ce n’est qu’à la suite de cette harmonisation des Ecoles européennes qu’on pourra pleinement réaliser une coopération flexible entre les bibliothèques des Ecoles européennes, les bibliothèques publiques et les bibliothèques spécialisées, aussi bien celles des organisations européennes que nationales.
LA BIBLIOTHÈQUE DU 21ÈME SIÈCLE

ou quelques idées pour organiser les bibliothèques, non seulement dans nos écoles existantes mais aussi dans nos futures Ecoles européennes.

Dans le passé, la tâche la plus importante des bibliothèques, tant publiques que scolaires, était la catalographie et le suivi des emprunts. Avec l’introduction des TIC, la catalographie comme technique a perdu de l’importance et l’emprunt et son suivi peuvent, grâce à la RFID (Radio Frequency Identification), être complètement automatisés. Cette évolution technique offre au bibliothécaire plus de temps pour explorer et stimuler d’autres aspects du service bibliothécaire. Ainsi pourrait-on offrir d’autres services, en outre des possibilités déjà citées, telles que :

- stimuler les élèves à se familiariser avec les TIC (ICT) sous toutes ses formes, ceci en l’employant, soit pour les études, soit pour le loisir;
- stimuler la créativité des élèves en organisant des expositions avec leur collaboration et celle des professeurs sur des sujets qui les intéressent;
- organiser des causeries et des débats entre les élèves ou avec des invités, concernant la sauvegarde des notes et des documents personnels sur l’ordinateur et Internet;
- organiser des cours d’introduction à la recherche personnalisée et approfondie sur Internet.

Ces quelques exemples, entre tant d’autres, pour démontrer que la bibliothèque peut, par l’emploi des nouvelles technologies, devenir plus qu’un endroit qu’on visite nécessairement et uniquement pour étudier et s’informer avec des documents en papier.

Cette approche nouvelle de la fonction et la conception de la bibliothèque en fera le lieu central physique de l’école. Développer les bibliothèques et l’emploi des TIC est impossible sans les matériels et l’argent indispensable.

Si on veut développer les bibliothèques en centre culturel et centre d’information capables de soutenir l’éducation des élèves des Ecoles européennes, on doit prévoir les moyens et les budgets financiers nécessaires tant pour la formation du personnel des écoles (professeurs, personnel administratif et de service, etc.) que pour les besoins matériels tel que l’organisation des locaux adaptés aux différentes fonctions présentées dans cette conception de la bibliothèque comme centre culturel et multifonctionnel.

La multifonctionnalité changera la bibliothèque d’un endroit passif, isolé et uniquement réservé aux élèves en un endroit actif accessible à un public plus divers et même étranger à la bibliothèque et aidera l’école à se profiler comme un exemple d’une institution européenne indispensable dans le développement de l’Europe nouvelle.

Jean-Pierre Coppens
Jean-Pierre Coppens est bibliothécaire au cycle secondaire de l'Ecole européenne de Bruxelles III, Ixelles.

The author, the first librarian at Brussels III, gives an overview of the transformation of an empty space into a computerised library, equipped with an online catalogue (OPAC) and self-loan technology. The various steps and challenges to achieving this are presented, as well as avenues of research into solutions. The article charts the development from the decision-making phase in the library committee and other bodies within the European schools, to the conversion of the computerised catalogue to an online one, and the introduction of a self-checkout system. Finally, there are some thoughts regarding more flexible financial administration, and specialist support for the project.


L'auteur, qui est le premier bibliothécaire de Bruxelles 3, donne un aperçu de l'évolution de la bibliothèque à partir d’un local vide vers une bibliothèque informatisée équipée d’un catalogue en ligne (OPAC) et d’un auto-emprunt. Les différentes étapes et les problèmes vers cette réalisation y sont présentés, ainsi que les recherches vers des solutions. On y suit successivement la prise de la décision dans le comité de bibliothèque et ensuite dans les autres organes des écoles européennes, la conversion du catalogue informatisé en catalogue en ligne, l’introduction de l’auto-emprunt. Quelques réflexions pour une administration financière plus souple et l’aide d’un expert pour accompagner le projet clôturent l’article.
Un des objectifs communs des stages des bibliothécaires à Luxembourg-Ville, Mol et Frankfurt est d’informatiser nos bibliothèques et de mettre le catalogue de la bibliothèque en ligne (OPAC ou Online Public Access Catalog).

Un bref aperçu des sites des écoles nous apprend que plusieurs écoles les utilisent pour se présenter, mais que seules les écoles de Karlsruhe et de Bruxelles 3 mettent leur catalogue en ligne.

Ce qui suit est un court compte rendu personnel de l’installation du catalogue en ligne à la section du secondaire de l’école de Bruxelles 3.

Au commencement, la bibliothèque était un local vide, puis vinrent une table et une chaise, ensuite un ordinateur suivi de la première caisse de livres et la première question: quel système informatique bibliographique employer pour cataloguer la collection? Comme l’école était toute nouvelle et que cela devait être résolu rapidement, on a choisi le CDS/ISIS développé et distribué gratuitement par Unesco.

Durant des années, j’ai travaillé avec ce système informatisé et à un certain moment, on a même entrepris des essais avec webisis pour le mettre en ligne. Mais cela n’a pas été plus loin et j’ai continué avec mon bon vieux CDS/ISIS. Entre-temps le LGW, créé par le Bureau Central, était utilisé tant pour les élèves que pour les enseignants comme dépositaire (examen, programmes et même avec un catalogue de la bibliothèque format word).

Suite à l’évolution de l’informatique et aux demandes pour un catalogue en ligne (OPAC) de plus en plus pressantes, le comité de bibliothèque prit la décision de réaliser un vaste programme d’informatisation de la bibliothèque : un catalogue OPAC, la sécurisation de la collection et l’auto-emprunt.

L’auto-emprunt est une nécessité vu le grand nombre d’élèves et le personnel restreint (un bibliothécaire et une aide à temps partielle); de plus, l’emprunt est une routine qui exige beaucoup de temps. L’introduction de l’auto-emprunt soulagerait le personnel d’une partie de cette routine et donnerait au bibliothécaire plus de temps pour gérer la collection (recherche et achats de livres, CD et autres documents), pour présenter la bibliothèque mais aussi pour enseigner et renseigner les élèves, futurs utilisauteurs de grande bibliothèque universitaire et scientifique, sur l’emploi d’Internet comme moteur de recherche et sur l’utilisation et les systèmes de classement des bibliothèques. Ceci est d’ailleurs l’une des raisons majeures pour lesquelles on emploie, dans la bibliothèque, aussi bien la classification Dewey (DDC) d’inspiration taylorisme (une adaptation à la sauce américaine du stakhanovisme) que la classification décimale (CDU), un système de classification développé par Paul Otlet et Henri La Fontaine (Prix Nobel de la paix en 1913) pour rendre accessible dans les bibliothèques toute la connaissance et la science universelles. Un rêve qui sera peut-être réalisé avec l’Internet et l’utilisation du world wide web et l’hyperlinks développé au Cern par les européens Berners-Lee et Robert Cailliau.
La sécurisation est une nécessité regrettable. Trop de livres et des documents disparaissent non seulement par l'impossibilité de l'unique bibliothécaire d’être omniprésent mais en particulier par un manque de civisme des élèves. L'idéal serait que les élèves aient une telle éducation, honnêteté et une conscience civique, qu’ils soient convaincus que les documents disponibles dans la bibliothèque sont la propriété collective faisant part du savoir universel et qu’ils doivent être libres et accessibles à tout moment et à tout le monde. Avec le sens d'un tel civisme, on pourrait organiser des bibliothèques en accès libre à tout moment de la journée.

Un autre problème plus pratique, et pas du tout un problème majeur, est que la plupart des élèves sont en possession de différentes cartes de l’école (carte de sortie, cantine, transport...). Toutes ces cartes utilisent leurs propres systèmes de lecture et l’on ne voulait pas surcharger les élèves avec encore une carte supplémentaire.

Des visites aux salons d’exposition (entre autres ‘Informatie’ du VVBAD), des conversations avec des collègues, la consultation et la lecture des publications ont fait connaître les divers systèmes (entre autre code barre, magnétique, etc.) mais aussi la technologie la plus actuelle, la RFID. En arrière pensée, cette technologie pourrait plus tard être appliquée pour gérer l’accès de l’école avec une seule carte (tant la présence dans l’enceinte de l’école que dans les classes, le transport, la cantine, etc.); le comité de bibliothèque a entrepris son vaste programme d’informatisation de la bibliothèque.

Un dossier fut composé et introduit auprès du conseil d’administration. Un an plus tard, soit trois ans après la décision du comité de bibliothèque, commençait le travail pratique en souscrivant une offre de prix pour l’informatisation.

D’abord le catalogue en CDS/ISIS devait être connecté à l’auto-emprunt et à la sécurisation avec un minimum d’inconvénients pour les utilisateurs. Cela s’avérait impossible, car l’auto-emprunt et la sécurisation travaillaient avec le protocole sip2 et le CDS/ISIS n’était pas compatible avec le Sip2. Après maintes recherches et demandes (jusqu’à l’Unesco), ils ont dû renoncer au CDS/ISIS.

Pour le catalogue il fut alors opté pour le Vubissmart, une adaptation light du Vubis couramment utilisé dans les bibliothèques publiques et développé en fonction des bibliothèques scolaires et les CDI. La conversion du catalogue CDS/ISIS vers Vubissmart ne posait pas de problèmes majeurs.

Suite à l’offre de prix, l’installation de l’auto-emprunt et de la sécurisation ont été adjugées à Knotech. L’installation exigeait plusieurs essais et des recherches pour trouver une solution et, bien que tout avançait, on avait l’impression d’improviser sur place.


Suite à cette métamorphose de la bibliothèque, je me permets quelques réflexions.

Bien que toute l’évolution de la bibliothèque a été suivie par le comité de bibliothèque, il est préférable pour des grandes transformations de créer un groupe de travail restreint et de s’assurer du service d’un consultant externe. Ce dernier prend une part du budget mais il épargne un tas de casse-têtes et pertes de temps dus à la recherche d’information.
Une plus grande souplesse de l’administration financière des Ecoles européennes elles-mêmes est souhaitable. L’installation du système informatisé de la bibliothèque a pris plusieurs années, en partie à cause d’événements externes : le décès du directeur et la maladie du bibliothécaire, mais principalement dû à la lourdeur administrative. Avec les procédures actuelles il est pratiquement impossible de réorganiser ou d’introduire des renouvellements en moins de trois ans. Je m’explique: d’abord on doit introduire un dossier complet avec de la documentation et une estimation de prix auprès du conseil d’administration de son école. Ceci prend quelques mois, puis on le passe devant le conseil d’administration. Une fois que le projet est accepté par le conseil d’administration, d’habitude en début de l’année calendrier, le dossier fait son suivi dans les diverses instances administratives et financières des écoles. Et ce n’est qu’à partir du 1er janvier suivant, s’il n’y a pas d’objections ou de refus des instances administratives et financières, qu’on peut lancer une offre de prix. Après le temps d’attente légal, on peut enfin commencer la réalisation du projet. Tout cela prend environ trois ans et en informatique, trois ans, c’est une éternité. Pour se former une idée, trois ans c’est le temps écoulé entre la fin du Windows XP et le lancement de Windows Seven et entretemps on a connu le XP, le Vista en enfin le Seven… une certaine souplesse est de rigueur si l’on veut évoluer dans l’ère de l’informatique.

Maintenant que la bibliothèque est informatisée avec un catalogue OPAC, un auto-emprunt et une collection sécurisée, la voie est ouverte pour développer la bibliothèque en un centre de documentation informatisée avec des documents électroniques (texte, son, visuel et multimédia).

Systèmes informatiques mentionnés :
Knotech : http://www.kno-tech.nl/

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The introduction of dynamic geometry software has completely changed mathematics teaching. This article introduces a very powerful and easy-to-use piece of dynamic geometry freeware called GeoGebra, produced by the Austrian mathematician, Markus Hohenwarter.


L'introduction des logiciels de géométrie dynamique a complètement révolutionné la façon dont les mathématiques sont enseignées. L’article présente GeoGebra (produit par le mathématicien autrichien Markus Hohenwarter), un logiciel particulièrement puissant et facile à utiliser.
In the late 1980s, the introduction of two dynamic geometry applications, Cabri Geometry and Geometer’s Sketchpad, produced a revolution in maths teaching. The idea of creating, manipulating and dynamically changing geometric shapes brought a breath of fresh air to maths lessons of every grade.

Today the market offers several very good products: the above-mentioned Cabri and Geometer’s Sketchpad, Euklid DynaGeo and C.a.R. and Cinderella, among others.

A particularly powerful and easy to use piece of software is GeoGebra. It is a Java-based application developed by the Austrian mathematician Markus Hohenwarter. It is freeware and can be downloaded from www.geogebra.org. It is also possible to run the software directly from the internet, without downloading it.

