

Integrating ICT and multicultural aspects within a classroom: the SAIL project

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The implementation of technology in the primary school sector during the last few years has resulted in issues being raised relating to teachers' knowledge of technology and their propensities for incorporating ICT into an already packed curriculum. Teachers in Malta were faced with challenges to their various teaching professional knowledge and to their prior and developing understanding of the conceptual and procedural aspects of technology. SAIL provided opportunities for teachers to develop their understandings of minorities in Europe within a community of teachers, while at the same time promoting technology both as a process and a product.

Introduction

Despite the presence of a large number of computers within our schools, advanced technologies have had a limited impact on school reform. Changes within schools have been limited to isolated instances, rather than uniform practice as has happened in other fields, for example in medicine and entertainment. This point was noted by the European Commission in its recent Eurydice report, which stated that 'Improving the quality of education thanks to multimedia and internet technology is one of the priorities of European cooperation. All schools, if not all classes should be highly computerized, all teachers should be able to use technology to enhance their working methods and all young people should be able to broaden their horizons by using Information and Communication Technology (ICT) comfortably though with the necessary critical perspective', (Viviane Reading, European Commissioner for Education and Culture, 2004, p. 1).

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When ICT was introduced in schools, it was thought that it would revolutionize the manner of teaching, yet substantial progress is still required to actually integrate ICT into classroom practice. According to Wenger and Syneder, Teachers do not as a matter of course

acquire skills in the use of ICT educational purposes during their initial training, even though various in-service training programmes have been introduced. Therefore, a recent focus has been on nurturing learning communities. Focusing on something in common, members of learning communities share knowledge and experience. Their learning occurs “through interactions and relationships in networks of others who are experiencing and working on the same challenges and tasks ... They are learning from other people, and consciously or unconsciously teach other members, through a matrix of relationships and social exchanges. (Wenger & Syneder, 2000, p.1)

The project outlined in this paper set out to form a community of teachers who would examine materials on European Minorities and integrate ICT practice within their classrooms. SAIL (Specialized Animated Interactive Learning) is a Minerva Project (<http://www.studentlearningcentre.org>). The philosophy behind SAIL has two components: the development of a software package as a tool to attain specific pedagogical objectives, including cooperative learning (both as a teacher-training objective and the method that teachers consequently use in their classrooms) and secondly the use of a software package in class which would expose the teacher to the opportunity of attaining new skills and teaching methods in learning about diversity.

Methods and selection

Selection of participants for the pilot programme

Our research focused on five primary school teachers in Malta who had shown a willingness to allow researchers into their classrooms and to have their classes video-taped. These were two church-based schools (boys), one private school (mixed gender) and two state schools (mixed gender). Four of the teachers were females and one was male. They came from different backgrounds and taught all subjects, as tends to be the case in Maltese schools for children of primary school age.

The teachers had not previously been trained in collaborative learning methods, and therefore during the initial meetings we focused on the many aspects of building a collaborative learning group. While they had various experiences in utilizing ICT, their training varied according to which school they were teaching in.

Available hardware

The teacher is literally surrounded by technology in Maltese state primary schools – there are three to four desktop computers in every classroom, and these are networked to a single printer. A large monitor, connected to a video recorder, is available for whole-class displays. Every primary school teacher has a laptop/notebook computer that can be connected to the monitor set-up. All this is networked

and Internet access is available on all computers in the classroom. A school server connects all the classrooms.

In the church-based schools and private schools, on the other hand, teachers still work with a system of computer labs and a computer teacher. However, some schools have recently realized that they need to integrate computer work into the curriculum, rather than treat computer work as a separate subject, and some schools now make use of a system of computers placed on a trolley.

The development of SAIL

Before SAIL could be introduced to teachers, project materials needed to be compiled. It was decided that the first minority community to be addressed would be the Roma. Often, Roma are stereotyped as either romantic characters (e.g. Esmeralda) or as travellers in Malta. First, factual information for the children and their teachers was collected. This information included sections on history, culture and poetry (materials were collected via the web and through our Dutch partners, the Haagse Hogeschool in the Hague). These materials were subsequently piloted in five schools, thus enabling us to check for inaccuracies and stereotypical portrayals.

Freeware was designed relating to this first minority community, enabling the teachers who volunteered to participate in the project to try out ICT. Initially, some of the teachers mentioned that they had some hesitations about how and when they were going to integrate SAIL within their curriculum and practice. They expressed that they felt they were being asked to integrate yet another theme within an already full curriculum. This seemed like an insurmountable barrier to some. Therefore, it was decided that SAIL would be introduced within their project-based activities in class, for example, craft work, such as designing a Roma caravan.

This was the first challenge for teachers; the second related to practice. It was through facing these challenges that the teachers experienced personal and professional growth. The teachers who participated in the pilot activities of this project were willing to take risks and engage in a process of change that could only be a result of their confidence, enthusiasm and motivation.