The website provides versions for Windows, Mac, Linux or other Java platforms, online and PDF guides, links to a users forum and to GeoGebraWiki, an entire section of Wikipedia which provides a huge amount of material in several languages.

The present version, 3.2 has been translated into 42 languages.

The GeoGebra user interface consists of a geometry pad, a spreadsheet, an algebra window, a menu bar, a toolboxes bar, an input bar and a command bar.

With the Toolbox buttons it is possible to draw points, find points of intersection and midpoints, draw lines, segments and vectors, perpendicular lines, parallel lines, angle bisectors, tangents, polar lines, best fit lines and loci. You can also draw polygons, circles, semicircles, arcs and circular sections, conic sections and angles. In addition, length, area and slope can be found, and reflections, rotations, translations and enlargements built. You can introduce sliders, check boxes, text and images. Finally, the drawing pad can be moved to zoom and to show or hide objects.

I would like to present a simple example of how GeoGebra can be used during maths lessons in the lower classes of the secondary school.

Plot the points A=(-3,4), B=(-1,4), C=(-1,1) and D=(-3,1).
Translate the rectangle ABCD 5 lines to the right.
Write the new coordinates of each vertex.

Click on View-Grid.
Insert the points in the Input Bar.
A=(-3,4)
B=(-1,4)
C=(-1,1)
D=(-3,1)

Create a new polygon using the toolbox polygon and clicking on the points ABCD.
Create a vector 5 units towards right using the toolbox vectors.
Click on Translate Object by Vector.
Click first on the polygon and then on the vector to create the translated rectangle.
The coordinates of the vertices of the translated rectangle can be read on the Algebra Window.
Click on Move and then move point F to change vector and, consequently, the translated rectangle.

This is just one example, but the software offers many possibilities. The software can be used from year 5 in primary, to the last year of secondary.

Links:
www.geogebra.org
http://www.slu.edu/classes/maymk/GeoGebra/
http://math247.pbworks.com/GeoGebra

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Euclidean Geometry and Computer Science

This article shows the deep connection between ‘elementary’ geometry and the concepts of modern programming languages. This is done by giving different examples which show the common structure of both subjects.

The paper tries to make clear that in-depth training in geometry at middle school level enables the student to understand the concepts of modern programming much better than without it. This article targets both the active ICT-teacher and the people responsible for the syllabi of maths and ICT.

Euklidische Geometrie und Informatik


Dieser Artikel wendet sich sowohl an den aktiven Informatiklehrer, als auch an die Gestalter der Lehrpläne für Mathematik und Informatik in den Ministerien.

Géométrie euclidienne et informatique

Cet article apporte un éclairage sur les liens inhérents entre géométrie "élémentaire" et concepts de langages de programmations modernes à l’aide d’exemples. L'objectif est de démontrer qu’un cours de géométrie dans le cycle central nécessite un enseignement qualiﬁé et qualifiant d’informatique, car il convient d’anticiper l’apprentissage des principes fondamentaux de compréhension.

Cet article s’adresse aussi bien aux enseignants d’informatique qu’aux responsables ministériels des programmes de mathématiques et d’informatique.
INTRODUCTION

In the wake of the PISA study and high unemployment rates, the public is calling for a reform of our education system; politicians want urgent improvements in this area. All over Europe the different ministries for education are eagerly tinkering with new curricula.

This article also addresses teachers of maths and computer science as well as the relevant personnel in the Ministries.

The tendency to neglect training in conventional geometry in favour of more modern methods in algebra and statistics is obvious, but might be short sighted as I will point out in this article. It will show the close structural relationship between Euclidean geometry and computer science—which is not to be mistaken for clicking buttons in the applications of a well-known software producer. This should also please the ‘real’ computer scientist who is inventing new applications and developing new concepts.

In many discussions over the training of our students both with colleagues and with computer scientists working in the industry I saw that in most of their minds geometry and computer science seemed to be separate subjects. In a comparison I would like to show the profound connection of the concepts of Euclidean geometry and computer science, which I began to fully realize in the course of my teaching activity.

BASIC ELEMENTS

The point and the straight line are the simplest geometrical ‘objects’ (notice the linguistic relationship to computer science). In school they are always associated with the action of drawing and a specific notation. The classical programming languages possess so-called ‘simple data types’ (integers, floating-point numbers, characters and strings etc.) as the simplest objects. There are simple instructions operating on them associated with the action of the computer being coded in the syntax of a specific programming language.

ALGORITHMS

In the 80s and 90s the teaching of computer science was usually done by mathematics and physics teachers who emphasized algorithms. That a clever choice of the data structure can be substantial to the solution of a problem was neglected in most cases. Naturally algorithms play an important role in computer science and there is a close relationship with geometry. The following description of a construction also illustrates the relationship between geometry and different programming languages:

1. \( AB = 7 \text{ cm} \)
2. \( (C_1, C_2) = \{\text{Major Arc over } AB, \text{ angle } \gamma = 70^\circ\} \setminus \{\text{line parallel to } AB, \text{ distance } h = 4.5 \text{ cm}\} \)

Geometry has its own notation like every programming language. The syntax used here is very common in German secondary schools and essentially the same as that used in set theory.

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1 The author uses a notation for geometric constructions which is very common in Germany: Large characters in italics like \( A \) denote points of the plane, two characters like \( AB \) a line between the given points. Sets of points are denoted by \( \{\text{properties of the set}\} \), the symbol \( \cap \) means an intersection of sets. \( k (X; r = 2) \) means: Draw a circle around \( X \) with radius \( r \).
The ‘code’ is then translated into an action by the student. An interpreter or a compiler takes over this task for the respective programming language. The use of computer-aided dynamic geometry systems in the lessons makes this analogy even more obvious.

Without comments and/or instructions, the expert reader also needs some time to understand which figure will be constructed. In exactly the same situation is the computer scientist, if confronted with an unknown/uncommented program.

Before writing down the description of the construction the actual work is done by the brain: the problem is analyzed and different solution types are run through. This is often done in a trial-and-error manner. The analogy of solving a construction problem and writing an algorithmic program is perfectly obvious.

The concept of the subroutine or function becomes clear in step (2): also in geometry often-used construction steps can be summarized in a metalanguage term. Programmers also archive often used algorithms in a library.

The instruction summarizes:

\( \{ \text{line parallel to } AB, \text{ distance } h \} \)

(1) \( S_1 = \{ \text{line perpendicular } XY \text{ in } X \} \cap k(X ; r = z) \)

(2) \( S_1 = \{ \text{line perpendicular } XY \text{ in } X \} \cap k(X ; r = z) \)

(3) \( S_1, S_2 \)

Again one can see the close link to the concepts of programming languages:

- New subroutines are allowed to use already existing subroutines (line perpendicular, circle \( k(X ; r = z) \) etc.).
- There’s a handing over of variables unknown prior to the actual execution of the construction \( (X, Y, z) \).
- Subroutines can use/define local variables. \( (S_1 \text{ and } S_2) \)

Naturally the geometry teacher does not refer to these facts, but the brain structures of the students adapt to these new concepts enabling them to understand the programming techniques very quickly later on.

**OBJECTS**

The attempt to model a certain part of physical reality led both to the development of geometry, and modern programming languages and to complex structures with certain properties.

To every student it is intuitively clear that a finite line has the property of "length". One point, however, does not (compare with Euclid’s definition). In a similar way a floating-point number has the property of additive potential. A multidimensional array, however, does not—except if one defines this in any (reasonable) way.

Modification and combination of the geometrical basic objects enable us to create sets of new objects with various properties dealt with in a large number of the geometrical theorems. The triangle for example helps us to understand the properties of polygons. To consider the polygon just as set of Cartesian points would be impractical and hinder deeper understanding.

In a very similar way the programmer combines simple data types to objects with various properties (array, record etc.). These again can be combined to
more sophisticated structures. Thus one finds hierarchies develop in a similar way in geometry: polygon → quadrilateral → rectangle → square.

The concept of inheritance, one of the main characteristics of object-oriented programming languages, becomes very clear: A square has all the properties of a polygon; some of them however in a very limited way. In the same way instances have the same or similar properties of the classes, which they were derived from. But also the other way is possible: a circle can be seen as a set of points and has many more properties than its predecessor. Here is an example in C++ which directly maps the geometric definition:

```cpp
class point
{
protected:
    int x,
    int y;
public:
    point (void);
    point (int x1, int x2);
    point (point& p);
    point& moveBy (int dx1, int dx2) {
        x += dx1;
        y += dx2;
        return *this;
    }
};
class circle : public point // derived from class point
{
protected:
    int radius;
public:
    circle (void) : point (0,0) {
        radius = 1;
    }
    circle (int r) : point (0,0) {
        radius = r;
    }
    circle (point& p, int r) : point (p) {
        radius = r;
    }
};
```

The students understand and work with these ‘very advanced aspects’ of geometry at the age of 13. To write an object oriented program would be far too much for them. But good geometry training makes it easy for them to understand the more advanced and abstract concepts of computer science in the sixth grade—also the students are not necessarily aware of it.
PROBLEM SOLVING

Already in the last section the ‘actual task’ of geometry and computer science was addressed: the described elements are a tool for the solution of problems usually of a technical nature. On the basis of a skilful modelling of the problem (choice of a spare body/data structure) the problem is analyzed (drawing auxiliary lines and geometrical partial figures, splitting up into smaller problems) and then the solution is developed in a creative process. The subject of problem solving is sophisticated and beyond a rigid system. But the strategies of finding a solution are not only similar for geometry and computer science but the same.

CONCLUSION

The article was intended to clarify the high inherent structural similarity of the concepts of geometry and computer science by some examples. This similarity is not by any means coincidental, as might be clear to every expert reader. The steps for solving a problem apply to both disciplines equally:

- Modelling the problem
- Choice of a suitable representation
- Fragmentation into smaller, perhaps already solved sub-problems
- Development of new approaches
- Compilation to a final solution

CONSEQUENCES FOR THE SCHOOL

Geometry lessons develop brain structures and the understanding of concepts, which the future computer scientist needs. Geometry is independent of current computer systems and the programming languages now used and/or development environments. Euclidean geometry was developed in the course of many centuries in contact with many cultures of the antiquity. It has existed for at least 2000 years in its abstract form. The favourite operating systems and programming languages of today are 30 to 40 years young and still being developed with tremendous speed.

Algorithms taught in school in the 80’s were replaced by the object oriented methods, which are already outdated now by current developments in computer science. Nevertheless a third year student of the secondary school receiving proper training in geometry will be able to understand even more abstract concepts of computer science in ten years. Good training in Euclidean geometry helps our students more than specializing in current trends in computer science, which are already outdated when introduced at school. Please do not mistake me: I am not arguing against modern and interesting
conclude the high inherent structural similarity of the concepts of geometry and computer science by some examples. This similarity is not by any means coincidental, as might be clear to every expert reader. The steps for solving a problem apply to both disciplines equally:

- Modelling the problem
- Choice of a suitable representation
- Fragmentation into smaller, perhaps already solved sub-problems
- Development of new approaches
- Compilation to a final solution

Geometry lessons develop brain structures and the understanding of concepts, which the future computer scientist needs. Geometry is independent of current computer systems and the programming languages now used and/or development environments. Euclidean geometry was developed in the course of many centuries in contact with many cultures of the antiquity. It has existed for at least 2000 years in its abstract form. The favourite operating systems and programming languages of today are 30 to 40 years young and still being developed with tremendous speed.

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Ideally the curricula of geometry (3rd to 5th year secondary, depending on the system) and computer science (6th year secondary) should complement each other: for the computer science teacher it should be easy then to introduce the basic and advanced concepts of his/her subject.

The syllabi of the 80s stressed algorithms, the syllabi of the late 90s object orientation... What will we read in ten years in our computer science curricula?

ABOUT THE AUTHOR

The Author currently works with the European School at Karlsruhe as a teacher of maths, physics and ICT. Previously he worked for almost ten years in grammar schools in Bavaria.

Markus Sperl


Cet article s’engage d’abord à offrir un bref tour d’horizon de l’histoire ethno-linguistique du gaélique avec quelques perspectives sur les aspects politico-culturels de la langue. Il contient un bref résumé de l’histoire et du rôle actuel du gaélique dans le système national d’éducation en Irlande ainsi que dans le système des Écoles européennes. L’article tient compte en particulier de l’enseignement du gaélique aux Écoles européennes primaires de Luxembourg. Il cherche à évaluer l’utilisation de l’informatique et les technologies de communication dans ce domaine et à offrir des réflexions sur leur efficacité comme outils pédagogiques.
INTRODUCTION


HISTOIRE

L’irlandais est reconnu parmi les langues vivantes les plus anciennes au monde. Elle appartient à la famille linguistique des langues indo-européennes dans laquelle se trouve la plupart des langues modernes européennes. Dans le cadre linguistique indo-européen, l’irlandais est en relation étroite avec les autres langues celtiques, à savoir, le gaélique écossais, le mannois, le gallois, le cornique et le breton.

Le gaélique moderne descend directement du proto-Celtique de l’Anciennité. La langue "Celtique" de l’histoire ancienne pose des problèmes sur le plan historico-sémantique (terme nébuleux, ambigu, difficile à définir même chez les spécialistes linguistiques et sans forme écrite en caractères latin avant le sixième siècle). Le "celtique" dans ce contexte historique est d’une appellation générale pour la multiplicité des langues de la même origine linguistique parlées parmi les peuples celtiques qui ont émergé comme groupe particulier en Europe. Avec l’essor de l’art nouveau celtique "La Tène" au fil du VIe siècle av J.C., le pillage de Rome et Delphes; respectivement en 390 et 279 av J.C., la puissance celtique atteignit son apogée. Jusqu’au moment de la défaite de Vercingetorix par les forces de César à Alesia en 52 av. J.C., leur influence sur le développement de la culture européenne était considérable, la victoire romaine signalant le début du long déclin de leur hégémonie3.

En Irlande, contrée jamais conquise par les romains, la culture linguistique des peuples celtiques continuait à se développer et à s’épanouir. L’alphabétisation a été introduite dans le pays avec la diffusion du Christianisme au cours du Vᵉ siècle et c’est là que commence l’histoire de la tradition littéraire du gaélique. Le panégyrique Amra Choluim Chille, écrit en 597 par Dallan Forgaill, est l’œuvre littéraire en gaélique la plus ancienne dont on peut constater la date

2 Bunreacht na Éireann / Constitution of Ireland (Constitution de l’Irlande). Article 8. Paragraphe 1: “Ós i an Ghaeilge an teanga náisiúnta, is i an phrionnnmhgho afogail / The Irish language as the national language is the first official language.”
3 Cunliffe, Barry. The Celts. Pages 65 à 66.
4 Gantz, Jeffrey. Early Irish Myths and Sagas. Pages 3 à 6.
de composition avec certitude\textsuperscript{5}. La victoire anglaise à la Bataille de Kinsale (Cath Chionn tSáile) en 1601 marque la chute des chefs gaéliques et met fin à l’ordre socio-culturel et politique qui était le leur. Au cœur de cet ordre se trouvait la langue gaélique et sa riche tradition littéraire. Dépourvus du patronage et de la protection des chefs vaincus, les bardes faisaient face à l’abîme.

Dès lors, l’anglais remplace de plus en plus le gaélique comme langue de foyer en Irlande. Langue de la haute culture irlandaise autrefois, le gaélique devient stigmatisé aux yeux du peuple, étant associé à la pauvreté, à la misère et à la marginalisation dans l’imaginaire du plus grand nombre d’irlandais. Ce processus de transition linguistique continue avec une rapidité étonnante au fil des XVIII\textsuperscript{e} et XIX\textsuperscript{e} siècles jusqu’au point où, du début du XX\textsuperscript{e} siècle, la langue était presque anéantie (Voir figure 1 en dessous). Pendant les années 1893-1922 un mouvement activiste pour restaurer la langue a réussi à mettre fin à ce déclin presque catastrophique\textsuperscript{6}.

Figure 1: Le déclin du gaélique en Irlande au fil du XIX\textsuperscript{e} siècle\textsuperscript{7}

<table>
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<th>1851</th>
<th>1861</th>
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<tr>
<td>Population monoglotte gaélique</td>
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<tr>
<td>Population bilingue (anglais et gaélique)</td>
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\textsuperscript{5} Caerwyn Williams, J.E. & Ní Mhuiríosa, Máirín. Tradísíun Liteartha na nGaeil. Page 67.
\textsuperscript{7} Caerwyn Williams, J.E. & Ní Mhuiríosa, Máirín. Tradísíun Liteartha na nGaeil. Page 345.
\textsuperscript{8} Boyce, D.George. Nineteenth Century Ireland. Page 78.
gaélique. En 1878, l’enseignement du gaélique était permis dans des conditions fortement restrictives aux élèves des plus hautes classes et, suite à une longue et souvent amère période d’agitation par les activistes de la Ligue gaélique (fondée en 1893), l’instruction bilingue fut permise dès 1904 dans certaines régions où le gaélique restait la langue maternelle du peuple.

Suite à l’établissement de l’État Libre d’Irlande en 1922, la philosophie des écoles primaires se tournait vers la favorisation de la culture irlandaise, le gouvernement voyant dans le système d’éducation un instrument convenant à leur projet ambitieux de raviver le gaélique. Dorénavant, l’étude de la langue était obligatoire dans les écoles primaires et secondaires, une situation qui perdure jusqu’à nos jours.

### LE PROGRAMME RÉVISÉ DES ÉCOLES PRIMAIRES IRLANDAISES ET L’INFORMATIQUE (1999)

Le programme révisé des écoles primaires irlandaises, obligatoire dans toutes les écoles primaires de la République irlandaise, a été lancé officiellement en 1999. Ce nouveau programme a remplacé l’ancien ‘Curáclam Nua’ (Nouveau Programme), document d’esprit libéral, éclairé et progressif, qui avait guidé la pratique de l’éducation primaire avec un vif succès dans une période de grande transition et de changement dès son lancement en 1971. La section du programme révisé qui s’occupe de l’enseignement du gaélique est suivi actuellement aux Écoles européennes primaires. Il insiste clairement sur l’importance et le potentiel de l’informatique dans ce domaine:

> C’est crucial que les éducateurs et les enfants puissent profiter des bienfaits qui sont offerts par l’informatique et les technologies de la communication... On peut tirer maintes ressources des technologies de l’information et de la communication. Les enfants peuvent en profiter si on leur apprend à s’en servir.

(Traduction de l’auteur)

Le programme souligne les multiples avantages pour les pédagogues et les élèves qui s’attachent à l’informatique dans le cadre de l’enseignement de la langue irlandaise. Il les note et ébauche sur les rubriques suivantes: Ordinateur (P.C.), Messagerie Électronique (Email) et Internet.

En préconisant l’utilisation de celles-ci, le programme révisé valorise les possibilités de l’informatique en indiquant des voies stratégiques utiles dont les instituteurs peuvent tenir compte dans leurs pratiques quotidiennes de classe. Il recommande que l’on exploite le PC pour les activités suivantes: jeux pour les enfants de tous âges; jeux mathématiques; jeux qui font participer les enfants aux activités thématiques et les font participer à des histoires interactives; des logiciels utilisant des images qui permettent aux enfants de créer un film ou une histoire; la pratique de l’écriture en salle de classe; le processus d’écriture; préparation, ébauche, correction et rédaction de l’œuvre écrite; rédaction de l’orthographe et de l’alphabétisation et, enfin, l’utilisation...

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14 Ibid. Page 171.
de l’infographie, des images et des cartes dans la composition d’histoires écrites ou dans la conception de dessins animés ou comme illustration d’histoires ou descriptions. 15

Parmi les nombreux avantages présentés par le courrier électronique dans le contexte de l’enseignement de l’irlandais, le programme révisé recommande les approches suivantes: envoyer des notes et des messages électroniques aux autres écoles ainsi qu’aux élèves dans les autres classes de la même école permettant de recevoir et de lire des notes et courriers électroniques des autres élèves.

À l’égard de l’Internet, le programme préconise son usage pour renseigner sur des informations pertinentes à l’apprentissage du gaélique à ce niveau; profiter des informations obtenues sur Internet dans les projets de groupe ou de classe; participer aux cours de “classes virtuelles” en gaélique et former des liens de communication avec d’autres enseignants et élèves dans le domaine virtuel d’apprentissage16.

Le monde de l’informatique et de la technologie de la communication a beaucoup changé, s’est développé et a avancé depuis la publication du programme révisé de 1999. Néanmoins, la déclaration finale de ce document, en ce qui concerne le grand potentiel de l’Internet et les nouvelles technologies ainsi liées, dans le cadre de l’enseignement et l’apprentissage du gaélique, reste visionnaire, prophétique et encore valable:

On peut bien utiliser la technologie de l’information et de la communication en ce qui concerne l’enseignement et l’apprentissage du gaélique. Cela plaît beaucoup aux enfants et on ne peut ignorer l’importance accordée à l’informatique dans chaque domaine de la vie quotidienne. Il n’est pas nécessaire que les enfants puissent maîtriser la dactylographie, mais qu’ils puissent lire des textes faciles et suivre des instructions pour jouer à des jeux. On peut utiliser parfois des logiciels en anglais mais il faut couvrir les textes au bas de l’écran. En surfant sur Internet on peut noter les plans et enseignements historiques et généraux en d’autres langues afin de les traduire en gaélique. On peut bien apprendre le gaélique en dehors de l’école en tirant le maximum de la classe virtuelle...17 (Traduction de l’auteur)

La déclaration susmentionnée donne une idée nette, précise et sans équivoque de la nécessité d’actualiser, d’informatiser et d’engager complètement les enseignants du gaélique dans l’informatique afin de mieux réaliser les objectifs pédagogiques du programme révisé de 1999. En général, la vision ébauchée par cette déclaration représente un pas positif vers une approche plus moderne, éclairée et dynamique vis-à-vis de l’enseignement du gaélique. Elle préconise une attitude professionnelle plus ouverte aux technologies interactives et multisensorielles; une perspective pédagogique qui est, enfin, plus engagée avec le vaste potentiel en constante évolution de l’informatique en classe de gaélique.

En fait, les recommandations de la déclaration concernant l’usage et la traduction des matériaux source, disponibles sur Internet en langues étrangères, représentent un changement de philosophie inimaginable quand les approches pédagogiques, en ce qui concernait l’usage des matières en d’autres langues, étaient gouvernées par une attitude rigide, pleine de jugements voire peu éclairée.

15 Ibid. Page 171.
16 Ibid. Page 172.
17 "Is féidir teicneolaíocht an eolais agus na cumarsáide a úsáid i múncheadh agus i bhfoghlaíom na Gaelt. Is maith le páistí i agus tá bheim láidir ar úsáid an ríomhair i ngach gné den sac. Ní ghá go mbeadh páistí óga in ann clósscríobh as Gaeilge, ach is féidir leo léithéidteach a fháil i bhforbairt agus treoachta a leaganúin le chun clú a imirt. Unaíonta is féidir úsáid a bhaint as clár Béarla ach bhun an scáileán a chuíodh mha tá scribhneoireacht ar. D’fhéadfadh léarscáilteanna, eolas stairiúil agus ginearaithe a threadhadh ar thar éagsúlacht agus is féidir an eolais seo a aistrú go Gaeilge. Ta eolas trí Gaeilge le fáil freisin de bhun a bhain go Gaeilge fhoghlaíom tadoí ar den scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin. Is féidir is féidir Gaeilge a fhoghlaim såbhinn an scoil sa seomra ranga florúil ach a bheith ceangalta leis an gcéad sin.
**L’ENSEIGNEMENT ACTUEL DU GAÉLIQUE AUX ÉCOLES EUROPÉENNES DE LUXEMBOURG**

Durant l’année scolaire 2009/2010, 26 élèves participaient aux cours de gaélique dans les Écoles européennes primaires de Luxembourg, dont 15 à Luxembourg I et 7 à Luxembourg II. Contrairement à la situation en Irlande, les cours de gaélique aux écoles européennes ne sont pas obligatoires. La seule condition d’inscription aux cours est que l’élève soit de nationalité irlandaise. De fait, même l’inscription dans la section anglophone n’est pas exigée comme préalable à l’accès aux cours de gaélique malgré le fait que la plupart des étudiants de gaélique dans les écoles primaires se trouvent dans cette section. En effet, cette année (2009/10), un élève de la section espagnole a rejoint la liste des étudiants de gaélique et dans le passé, des élèves des sections germanophone et francophone avaient été acceptés.

L’enseignement est conduit par trois enseignants irlandais détachés pour lesquels cette tâche représente une importante fonction de leur rôle éducatif au cœur du système des Écoles européennes.

Ces dernières années, on a vu un déclin considérable dans le taux d’élèves prenant le gaélique comme troisième langue optionnelle dans les Écoles primaires de Luxembourg (une chute de 21,13% entre 2004/5 et 2009/10, voir Figure 1 ci-dessous). Malgré la baisse inquiétante témoignée par les chiffres, la trajectoire du gaélique dans les Écoles de Luxembourg reste positive. L’avenir reste optimiste grâce, dans une large mesure, à l’enthousiasme des élèves, au dynamisme d’une équipe dévouée et au soutien de la direction, des parents et des inspecteurs. Enfin le sort

![Figure 2: Taux d’élèves de nationalité irlandaise prenant le gaélique comme troisième langue optionnelle dans les Écoles européennes primaires de Luxembourg entre 2004/5 et 2009/10. Les figures, inquiétantes, indiquent une baisse de 21.2% pour une période de 5 années.](image-url)
du gaélique, langue minoritaire et protégée, dans le système des Écoles européennes reste plutôt entre les mains des parents des élèves que dans celles des professionnels de l’enseignement. Leur reconnaissance de l’importance vitale de cette langue comme caractéristique importante de la culture, de l’identité et de l’ethnicité irlandaise, doit rester au sein du projet de conservation et cultivation linguistique dans les Écoles européennes où l’étude du gaélique n’est pas obligatoire pour leurs enfants. Certes, leur soutien actif et leur activisme constructif restent vitaux au salut et à la validité du gaélique à long terme.

La formation professionnelle joue un rôle essentiel en présentant aux professeurs de gaélique les avantages de l’informatique comme outil pédagogique d’une haute valeur éducative. En novembre 2005, les titulaires irlandais des Écoles européennes primaires ont suivi un stage de formation organisé par le ministère de L’Éducation et des sciences sur Le programme révisé de gaélique et les nouvelles approches qu’il entraîne. Le stage a eu lieu à l’École européenne de Mol en Belgique et les superviseurs de la formation ont tiré avantage, au cours de la formation, des facilités technologiques excellentes de cette école, dont la renommée en matière de l’informatique et son application à l’enseignement étaient déjà répandues dans le système des Écoles européennes. Durant cette formation, les participants ont profité des présentations sur l’utilisation et l’application du tableau blanc, le projecteur, l’appareil photo numérique et la webcam pendant les classes de gaélique. On les a équipés de plusieurs CD, DVD et de maintes listes de sites web pertinents pour mieux assister l’intégration de la théorie de l’informatique avec la pratique de l’enseignement. En proposant ce mariage de la technologie de la communication et de l’information avec le processus d’apprentissage d’une des plus anciennes langues d’Europe, le stage de Mol représentait clairement la capacité de l’informatique de moderniser, d’améliorer et de rajeunir les approches pédagogiques traditionnelles sur ce sujet.

Plus récemment, les collègues irlandais à Luxembourg ont fait un travail acharné pour s’adapter et s’habituer aux exigences du programme révisé en ce qui concerne l’usage de l’informatique pendant les cours de gaélique. Depuis quelques années, nous avons revisé nos propres pratiques pour identifier les nouvelles manières d’introduire l’ordinateur et l’Internet plus souvent dans les leçons et, en général, élargir les possibilités pour l’usage de l’informatique avec nos élèves.

En cinquième année, on a entrepris un projet de communication avec cinq autres écoles primaires en Irlande. L’idée était que les élèves au Luxembourg communiquent en temps réel avec d’autres élèves du même âge et du même niveau scolaire en Irlande via la webcam; qu’ils se présentent et s’expriment en gaélique, en utilisant des expressions simples et explorant des thèmes populaires (musique, météo, famille, loisirs, etc.) déjà examinés en classe et approuvés, au préalable, entre le professeur au Luxembourg et son homologue en Irlande. Les buts de ce projet sont de nouer des liens durables socio-culturels avec des étudiants de gaélique au Luxembourg et des élèves de primaire habitant en Irlande; d’augmenter le niveau d’aisance des élèves de chaque côté en gaélique et, enfin, d’intégrer l’usage de l’informatique aux leçons de façon régulière.

En cinquième aussi dans le cadre du même projet, les élèves vont essayer d’enregistrer des messages vocaux sur l’ordinateur. Ils vont se présenter de façon brève par enregistrement d’environ une minute. L’enregistrement sera par la suite envoyé comme pièce jointe à une messagerie électronique aux écoles participantes en Irlande.

L’utilisation de la webcam et la technologie Skype permettent aux élèves de joindre,
virtuellement, d’autres enfants sur le chemin de l’apprentissage. L’effet de l’informatique dans cette approche est de donner une impression forte aux étudiants que l’apprentissage du gaélique valorise leur identité culturelle et linguistique de façon pratique et réelle.

La multiplicité des sites gratuits pour accompagner l’apprentissage du gaélique représente un vaste réseau de ressources pédagogiques de premier choix dont on peut tirer avantage dans la salle de classe. Le site de la chaîne gaélique TG4 (http://www.tg4.ie/), par exemple, offre des émissions pour les enfants (des dessins animés, des jeux de questions-réponses, etc.) de très haute qualité qu’on peut montrer à l’écran d’ordinateur en classe ou même, en profitant du projecteur, au tableau blanc.


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<tr>
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<td></td>
<td>4ème Année</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>5ème Année</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total Lux I</strong></td>
<td></td>
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</tr>
<tr>
<td>Luxembourg II</td>
<td>Maternelle</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1ère Année</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2ème Année</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>3ème Année</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>4ème Année</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Lux II</strong></td>
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<td>9</td>
</tr>
<tr>
<td><strong>Total à Lux I &amp; Lux II</strong></td>
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<td>26</td>
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*Figure 3: Nombre d’élèves irlandais suivant des cours de gaélique à chaque niveau aux Écoles primaires de Luxembourg I et II pendant l’année scolaire 2009/10.*

*Étudiants de gaélique dans les écoles Européennes primaires de Luxembourg 2009/2010*

*Figure 4: Pourcentage d’élèves de nationalité irlandaise suivant des cours de gaélique dans les écoles primaires de Luxembourg I et II, distribué par école, dont la plus grande partie sont inscrits à Luxembourg I.*
CONCLUSION

L'informatique joue un rôle indispensable dans la pratique de l'enseignement des langues. Le PC, l'Internet et la messagerie électronique représentent, collectivement, des éléments essentiels de l'apprentissage en ce domaine. Dans le cadre de l'enseignement du gaélique, l'intégration de l'informatique avec les approches plus traditionnelles sert à garantir l'avenir de cette langue ancienne et minoritaire.

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Deborah Nicholson is Language II English and Human Sciences teacher in the secondary cycle at the European School, Alicante.

Digital Visualizers as a teaching aid in a multi-lingual learning environment

In many schools throughout several educational systems we are finding our classrooms filled with multi-lingual, multi-national and multi-cultural learners. As we forage for tools and props to support our diverse skills when providing and enriching learning environments for these audiences, could it be that the digital visualizer provides a welcome support? We have moved from Flashcards to Interactive Whiteboards, from T & C to V.L..E’s, from Chalk Face to Digital Interface and such tools work well alongside one another when used wisely. This article explores the potential of digital visualizers in providing an animated, malleable visual aide which could bridge some gaps created when the language of teaching is not the native language of the learners.

“Can a Digital Visualiser Help Bridge the Gap for Students Whose Native Language is Not the Vehicular Language of the Lesson?”

By Deborah Nicholson

Les visualisateurs numériques comme supports visuels dans un contexte d’apprentissage multilingue

Dans plusieurs écoles, partout dans les différents systèmes éducatifs, nos classes se remplissent d’apprenants plurilingues, multinationaux et pluriculturels.

Lorsque nous recherchons des outils et des accessoires qui puissent venir à l’aide de nos capacités quand nous fournissons et enrichissons des environnements propices à l’apprentissage pour ces publics, le visualisateur numérique pourrait-il nous apporter le support qu’on avait tant espéré ? Nous sommes passés des images au tableau interactif, d’une méthode traditionnelle d’enseignement à un environnement virtuel d’apprentissage, du tableau et de la craie au tableau interactif ! Et de tels outils fonctionnent convenablement quand on s’en sert sagement.

L’article qui nous occupe explore le potentiel des visualisateurs numériques qui nous apportent des supports visuels animés et souples qui nous permettent de combler les brèches créées lorsque la langue d’enseignement n’est pas la langue maternelle des apprenants.
WHAT IS A VISUALISER?

In essence, a visualiser is a digital camera on the end of an arm (either rigid or flexible), but it is the controls available via the base unit and/or software that increase the usefulness of the visualiser. A visualiser (also referred to as a document camera) is a tool that enables the user to show any physical object or action to an audience, via a digital projector.

With most visualisers, you can to zoom in and out, freeze and capture an image then review the image captured. Software that accompanies the visualiser allows for further manipulation of the image or artefact such as time-lapse capture to track changes over a period of time.

The illustration on the right shows the kind of visualiser I have been using in the classroom. It connects to a splitter which in turn connects to a ceiling mounted projector. The splitter connects the computer, the Digital visualiser and the interactive whiteboard, so the benefits of all 3 tools can be combined and used simultaneously.

CONTEXTUAL USE

As we are aware, once students reach secondary level in the European School system there are some subjects where the language sections come together and one common vehicular language is used. Whilst this is a very positive aspect of European School education and an excellent way to accelerate language learning, we are constantly looking for ways to ensure equality of opportunity for non-native speakers.

Following a lesson observation feedback session with Chris Shenck (HMI) I had been looking at ways of avoiding multi-lingual teaching in a single lesson but compensating for the absence of translation, and had found the digital visualiser to be an effective tool in bridging the language gap and allowing students to focus on the art of teaching and learning. What I hope to demonstrate here is valid justification for this opinion and provide evidence from research and practice to substantiate it.

The visualiser facilitates teachers’ capacity to control the nature and pace of the information available to pupils .... allowing the children to have a better understanding of what they’re learning. Teachers reported that children feel more involved in what’s happening.

(Becta case study November 2008)
In my own context the visualiser is used to:

- Visually demonstrate artistic techniques – by doing them and projecting them through live video streaming, and recording and replaying when necessary
- Show examples of good practice – by displaying students’ work-in-progress in a format large enough to share with the whole class without the students leaving their places
- Demonstrate shape, colour, depth of field, perspective and other topics – by showing real 3D objects or drawn 3D objects and removing planes one at a time
- Display the subject to be drawn – by placing it under the visualiser, rotating it and enlarging it (for example a skeletal head from the biology lab when drawing the face)

The method chosen would depend greatly on the contextual use of the visualiser and some other examples are shown below. I have found and cited excerpts from many examples of different uses of this tool. I have selected with the intention of illustrating the versatility across curriculum areas and key stages.

- Display/Share pupils’ work and artwork on a large scale without the need for movement by the student and without the risk of damaging the work
- Using the ‘Zoom’ feature, natural/manmade objects can be studied in great detail. Items such as coins/banknotes, butterfly wings, shells and flowers
- Share a book where the teacher can read to the class and everyone can follow on screen (make any book into a “Big Book”)
- Visually demonstrate artistic techniques without reversing light and dark as with a blackboard and enabling demonstration of technique with real medium rather than simulated as with a whiteboard, in a way a whole class can see easily
- Assist with sight impaired pupils with larger visuals for them to see
- Displaying ‘delicate’ texts such as historical documents/maps/photos
- Modelling how to use a ruler/protractor or other new geometric tool
- Taking a series of snapshot images to create an animation
- Demonstrate a science experiment with reduced risk through increased distance and movement
- Displaying/observing fauna and flora such as caterpillars, beetles/ladybirds, leaves etc.

Adapted from a document published by the National Centre for Technology in Education, November 2008 and including suggestions offered by teaching colleagues

Chris Drage in an article for the Guardian (January 2008) described visualisers as “an excellent all-round tool (for teachers) guaranteed to enhance teaching and learning in … school”

He goes on to say:

“Visualisers are digital presentation and teaching tools that enable teachers to share a much wider range of information and artefacts with their pupils via their digital projectors. They allow the examination of text, images, artefacts and even living things in visual learning opportunities that users of the old overhead projectors could only dream about.

Essentially, a visualiser is a digital camera on the end of an arm, but it is the controls available via the base unit and/or software that offer so much more. Typically, even on the most basic of small visualisers you are able to zoom in and out, freeze and capture an image then review the image captured.”

Chris Drage, Head of Infrastructure Technical Architects Group, Reading, United Kingdom (2008)
There are three main modes of operation when using a visualiser:

- At the simplest level it can be connected to a monitor or digital projector and all the class can see the target object.
- When connected to a PC that runs visualiser software, more opportunities present themselves, for example slow motion, time-lapse capture, storage and review of any 2D/3D object, split-screen operation and mirrored images, B&W and negative imaging and video casting.
- If the PC is connected to an interactive whiteboard then annotation over 3D objects becomes possible.

In an art classroom context I have used the visualiser to enhance and increase the engagement of a greater number of students in multi-lingual whole class discussion.

BRIDGING THE LANGUAGE GAP IN A MULTI-LINGUAL ENVIRONMENT

The Digital Visualiser is used in a multi-lingual environment. Quite often visual aids are used to demonstrate a new skill, material, theory or style. These may be demonstrations by the teacher, video clips, and PowerPoint presentations. These aids provide a visual or kinaesthetic hook to hang the verbal presentation on and serve to aid understanding of students who have a lower level of comprehension within the vehicular language. The introduction of the digital visualiser has enhanced this particular aspect of my teaching substantially.

Below is an illustration of a class about repeated patterns found in nature and replicated in man-made designs. I was able to show a photograph of leopard skin and allow the students to approach the Interactive Whiteboard and overlay marks following the direction, length and repetition of the natural model. The limitations of the IW meant that we could not change pressure or tone and were limited to primary colours.

The addition of the Digital visualiser meant that we could include these subtleties which more closely simulated the work I wanted to carry out themselves. As you will see by combining the digital visualiser with the whiteboard I was able to show, touch and rotate a peacock feather, then enable the students to watch as I demonstrated replicating the patterns we found there. They discussed the project in their various native languages, often translating for one another. Watching, following and copying the live demonstration did not need any minimum level of language and this way ensured equality of delivery. Whilst the differentiation for this task was by outcome, it was not necessary for me to take into account the various native languages when doing assessment as so much of my teaching had not relied on verbal communication.

In the above images the feather is touched, turned, separated and discussed and explored by teacher and students.
In this series of images the teacher draws the feather while explaining the process in English. The non-Anglophones are able to see the demonstration and lose very little by not fully understanding the verbal explanation of the process.

I also conducted a very brief survey with three questions displayed on the whiteboard in all 4 languages to 2 groups of first year secondary students, 23 in one group and 24 in the other.

<table>
<thead>
<tr>
<th>Question</th>
<th>Unsure</th>
<th>Positive</th>
<th>negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you find it easy to understand the instructions for the task if they are written only?</td>
<td>4</td>
<td>7</td>
<td>36</td>
</tr>
<tr>
<td>Do you find it easy to understand the instructions if the task is demonstrated to the class on A3 paper?</td>
<td>0</td>
<td>17</td>
<td>30</td>
</tr>
<tr>
<td>Do you find it easier to understand the instruction and advice if they are demonstrated under the visualiser?</td>
<td>1</td>
<td>34</td>
<td>12</td>
</tr>
</tbody>
</table>

In addition, I interviewed 2 members of staff in my school and later invited them to a demonstration of the tool in the art room setting.

Teacher 1 (a pre-school teacher who is part of a European working party on updating and harmonising the pre-school curriculum) commented that he could see many uses in an early learners’ classroom. In particular he could turn any book into a Big Book and keep his hands free for pointing, indicating and gesticulating. He thought of the possibilities with older, out-of-print books. He also wondered about the possibility of its use when children are invited to do Show and Tell and they bring pets, insects or delicate objects.

Teacher 2 (a secondary science teacher specialising in biology) has used digital microscopes before so had a clear idea of the potential; but, whereas microscopes are limited to what will fit on a slide, Debra observed that the visualiser could be used for large objects and processes. Her subsequent ideas included using the tool to demonstrate dissections while students remained seated affording them a far better and more detailed view of the process. She also wondered if it might enhance a demonstrated experiment, again reducing the need for movement around the lab.
WIDER CONTEXTUAL USE AND OPINION

To broaden my knowledge of professional opinion and use of the digital visualiser and in the hope of finding more examples of good practice, I conducted an Internet forum over a two-week period.

Whilst a forum and its threads are not as immediate as a face to face interview, I did receive a larger number of responses. Not all were relevant and many posts were questions rather than experiential reviews. However, I did receive many useful comments and the excerpts below are some of the responses received:

My forum platform: “I am studying the use of the Digital Visualiser in the secondary classroom. I would welcome comments and observations from colleagues who have had experiences (both positive and negative) of the device”.

I posted the thread on www.educationforum.co.uk and on the Yahoo community site.

IMPACT OF THE DIGITAL VISUALISER ON DIFFERENT LEARNING STYLES

As I mentioned earlier, I would like to look at the impact of the visualiser on different learning styles. In my opinion its use to kinaesthetic learners is self-evident, as illustrated in the various previously mentioned examples of good practice. However I was interested to find out more about its impact on visual and auditory learners.

In a recent case study on visualisers commissioned by BECTA and carried out by schools in Barking and Dagenham the experience and conclusions were almost exclusively positive.

Teachers said that whole-class teaching is easier as the entire group can discuss an object or image. The teacher does not have to pre-prepare or scan the resource, as they would if they were using a computer-based image or projector. The teacher can draw pupils’ attention to specific aspects of the visualised image. Teachers also reported that the image quality is better than those which are scanned or projected. The visualiser conveys an image exactly like the original.
Teachers can also demonstrate skills to a whole class at the same time. In Barking Abbey School, an example was provided of a teacher using a visualiser to demonstrate soldering technique to a class. By using the technology, the teacher could focus in on the wires and the circuit board. The whole process could be enlarged, enabling even this detailed technique to be seen by the whole group. Pupils did not have to crowd around a desk to try to see and the teacher did not have to demonstrate the technique over again to pupils in smaller groups.

Staff in Manor Junior School said that a key factor enabling them to achieve success in the use of whole-class teaching technologies was that attention has been given to how the equipment enhanced, rather than changed, practice. The whole-class technologies were found to complement current teaching and learning approaches. BECTA study (2007)

In these groups the teacher will have been catering for mixed learning styles and the visualisers seem to have benefitted the groups as a whole.

I did wonder however whether the DV would present problems for auditory learners and conducted a small experiment as illustrated below:

In this third example the teacher gave a running commentary of her own actions, checked on the progress of the student verbally at regular intervals and described verbally what she was doing as she drew each stage of the eye. The teacher verbally instructed the student to pay attention to the angle and pressure of the pencil, and instructed the student to look at the lightness of stroke and how the second layer of pencil marks obscures the marks made for construction.

The third example is clearly the most effective and successful. However we have to bear in mind possible difference in observational and representational skills already acquired by the subjects. Even considering this there does seem to be some evidence that even the multi-sensory applications of the visualiser cannot REPLACE verbal instruction and guidance, only enhance it and this should be a particular consideration with auditory learners.
CONCLUSIONS AND OBSERVATIONS

Art by its very nature is a visual subject. Experiments have long been carried out as an attempt to incorporate other senses. Art and music combined; tactile art with textured surfaces for visually impaired students, even “human art” – shapes made by students bodies, are just some examples.

Quite often I encounter the pupils’ misconception that some people just can’t draw! I try to reassure them that as drawing is defined as

To Draw:
- to compose or create (a picture) in lines.
- to mark or lay out; trace: EG to draw perpendicular lines.

Oxford Concise English Dictionary 2009

There is no reference here to quality or assessment. So theoretically everyone CAN draw. My aim as a teacher is to build confidence and expand the repertoire of my student artists, not to evaluate their offerings for art’s sake.

The Digital Visualiser has been an invaluable tool and has become an integral part of my lessons. My unwavering enthusiasm for its potential will mean I will continue to explore other ways to exploit it. However this action research has also reminded me that in the context of multi-lingual learners (as in almost any other) there is no substitute for sound teaching practice and the awareness of the teacher of the needs of his/her pupils and how best to cater for them and facilitate their engagement learning, and progression in an equal and accessible way for all.

Leach and Moon of The Open University observed after having conducted research into the use of ICT in general.

“...In each of these instances we also see teachers’ pedagogical knowledge, including the use of the ICT, being integrated with subject and school knowledge to improve and extend pupil learning and, in the case of art, to transform the nature and outcomes of learning in the subject itself”

J. Leach and B. Moon (2000)

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Deborah Nicholson
François Roosegaarde Bisschop is ICT coordinator and timetabler in the secondary cycle of the European School, Karlsruhe.

Eugene Voorneman is ICT coordinator in the primary cycle of the European School, Karlsruhe.

This article deals with the facilitating of communication in schools via cloud computing. It focuses on the improvement of general communication as well as on the successful integration, in the European School in Karlsruhe, of the WebUntis system for the registering of absences.

Cet article aborde la communication facilitée par l'informatique en nuage. Il se concentre sur l'amélioration de la communication générale ainsi que sur l'intégration réussie, à l'Ecole européenne de Karlsruhe, du système WebUntis pour l'enregistrement des absences.

Dieser Artikel beschäftigt sich mit der Vereinfachung der Kommunikation in der Schule mittels "cloud computing". Er berichtet aber auch über die Verbesserung der allgemeinen Kommunikation und die erfolgreiche Einführung eines Absenzensystems an den WebUnits der EE in Karlsruhe.
Amidst all this overwhelming noise, organisational communication is often perceived as interruptive, instead of being appreciated. Every educational counsellor or director can tell you tales of how hard it is to reach teachers and students. Every teacher knows how much effort it takes to find and talk to colleagues or parents.

Would it be possible to make this communication easier, more effective and more accurate? And if so, how?

Our answer to the first question is definitely: “Yes, it is possible”.

In our contributions we share our solutions and plans to improve our organisational communication within the school. The first will be about the absence registration and the second contribution will deal with organisational communication in general. Our idea is to work from top to bottom at the moment. We will start some projects in the secondary school and will integrate this, if successful, into the primary school as well.

**EASY COMMUNICATION IN THE CLOUDS (1)**

**WebUntis**

A normal hectic school day in September. The phone rings (again) in my timetabler room. It is the deputy head: “François, I need all the absences of this student during the last school year” and he names the student. “And I need it now”, he adds. I open my browser, log in into WebUntis and I select to some date somewhere in the last school year. Clicking on the button “Absences” the screen fills itself with a lot of names. I search for the name of the student and click on the button “Report”. In a new window a PDF opens with all absences of this student with dates and information about excuses (or rather the lack of excuses). I don’t go to the deputy’s office, but simply select his printer and push the button. Done.

That is what WebUntis is all about: simple, available, in the cloud, in your own language. Where does this name WebUntis come from in the first place?

WebUntis is the internet version of a program called Untis. Every timetabler will know the name Untis, because it is one of the most common programs, used to create timetables. And therefore all information of which particular student should be in what class at a certain moment in time is stored in Untis. By moving it to the internet, this information is made accessible to staff. Teachers can check if this particular student is actually present. So there you have it: an online absence registration system. But how does it work?

Early in the morning parents start to call school to say their child is ill. The staff member in charge picks up the phone and enters this information into WebUntis. So by the time teachers go to their classes and login to their computer, these absences are already available.
Since every room in school is equipped with a computer, teachers can login everywhere in school and they immediately see which student is missing. They add additional absences with a few clicks if necessary. Some teachers prefer to enter absences later during the day at school or at home. But within a day or two, educational advisers (Erziehungsberater) will have an accurate picture on the absences of the last few days. (Figure 1) Instead of spending time on entering information from paper into some system, they have time to follow up the absences which are not accounted for. And not only the educational advisers.

Let me tell you about this little incident I experienced, being class teacher of 6N. On Tuesday morning I teach my class during the 3rd and 4th period. Once I logged in into WebUntis and saw that one of my students had been absent during the first hour. My colleague had entered him absent and I asked my student what had happened. I sensed a certain hesitation, but finally he admitted: "...well, I overslept ...". How I reacted, I will leave to your imagination. But ask yourself this question: "What would be more effective? To be able to react and correct during this very morning or to react after a few days or may be even weeks?". And that is not all.

Parents want to be informed too, of course. So last year we provided the parents with login data for WebUntis. Now they can login and see the absences of their child in real time. (Figure 2) Besides that, a personalised timetable of their child is available and also remarks, comments and lesson content teachers might have entered. In particular the lesson content and homework information is very practical if a student is ill or not attending school for some reason.

When I thought about this I suddenly realised something. During the last two years WebUntis transformed from an absence registration system into a practical communication system. And that is why people like it.

Educational advisers like it because they receive accurate information fast. WebUntis is able to print all kinds of reports to help them in their work. (Figure 3) They can concentrate on the follow up of absences. For them WebUntis is also used to communicate to teachers if students left or entered the school. This saves them a lot of time.
Teachers like it because it is very simple to register an absent student. On the same screen they are informed about students who are leaving or who are new in school. This is information they are interested in. Also more and more teachers use WebUntis to enter their lesson content. It is very practical to quickly see what you did the lesson before. Printing the Cahier des Matières Vues is just a push on a button. Teachers are able to print several reports in order to keep an overview on the absence of their students.

Even the timetabler likes it because for him it is a way to publish the timetable. In this way he provides the management, the nurse and security with up-to-date information. (Figure 5) Also the publication of next year's timetable and subject groups is done over WebUntis. No wonder people are logging in, even during the summer holiday.

And students like it too, because they can hack the system and erase absences. At least they try to do that. Which brings me to topic of security, privacy and other problems. When we started with our first pilot in spring 2007, WebUntis was hardly out of beta phase. No manual, no courses were available. We had to learn as we went. One of the problems we faced was to convince colleagues to use proper passwords. I know of teachers who used a simple return as password. And be honest, for students it was just too easy to take advantage of the situation. It was the merit of an attentive educational adviser who noticed absences disappearing that we were able to react. We alerted the teachers, urging them to change their passwords as soon as possible. Reducing the privileges of the teachers also helped. A similar situation occurred the following year. We learned to be on our alert and remind people to change their passwords regularly, not to type them in when students are looking, etc.

During the introduction of the new system, we had to take into account that not everybody was as skilful in using computers as we had expected. So offering support and be available for questions turned out to be vital. Introducing a system like this should not be taken lightly. People need time to learn and adjust. Some are very quick in adopting a new approach; others need more help and encouragement. Examples of how other colleagues used the system, their enthusiasm and new ideas, inspired others to take the plunge. As a result, WebUntis has proven its usefulness and is completely integrated in school life.

After almost two years in which we worked with WebUntis, I think we can say that the result is worth the effort. It helped staff to be much more efficient. A lot of people rely more and more on the availability of all this information. There is a growing appreciation on the side of the parents and a subsequent growth in number of users. Putting the timetable in the cloud has paid off.

François Roosegaarde Bisschop
roosegaarde@eskar.org
In 2005 one of the system managers set up an eskar.org account at Google mail. Every teacher in the school received a school email address *hisname@eskar.org*, but in fact all email is hosted by Google. Up till then the email was hosted on the school server. This approach used to create a lot of problems. By outsourcing the mail the system manager ended years of frustration. Since then school email simply worked. And because of that, teachers actually started to use their school mail. It has evolved since then into a major communication channel. Users can access their mail in school or at home, over their internet browser or through their favourite email program, like Outlook.

Google mail offers also its users a (video) chat function. Chat can be very practical for short communications if people are on line at the same time. In the primary and secondary school we set up some distance learning projects with various schools in Europe and our Google account was a useful tool to set this up.

All email, which is addressed to the school in general, is forwarded to every teacher. So everybody is informed and with the search function within Google mail one can go back in time to find older information easily.

During the current school year the school will be taking the next step. We are going to publish the school calendar online using the Google calendar of the eskar.org domain. The aim will be to make relevant information more available for every staff member. For improved accessibility every computer in school will have a program, called Rainlendar, which displays the Google calendar on each desktop. (Figure 6)

When a teacher logs in, Rainlendar automatically starts up. It then synchronises with the Google calendar and shows the upcoming events for the next two weeks. The user can select the school calendars of the primary school, the secondary school and/or the calendar with dates of the holidays.

For ordinary users this information is “read only”. A few members of staff, like the educational advisers, ICT coordinators or secretaries, have the right to add information. When desired, these users open a new window by clicking on the appropriate date (for example 25th of November). (Figure 7)

In this example the information is entered: “Career counsellors year 5 (no lessons)”. Next the time of the event is submitted and the appropriate calendar selected. Subsequently this new event is synchronized over the EskarOS calendar and Rainlendar is updated on every screen in the school and at home. (Figure 8)

Of course this is a very efficient way to keep every staff member of the school community informed. At the same time, this communication channel is not intrusive, it is simply there if you want it. The user can decide which calendars are of interest and switch off the ones of lesser relevance. At the same time, an educational counsellor...
EASY COMMUNICATION IN THE CLOUD (2)

Google mail and Rainlendar

In 2005 one of the system managers set up an eskar.org account at Google mail. Every teacher in the school received a school email address: hisname@eskar.org, but in fact all email is hosted by Google. Up till then the email was hosted on the school server. This approach used to create a lot of problems. By outsourcing the mail the system manager ended years of frustration. Since then school email simply worked. And because of that, teachers actually started to use their school mail. It has evolved since then into a major communication channel. Users can access their mail in school or at home, over their internet browser or through their favourite email program, like Outlook.

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In this example the information is entered: "Career counsellors year 5 (no lessons)"). Next the time of the event is submitted and the appropriate calendar selected. Subsequently this new event is synchronized over the EskarOS calendar and Rainlendar is updated on every screen in the school and at home. (Figure 8)

Of course this is a very efficient way to keep every staff member of the school community informed. At the same time, this communication channel is not intrusive, it is simply there if you want it. The user can decide which calendars are of interest and switch off the ones of lesser relevance. At the same time, an educational counsellor or secretary can enter new information very easily. No sheets of paper need to be printed, photocopied, displayed or put into pigeonholes.

The program runs under Windows, MacOS or Linux and is available in many languages. All information is stored in the Google calendar and can also be accessed by browser over the Internet when teachers login into the eskar.org domain. This can be practical when members of staff are travelling.

Teachers will have the possibility to use Rainlendar at home as well, keeping up to date all the time. Rainlendar can be downloaded from www.rainlendar.net. Please notice that only the pro version synchronizes with Google. On request a site licence can be bought.

Of course more applications are conceivable. One possibility would be to add additional calendars for all years. Teachers would be able to enter their tests, school trips, etc.

For now, we are busy implementing this practical, versatile, easy to use and affordable means of communication in the cloud.

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This article explains Infograph’art: a fun, dynamic mix of computer technology and traditional art.

Dieser Artikel erklärt den Kunstbereich “Infographie”, ein anregender dynamischer Mix aus Computertechnologie und traditioneller Kunst.

L'article explique ce qu'est "Infograph'art", un concept réunissant l'infographie et l'art. Ce cours, qui se veut dynamique et ludique, est à mi-chemin entre les cours d'informatique et les cours traditionnels d'art.
INFOGRAPHIE?

Peu de gens connaissent le sens du mot « infographie ». L’infographie traite de l’image numérique. Elle désigne l’éventail des champs d’application graphiques concernant les compositions visuelles, telles qu’acquises (via le scanner) ou importées (via appareil photo, CD, clé USB), créées (via la souris ou la tablette graphique) ou transformées (via le logiciel graphique ad hoc) par l’ordinateur. Processeur performant, mémoire cache adaptée, carte graphique haut de gamme, moniteur adapté : voici la base matérielle. Pour la base technique de la création, les logiciels de traitement d’images de qualité sont incontournables. Ils ne manquent pas, mais lorsque les recherches plastiques nécessitent d’allier aux transformations numériques une aide à la conception de mise en page et de communication visuelle performante, l’horizon professionnel se montre plus restreint. D’autant que l’échange entre ces deux versants de la création numérique doit être souple, rapide, efficace. La suite Adobe (Illustrator, Photoshop) et la suite Corel Draw (Draw et Photo Paint) sont des « musts ». Le rendu final de la création, sous forme de papier, nécessite également l’application de divers paramètres. L’imprimante et ses encres, bien sûr, mais aussi les formats d’exportation des fichiers, liés à la qualité transmise – rôle de la compression – et à son éventuelle exploitation par la filière graphique tels qu’imprimerie, journaux, etc. Le choix des papiers, lui-même, autorise des variations de rendus extrêmes, à partir desquels toutes les extrapolations plastiques ultérieures sont à nouveau possibles. Cette variable relève elle aussi de l’expression artistique.

INFOGRAPHIE D’ART?

Pourquoi accoller ce mot « ART » à un mot déjà très précis en soi ? Parce que seul cet assemblage permet de bien cerner l’orientation d’un cours qui, en tant qu’option à 2 heures, peut répondre à une double opportunité ; celle de remplir une fonction urgente d’information et de formation, en veillant à combler un vide réel dans le cursus traditionnel humaniste. Comprendre les enjeux développés par le monde des images tel qu’il nous est imposé par la publicité et les médias (en ce compris les liens au politique, aux institutions, les rapports aux philosophies de vie, aux orientations sociales, etc.) et ce de l’intérieur, par la compréhension des modes, techniques et procédés mis en place pour séduire, influencer, orienter. Celle de se greffer, complément de 2 heures à une option d’Art à 4 heures – bien ancrée dans les Ecoles européennes – , en lui conférant des moyens modernes et une méthode ad hoc. Le tout destiné à mieux investir, avec plus de liberté, la systémique de création visuelle (associant domaines du ressenti et expression personnelle). Cette association de cours renforce opportunément les liens vivaces, pertinents, intergénérationnels, unissant l’Homme à son vécu.
INFOGRAPH’ART ?

Le concept développé sous le vocable « INFOGRAPH’ART » – issu de l’intégration des deux mots de l’intitulé en un seul – offre, visuellement, un plus de dynamisme (et donc colle mieux à notre époque) ainsi qu’un plus de ludisme. Tel quel, ce nouveau mot s’offre et s’ouvre à une réflexion qui sera la conjonction entre d’une part, le sérieux qui connoté la recherche plastique assistée par ordinateur, et, d’autre part, l’amusement lié aux interventions de pure intuition d’une créativité multiple, débridée, détachée des lourdes, longues et fastidieuses expérimentations. Le résultat des opérations menées se constate, se rectifie, s’applique tout en autorisant les remords, les doutes, les reprises. Et cela dans un temps domestiqué, plus enclin à la diplomatie qu’au rejet des moindres velléités. Les sauvegardes successives autorisent également un étalonnage, un archivage des recherches, ce qui entraîne un regard sur les étapes passées plus constructif que jamais.

", "UN CONSTAT

Ce cours, mis en place en 2003-2004 à l’EEB II (Woluwe), s’est développé depuis et a trouvé sa place particulière auprès des étudiants ainsi que dans la structure des cours existants. Il a fonction de courroie de transmission entre les cours d’Art, plus traditionnels, et les cours de TIC, plus orientés vers l’informatique pure. Cette spécificité choisie ouvre un dialogue nécessaire et fécond entre les mondes de la création et ceux de la communication, d’aujourd’hui comme de demain.

Les possibilités offertes par ce type de cours ouvrent aux étudiants créatifs des horizons multiples.
Les liens avec la vie productive, extérieure, telle que vécue dans les entreprises vouée tant à la création qu’à la communication, sont effectifs : la base pratique recherchée puise ses racines dans l’imagination et l’inventivité, toutes deux renforcées par une connaissance des modes de production des images et des arcanes de lecture produites par celles-ci.
Décoration de bus d’une société de transport en commun (S.T.I.B)

Variations à partir d’une base hexagonale identique imposée

Réalisation d’un puzzle
Décoration de bus d'une société de transport en commun (S.T.I.B)

Réalisation d'un puzzle

Variations à partir d'une base hexagonale identique imposée
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The EU Lisbon strategies underlined the importance of objectives for the renovation of education systems and education through new technology and long term learning. In the first part of this article, we try to highlight the importance of e-learning training for teachers, the benefits offered by a training model in e-learning and the implications it has on constant qualitative improvement of education. In the second part, we briefly analyze the training needs of teachers in European schools and ways in which to encourage and enhance reflection on possible future developments.

Die Strategien, die im Lissabon-Vertrag vereinbart wurden, betonen die Wichtigkeit einer Erneuerung des Lehr- und Lernsystems auf der Basis der neuen Technologien genauso wie das lebenslange Lernen. Im ersten Teil des Artikels wird versucht, zum einen die Bedeutung der Fort- und Weiterbildung „auf Distanz“ für Lehrkräfte zu verdeutlichen, zum anderen die Vorteile eines solchen e-learning-Modells aufzuzeigen und schließlich die dadurch entstehenden Qualitätsverbesserungen der Lernangebote anzuführen. Im zweiten Teil des Artikels wird mit Blick auf die Notwendigkeit der Fort- und Weiterbildung der Lehrkräfte Europäischer Schule eine kurze Analyse vorgenommen. Darüber hinaus werden mögliche Entwicklungen in der Zukunft aufgezeigt.

Les stratégies européennes de Lisbonne ont souligné l’importance des objectifs pour le renouvellement des systèmes de l’éducation et de l’instruction par le biais des nouvelles technologies et d’une formation tout au long de la vie. Dans la première partie de cet article nous essayons de mettre en évidence l’importance d’une formation à distance pour les enseignants, les avantages offerts par un modèle de formation en modalité e-learning et les implications qui engendrent une constante amélioration qualitative de l’offre éducative. Dans la deuxième partie, nous analysons brièvement les nécessités formatives des enseignants des écoles européennes et invitons à une réflexion sur les possibles développements futurs.
La politique européenne relative à l'éducation reconnaît un rôle extrêmement important à la formation « pour le développement et la réussite de la société de la connaissance et de l'économie actuelles » 
L'élément principal des objectifs des programmes étant celui du développement des sociétés et des cultures des États membres, l'Union européenne propose comme but de créer une réelle coopération entre les pays à travers les points cardinaux qui caractérisent sa politique éducative : société européenne comme société de la connaissance où le savoir est construit en commun et à partir des expériences déjà acquises, mais encore tout au long de la vie.

Les Ecoles européennes ont commencé, pas après pas, à attribuer plus d'importance à la formation continue des enseignants grâce à l'application du concept de lifelong learning dans le domaine de la formation pédagogique et didactique. Ce concept assume davantage d'importance face aux besoins en expansion des professionnels de l'éducation qui opèrent dans une ère de l'information de plus en plus exigeante, spécialisée, élargie. Une réelle formation continue, néanmoins, ne pourra jamais trouver sa réalisation complète sans prévoir aussi des modalités parmi les plus importantes de cette époque et qui ont apporté des changements profonds jusqu'à muter radicalement le concept même de l'éducation: les technologies de l'information et de la communication et la formation à distance (e-learning).

Comment une formation on-line pourrait contribuer au développement des compétences demandées aux enseignants, et comment leur permettre de construire leurs propres compétences ? Une formation on-line représente désormais une valeur ajoutée à son propre portfolio individuel dans la mesure où chaque enseignant peut expérimenter des nouvelles méthodologies et stratégies d'apprentissage à transférer directement dans ses pratiques de classe. Il est universellement reconnu, d'ailleurs, que la formation on-line encourage et favorise la diffusion de pratiques et d'expériences liées à des méthodologies de cooperative and collaborative learning, et que, en tant que « continue », devient au fur et à mesure un processus de formation cyclique sans arrêt.

Mais qu'est-ce que c'est l’e-learning ? Et pourquoi une formation à distance pour les enseignants des Ecoles européennes? Comment « bâtir » une formation d'un tel genre auprès de nos écoles ?

Avec le mot anglais e-learning, on indique généralement un usage des technologies, des outils multimédia et de l’Internet pour améliorer la qualité de l’apprentissage, qui se réalise, entre autre, à travers un accès facile aux ressources et aux services. Mais le mot e-learning contient sans doute des significations plus amples qui se rapprochent de celles de « culture digitale », dans la mesure où l’on assimile celles-ci aux concepts liés à la formation par le biais du net, continue et intégrée, avec la possibilité de personnaliser les parcours formatifs et les rythmes d’apprentissage, de rechercher et de partager des contenus

et des connaissances désormais accrues mais instables et incertaines.

La diffusion de l’Internet et des instruments liés au net a contribué à donner un nouvel élan à la formation, notamment dans le domaine scolaire. Aujourd’hui, nous assistons déjà à une phase très avancée de formation à distance, une phase que les experts n’hésitent pas à définir comme « troisième génération », après celle à distance par correspondance et celle multimédiale des années 80 et 90 (CD-rom et premiers sites web). Le grand changement qui a eu lieu par rapport aux deux précédents types de formation concerne au moins deux dimensions :

- la dimension technologique, qui permet d’apprendre à travers le net et à travers un réseau en communication constante et continue,
- la dimension sociale, qui met en communication des personnes qui ont des intérêts communs et qui partagent leurs connaissances (d’où la «communication») en créant un nouveau réseau de relations et de collaboration.

Nous pouvons affirmer que cette petite (ou grande ?) révolution culturelle non seulement met à zéro les distances géographiques entre les apprenants, mais – ce qui est d’ailleurs un des éléments les plus importants – anéantit définitivement les « distances sociales » grâce à la «socialisation» du processus d’apprentissage, qui se réalise dans les connaissances, la participation, la coopération, la recherche et l’expérimentation partagées. Si jadis la formation (et plus généralement l’apprentissage) était un processus qui se tenait dans une relation d’UN (celui qui connaît et qui transfère les connaissances) vers LES AUTRES (les élèves, les apprenants, les auditeurs, bref le modèle classique de lectio), avec les transformations de ces temps, ce processus se configure comme un échange continu d’informations entre les uns et les autres pour aboutir à une construction commune des savoirs. Au niveau des enseignants et des étudiants le parallélisme est intuitif : le centre et l’attention sont désormais déplacés vers l’apprenant qui détient un rôle actif dans la construction de son propre savoir.

Le concept d’e-learning change la façon de concevoir et d’organiser les contenus formatifs : si dans le modèle classique de formation in praesentia le matériel de formation était constitué uniquement par le savoir du formateur et par les instruments que celui-ci pouvait et voulait transmettre ou mettre à disposition, et si dans le modèle de formation de «deuxième génération» ces instruments et ce matériel étaient encore fixes et rigides, dans le nouveau modèle de formation à distance en e-learning les learning objects peuvent être structurés d’une façon ouverte avec la possibilité de les réviser et de les mettre à jour constamment.

Les avantages d’une formation en e-learning ne se limitent pas uniquement à ces changements que nous avons essayé ici d’illustrer, mais concernent aussi d’autres aspects :

- indépendance par rapport au temps : chacun peut accéder à une formation on-line indépendamment du jour, de l’heure et de la période;
- indépendance par rapport à l’espace : comme on l’a déjà mis en évidence, les barrières géographiques sont neutralisées;
indépendance par rapport aux styles cognitifs : chaque apprenant peut conformer son propre style sur la base de ses attitudes, de ses attentes et de ses rythmes;

indépendance par rapport à l’environnement : les intervenants dans un processus de formation on-line se retrouvent dans le même environnement « virtuel » qui remet à plat les différences dues aux conditionnements culturels et liés à une localité géographique spécifique;

indépendance par rapport au contexte formatif : dans une formation on-line un autre élément important et qui a été récupéré est représenté par les occasions de formation non formelle, à savoir l’apprentissage spontané et libre, illimité, qui va s’ajouter et s’intégrer avec les acquis d’une formation plus formelle;

indépendance par rapport aux instruments : dans une formation in praesentia il est nécessaire de créer, modeler et disposer l’espace et les outils de la façon la plus convenable et la plus pratique pour la bonne réussite de l’événement formatif. Dans le modèle on-line tout est « prêt à l’usage » et déjà disposé sur notre « bureau ». Il suffit d’apprendre comment faire fonctionner ce dont nous avons besoin;

indépendance par rapport à la structure : la formation in praesentia doit obligatoirement suivre des étapes et des parcours obligés, dans le cadre d’un système qui ne peut plus changer une fois mis en marche. La formation on-line peut être restructurée, remodelée, enrichie, variée, adaptée sans cesse par rapport aux différentes exigences des divers acteurs de la formation même.

Le dernier aspect – et parfois un des plus importants – que nous pouvons invoquer parmi les avantages de la formation en e-learning concerne les réductions budgétaires et économiques. Un type de formation faite à distance peut diminuer sensiblement les coûts et les dépenses liés à la complexe organisation in praesentia (les lieux, les instruments, les frais des formateurs, les photocopies… mais aussi le lunch et les cafés, etc.), sauf, évidemment, les investissements initiaux dans les machines (PC, tableaux interactifs, etc.).

Dans le panorama européen relatif à la formation des enseignants, les expériences mises en place en modalité e-learning dans les différents pays sont nombreuses et - dans certains cas - de qualité très élevée. Nos Ecoles européennes sont appelées elles aussi à faire face à ces changements importants, si l’on souhaite donner à tous ceux qui y opèrent une formation complète et généralisée. C’est pourquoi l’Ecole de Bruxelles 2 a désormais mis en place une coopération culturelle, formative et scientifique avec la Vrije Universiteit Brussel (VUB), une des plus prestigieuses institutions académiques du pays, qui se concrétise dans l’offre de formation in praesentia pour cette année scolaire et de formation aussi on-line dans les années scolaires futures. Cette collaboration a vu
le jour après des rencontres formelles qui aboutiront prochainement à un protocole commun dont le but principal est celui de garantir une formation adéquate et de qualité à tous les enseignants de l’école, mais aussi de contribuer à la recherche dans le domaine de la linguistique et des conditionnements dans un milieu multilingue et multiculturel. Dans les prochaines années, la VUB élargira son offre grâce à la mise en place d’une formation post-graduat spécialement conçue pour les enseignants des Ecoles européennes. Cette formation sera probablement structurée – dans un premier temps – en modalité blended, avec des séances de formation in praesentia et online, et ensuite en modalité on-line dans le cas où des autres Ecoles européennes décideraient d’adhérer à ce type de projet.

En même temps, il serait hautement souhaitable que, dans le système de nos écoles, l’importance attribuée à la formation – et notamment à la formation on-line - assume une physionomie plus définie. Bien que l’on ait déjà assuré des occasions de formation pour tous les enseignants du cycle primaire et maternel, nous partageons l’idée que l’on doit travailler encore plus pour élargir davantage ces opportunités à tous et selon les formes que nous avons essayé d’illustrer ici. Le futur des Ecoles européennes doit forcément passer aussi par les investissements sur la formation des enseignants. Afin que ce propos puisse se concrétiser, il faut projeter et organiser un système nouveau de centralisation de la gestion de la formation continue, à savoir :

- l’institutionnalisation de ce concept auprès du Bureau du Secrétaire général
- l’étude d’un projet de formation commun à toutes les écoles, qui soit qualifiant et réellement conforme aux exigences des enseignants
- l’étude de formes de coopération et collaborations culturelles et formatives avec les Institutions académiques des pays où les écoles sont localisées
- l’institution d’une plateforme e-learning unique pour toutes les écoles spécialement conçue pour la formation on-line
- la création de parcours différenciés de formation à travers la plateforme e-learning, au niveau des sujets, mais aussi des intérêts professionnels et formatifs de chacun
- le recours à un groupe de responsables de la formation (enseignants, inspecteurs, expert ICT, etc.) qui sachent gérer tous les aspects liés à cet important défi

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Le jour après des rencontres formelles qui aboutiront prochainement à un protocole commun dont le but principal est celui de garantir une formation adéquate et de qualité à tous les enseignants de l'école, mais aussi de contribuer à la recherche dans le domaine de la linguistique et des conditionnements dans un milieu multilingue et multiculturel. Dans les prochaines années, la VUB élargira son offre grâce à la mise en place d'une formation post-graduat spécialement conçue pour les enseignants des Ecoles européennes. Cette formation sera probablement structurée – dans un premier temps – en modalité blended, avec des séances de formation in praesentia et online, et ensuite en modalité online dans le cas où des autres Ecoles européennes décideraient d'adhérer à ce type de projet. En même temps, il serait hautement souhaitable que, dans le système de nos écoles, l'importance attribuée à la formation – et notamment à la formation on-line – assume une physionomie plus définie. Bien que l'on ait déjà assuré des occasions de formation pour tous les enseignants du cycle primaire et maternel, nous partageons l'idée que l'on doit travailler encore plus pour élargir davantage ces opportunités à tous et selon les formes que nous avons essayé d'illustrer ici. Le futur des Ecoles européennes doit forcément passer aussi par les investissements sur la formation des enseignants. Afin que ce propos puisse se concrétiser, il faut projeter et organiser un système nouveau de centralisation de la gestion de la formation continue, à savoir : l'institutionnalisation de ce concept auprès du Bureau du Secrétaire général, l'étude d'un projet de formation commun à toutes les écoles, qui soit qualifiant et réellement conforme aux exigences des enseignants, l'étude de formes de coopération et collaborations culturelles et formatives avec les Institutions académiques des pays où les écoles sont localisées, l'institution d'une plateforme e-learning unique pour toutes les écoles spécialement conçue pour la formation on-line, la création de parcours différenciés de formation à travers la plateforme e-learning, au niveau des sujets, mais aussi des intérêts professionnels et formatifs de chacun, le recours à un groupe de responsables de la formation (enseignants, inspecteurs, expert ICT, etc.) qui sachent gérer tous les aspects liés à cet important défi.
John Evertsson is National inspector of the secondary cycle of the European schools and Director of Education at the National Agency for Education in Sweden.

Introducing and developing computer-assisted teaching and learning in the European schools should be one of the major objectives in the years to come. In a blended learning environment such as ours it is essential to cater for and develop both traditional and new ways of teaching and learning. Digital competence is a key element of lifelong learning. The objective set for Distance Education was to continue the development and implementation of computer-assisted communication in the European Schools. Most of all, all pupils should be trained in criticism of all sorts of e-learning sources on Internet.


Introduire et développer un enseignement assisté par ordinateur dans les Écoles européennes devrait être un des objectifs principaux des années à venir. Dans un environnement d'études mixtes comme le nôtre, il est essentiel de pourvoir à et de développer aussi bien des approches traditionnelles que des approches nouvelles de l’enseignement et de l’apprentissage. Une des compétences principales pour la formation tout au long de la vie est la compétence numérique. Les objectifs définis pour l'éducation à distance étaient de poursuivre le développement et l'introduction de la communication assistée par ordinateur dans les Écoles européennes. Avant tout, tous les élèves devraient être formés à la critique de toutes sortes de sources d’apprentissage sur l’Internet.
The objectives set for the Distance Education working group were to develop and implement computer-assisted teaching and learning in the European Schools. This approach should remain one of the major objectives in the years to come. One of the key competences for lifelong learning is digital literacy. The Learning Gateway and eLearning competitions are a means to enhance the use of computer-assisted teaching and learning in the European Schools. All pupils should be trained in criticism of all sorts of e-learning sources on Internet. Teachers’ self-initiated development could be based on in-service distance training in their national systems.

INTRODUCTION

According to the Lisbon Strategy, Europe is supposed to become by 2010 ‘the most competitive and most dynamic knowledge-based economy in the world.’ This implies that today’s learners have to develop language skills and intercultural awareness, digital literacy, and an understanding of new online discourse communities and the new kinds of social practices they represent. Pedagogy based on learner-centric, personalised, social-constructivist approaches, supported by tools readily available online, can help European schools to create an active learning environment.

A holistic approach to distance and e-learning requires a deep understanding of computer-assisted learning, looking way beyond the mere aspects of technology and management. A well-understood pedagogic approach is instrumental in restructuring the educational enterprise and exploiting new development scenarios.

Learning is becoming an increasingly personalised experience. Students - and all of us - can learn practically everywhere and it is more and more the students who discover ways to learn. The new approach helps to understand and better support the inclusion and access aspects of ICT and learning. We have to understand and exploit different learning styles and methods which may help to increase learning efficiency and implement new learning strategies. All of us are communicating more than ever, while being more physically remote from each other than ever before.

European School teachers need to account for the fact that students, more or less irrespective of language section or country of origin, are now of the “digital generation” who live in a rich technology-enhanced environment and expect their learning environment to integrate with this. It is not enough simply to offer a common teaching product or adopt a ‘one-size-fits-all’ approach. The consensus view from pedagogic researchers points towards a model of stimulating, activity-based learning, which recognizes the importance of local contextualization, induction and orientation, and individual personalization. For the European schools this implies developing a new and more contemporarily relevant framework appropriate to the primary and secondary learning of today. Such ideas have already been launched by one of our working groups:

“Differentiated instruction applies an approach to teaching and learning so that students have multiple options for taking in information and making sense of ideas. The model of differentiated instruction requires teachers to be flexible in their approach to teaching, adjusting the curriculum and
Recommendations of the European Parliament and the Council of 18 December 2006 on key competences for lifelong learning (June 19, 2008) define eight key competences: communication in the mother tongue, communication in a foreign language, mathematical literacy, science and technology, digital competences, learning to learn, inter-personal, inter-cultural and civic competences and a spirit of enterprise and culture. In the context of this document we should focus on the fourth key competence, i.e. digital competences.

"Digital competence requires a sound understanding and knowledge of the nature, role and opportunities of IST, Information Society Technology, in everyday contexts - in personal and social life as well as at work. This includes main computer applications such as word processing, spreadsheets, databases, information storage and management, and an understanding of the opportunities and potential risks of the Internet and communication via electronic media (e-mail, network tools) for work, leisure, information sharing and collaborative networking, learning and research."
Skills needed include the ability to search, collect and process information and use it in a critical and systematic way, assessing relevance and distinguishing the real from the virtual while recognising the links. Pupils in the European schools should be skilled in using tools to produce, present and understand complex information, and possess the ability to access, search and use internet-based services. Pupils should also be able use IST to support critical thinking, creativity and innovation.” (L 394/16, Official Journal of the European Union, 30.12.2006)

BACKGROUND TO THE DISTANCE LEARNING GROUP AND ITS OBJECTIVES

There are three working groups linked to the deployment of ICT in the European Schools:

- The Primary ICT group which focuses on advising primary teachers and Group Inspections on how to integrate ICT into their teaching;
- the ICT Steering Group which looks at budgets, the ICT Plan and future trends and issues and;
- the Distance Learning Working group which looks at eLearning and runs the eLearning Competition.

Distance Education was introduced for the first time during the 2001/2002 school year at the European School, Bergen. This pilot project paved the way for a new method of teaching and learning in the European Schools. Since 2003 the objectives for the Distance learning working group have been

- To develop and implement computer mediated communication, CMC, and thus to introduce Distance Education in the European school system;
- To tailor for the Distance Education project in-service training of quality, that gives the teachers university credits for the courses they have completed;
- To evaluate the pedagogical and technical aspects of the teaching and learning aspects.

(Ref.: 2003-D-302-en-3)
As a partner in the iClass project, it was necessary for the project team to invest in a management tool to be used during the project that could also fit the European schools in the future. Learning Gateway, which is a collaborative portal for sharing all kind of digital files and supporting complex rights management according to users’ identities, was chosen as a tool that could facilitate and share instructional best practices, collect student assessment data and deploy instructional resources quickly and efficiently. This tool has built-in collaboration capabilities that facilitate communication with students, parents and other European schools. All participants can have at anytime and anywhere access to information presented on this site. The Learning Gateway can give students and parents the chance to participate directly in the learning process by enabling them to reach resources and lesson plans as well as opening the way for parental involvement.

The Learning Gateway is still far from reaching its optimal possibilities, even though the platform is very stable and has been warmly welcomed in the European school community. It has already a huge number of users and hosts thousands of documents. But in some schools teachers still have difficulties entering it and using it as a pedagogical tool.

In the primary schools it has been used to share the “Carnet scolaire” and to open up the school to parents. Regarding the secondary schools, the Baccalaureate Unit, in close collaboration with secondary school teachers, can share their educational resources with all their colleagues in all 14 European Schools. Each teacher can also share a private class website that will be visible only to the students enrolled in his/her class. As the platform is Web-based, it is accessible from any computer connected to the Internet.

The objectives set for Distance Education, a term encompassing both distance teaching and learning, for the 2004-2005 school year and on, was to continue the development and implementation of computer-assisted communication in the European Schools. High-quality in-service training for the Distance Learning projects needs to continue, as does evaluation of the technical and pedagogical aspects of distance teaching and learning. (Ref: 2004-D-372-en-4).

By their presence in the surrounding digital world, the European Schools have become a preferred test-bed for new technologies by many of the major providers of soft- and hardware. The European schools now find themselves at the ‘cutting edge’ of ICT development in Europe and beyond. It is still the case, however, that schools are not exploiting the technologies and applications which they already have available to their full potential. This is the challenge which Directors and ICT technicians face in each of the schools.

Classroom Management Platforms (e.g. Class Server, Studywiz) do allow a certain level of differentiation and personalization of a learning path for pupils. Sometimes, students can be actively involved in their own learning process (iClass project) although most systems on the market have not reached that level of ‘intelligence’ yet. Generally, teachers can better deliver and organize traditional learning content to students using ICT.
inspectors, has used the platform as a distribution tool and working place for all the subjects to be prepared for the baccalaureate examination. This has eliminated a lot of work entailed in copying and sending documents by ordinary postal services.

During the last few years several training sessions have been undertaken and many working groups distribute their work through the Learning Gateway. There is still a need for regular in-service training for new teachers, for example, or for those still not accustomed to a digital teaching environment.

eLEARNING COMPETITIONS 2007, 2008 AND 2009

The eLearning competition was launched for the first time in September 2007. The objective was to stimulate and motivate both pupils and teachers in using and producing digital learning and teaching objects. A huge number of contributions, put forward by pupils and teachers, have been evaluated by the members of Distance Learning Working Group. The digital works are assessed according to 6 criteria: pedagogic usability, technical implementation, applicability to different groups of learner, interactive and experiential characteristics and creativity and novelty.

The jury has been impressed by the high standard of the contributions from all participants over the years. All the digital and learning objects from the competitions are now presented on Learning Gateway to be used by the whole school community. The Distance Learning Working Group has noted the very positive outcome of the eLearning Competition and its impact on the promotion and development of the use of computers as instruments for learning and teaching.

NEW CHALLENGES

In the year 2007 a new video-conferencing tool came out: Adobe Connect. This tool includes fourteen meeting rooms to be shared by the schools and one meeting room for the central bureau. This software makes it possible to hold meetings at a distance. All meetings can be recorded for later playback through a simple URL. Participants in meetings can share applications and easily interact with the keyboard, audio or video. Adobe Connect can be used both for teaching and administrative purposes.
In terms of training in ICT, it is clear that with the growing use of digital soft- and hardware in classrooms and administration, the need for digital competences is constantly increasing. It is also apparent that there is a wide range of proficiency in the use of ICT amongst administrative and teaching staff. As a consequence, differentiated training is needed. At one end of the spectrum, some teachers remain fearful or reluctant to use potentially timesaving ICT programs. It is essential that the school management has strategic plans for ICT in-service training combined with an ICT policy vision for the school.

In the document 2008-D-411-en-2, the general framework and organisation of in-service-training in the secondary cycle of the European schools, self-initiated professional development and distance learning is identified as an area for improvement.

STAFF AND IN-SERVICE TRAINING

Distance learning, based on these learning platforms combined with video-conferencing technology, will become a normal delivery method for courses in our European School system. A number of subjects have already experienced this way of teaching. At the same time, hotspots, wireless network access points, have been installed in some of the staff rooms of the European schools which make it possible to surf the internet and access personal web mail in order to facilitate the daily use of ICT in the teachers’ planning.

The European Schools have moved to a new classroom product called ‘Studywiz’ which is a multilingual, Australian product which has enormous potential in the teaching area. Its applications can link the classroom with the home environment and will have an impact on how teachers and students collaborate and communicate. Studywiz can be seen as a plug-in for our Learning Gateway alongside other teacher authoring and content assembly tools.

Learning Gateway also acts as a teaching and learning resource repository where teachers and students can create, assemble and find resources and learning objects.

“Professional development does not take place only in an isolated moment in time; it is a continuous process. There are many ways in which the professional development of teachers can be fostered in addition to the in-service training organised by the European schools system. It is very important that school management and inspectors project a positive attitude and encourage teachers who are interested in undertaking further study.

Advances in computer technologies and increased availability of computers in schools and homes have facilitated distance learning. The resources and methods used for independent study and self-directed learning have been developed quickly and they form today a wide spectrum of different networks and digital databases. Distance learning has been shown to be an effective way to support in-service professional development.
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The European schools’ own portal, the Learning Gateway, can be used as a tool for an exchange of teaching methods and materials among teachers and thus for professional development. Inspectors are also advised to inform teachers about the possibilities for distance in-service training in their national systems”.

In-service distance training offers a number of advantages. It is convenient and flexible for the teachers who can choose from a wide range of courses. The training can be done outside teaching time without the need of substitution in the classroom, and the teachers working in a European school can remain in touch with national school systems. It is important that European schools develop closer cooperation with national and international centres involved in teacher training programs. It is also very important that inspectors encourage and facilitate in-service training opportunities for teachers and provide accessible professional development that meets their teachers’ needs and aspirations.

The local and the central budget for in-service training should be used for self-initiated or imposed professional development by means of distance learning.
The intensive introduction of contemporary technologies into classes brings the realisation that ICT can make a huge contribution to the creation of higher-quality lessons. The use of contemporary technologies must be closely connected to new methods and approaches, most of all with goals and lesson contents of different subjects, i.e. developing different abilities; otherwise we could risk the trivialization of lessons. Furthermore, effective development of various abilities cannot be imagined merely in the frame of one school subject. The improvement should cover and connect various school subjects.

If the European Schools want pupils to acquire permanent knowledge and develop various skills in both high quality and quantity, an adjusted and systematic use of ICT in different teaching and learning contexts is vital for every single pupil. Most of all, all pupils should be trained in the critical assessment of all types of e-learning sources on Internet. The pupils need to establish a critical attitude to knowledge and skills which are the basis for quality living and lifelong learning. Moreover, cooperation among pupils from different study groups in different e-learning environments should be encouraged. Pupils can cooperate in different study groups on projects, on designing joint documents, reading news, surfing the Internet, writing blogs and wikis, using calendars, filling in questionnaires, receiving and sending e-mails, chatting, sending text messages, and taking part in virtual classrooms or other forms of e-learning.

Supposing that pupils are trained in the use of hardware (computers, printers, digital cameras, web-cameras, the internet, beamers and so forth) and professional software (word processors, graphs, tables etc.) it is impossible to imagine any high quality lessons at either preschool, primary or secondary levels in the future without the planned and systematic use of didactical computer programmes (e-dictionaries and spelling, spell checkers, grammar checkers, compilers, speech synthesizers etc.), the use of the world wide web (browsers, search engines, internet libraries, internet dictionaries, word corpora etc.), e-mail, forums, blogs and chat rooms and e-learning technologies (virtual classrooms and e-learning environments).

Various e-learning environments, where pupils can find organizational data, learning materials hyper connection, e-mail, forums, chat rooms and blogs, and where pupils can take part in video conferences, audio contact using Skype, for instance, are nowadays used mostly for distance learning. In the near future, widespread use of the above elements of ICT can be expected in normal, classroom-based lessons, as well as in combinations of normal and distance teaching and learning. It is impossible to ignore the accessibility of data/information, the speed of information and material transfer, or opportunities for exchanges of views and ideas. Most of all the possibilities for cooperative learning and problem solving approaches to different learning projects in school, at local and global levels have, to be foreseen. All these are advantages that cannot be overlooked in lessons that are focused on pupils’ achievements.

The Distance Learning Working Group hopes that this report has given you some useful information on the state of ICT in the European Schools and more generally in European Education.
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