While taking part in the various activities, teachers were simultaneously contributing to research concerned with the investigation and implementation of effective pedagogy using ICT. This was another new experience for the teachers since by means of this work they engaged in reflection and the sharing of their own experience with other teachers from other schools and therefore from different backgrounds and situations. The following elements were introduced by means of this project:

- (a) the introduction of new multicultural materials;
- (b) the utilization of ICT as a learning tool; and
- (c) participation in a research activity.

Authentic texts and situations played key roles in enhancing positive attitudes towards learning. Therefore materials were developed in the project that were already prepared for classroom project work.

The process

Finding common ground among a Roma community and the communities of our participating students was one of the achievements of the SAIL project: 'In order to reach common ground, the experiences of the children, their questions to the world, their moral values and their social norms must be openly discussed' (Schellekens, 2001, p. 341). By finding common ground between the two communities, students were able to understand the implications of belonging to a European Cultural minority such as the Roma, even though they had never met a Roma. After all, what distinguishes the professional teacher is his/her capability to apply abstract knowledge to concrete situations, in this instance bridging the gap between the unknown community and the predominant one represented in his/her classroom.

The students utilized abstract knowledge to understand what it meant to be a Roma. Usually one learns how to understand the meaning of a 'community' as one engages, though frequently superficially, in social relations with others. It was very interesting to observe how the students engaged with a virtual Roma community, despite the fact that they had no previous knowledge of such a community. One of the ways that this was achieved successfully was through the creation of a fictional character called 'Muscha', a 9- to 10-year-old child. As in the project 'This is Me' (Schellekens, 2001), a stimulating educational atmosphere was created and prejudices and inflexible images concerning ethnic groups were challenged, thanks to the sensitivity of the school and the teachers concerned.

The creation of Muscha, who was the same age as the pupils, appeared to transform any social stigmas that the children may have felt. Issues were addressed and although differences were noted, commonalities between the communities were highlighted through the cooperative tasks that took place in the classroom.

Classroom practice

The teachers designed five lessons around the theme of Roma, based on cooperative learning methodology, and using the materials available to them on the website where the freeware package could be accessed (<http://www.brimba.org>). They then integrated the use of ICT within their planned project work.

During their participation, teachers developed ideas and concrete lesson plans for their classrooms, making use of the materials. They met regularly and discussed the approach that they were adopting, the problems they were encountering and how these could be overcome. They constructed a community of learning, in which they were trained how to integrate ICT into learning.

Teachers cannot function in a totally idiosyncratic fashion. What they do and how they account for it has to make sense both in the context of teaching practice and in the societal context in which they function. They are ultimately the experts in their classrooms. Therefore, they designed five lessons relating to the theme of Roma as their own end product, though meeting with others to exchange ideas and help each

other along. The classroom materials available on the web were divided into the following categories:

- (a) teacher materials – lesson plan outlines, suggested teaching ideas;
- (b) materials for 10- to 12-year-olds;
- (c) materials for 8- to 10-year-olds.

Data collection

Data collection occurred in the following manner:

Initial phase data collection

- (1) Free-writing activity, including opinions on teaching.
- (2) A baseline questionnaire on knowledge of ICT.

Second phase data collection

(A) Teachers were videotaped while discussing their experiences and how they could improve their practice. These discussions took place according to the following sequence:

- (1) Teachers were asked to discuss their experiences, analysing their classroom work.
- (2) One teacher would then chair a training session, and ICT was structured in the following way:

- (a) discuss what happened
- (b) what do you think went well
- (c) what could you improve

- (3) The other teachers watched the video of the classes, while the teacher chairing the session explained how she integrated ICT into the classroom.
- (4) Discussion arose on practice and ideas.
- (5) The next teacher took responsibility for the next session.

(B) Classroom practice

- (1) Teachers completed a reflective log.
- (2) Students completed a log.

Third phase data collection

- (1) Comments of the teachers were collected throughout in the following ways:
 - (a) An interview with the teachers took place individually.
 - (b) Teachers' logs were examined.

In addition to these evaluative components of the data collection, the academic coordinator/researcher kept a journal of the progress taking place.

Challenges encountered and how they were overcome

(A) By the teacher

(1) The functional issue of what teachers might expect computers to be able to accomplish in assisting students in their learning was addressed first.

There are many teachers who use computers imaginatively and successfully. But for some teachers, the presence of the computer remains a puzzle. Computers are sometimes being used to provide ‘light relief’ to the serious business of teaching and learning. Sometimes they are seen as a useful alternative means of keeping dull and disruptive students occupied.

To overcome this issue, we took on board the concept that each teacher is distinctive in his/her capacity for inventing tools to augment his/her existing powers and education is a process that stimulates the acquisition of mastery of those tools.

(2) The practical issues of integrating the materials into the syllabus and time allocation.

Often, teachers assumed that they had to find some additional time to carry out the work involved in SAIL. As we went along, teachers discovered that they could integrate the SAIL work into other activities that were part of the syllabus. They therefore felt more confident using these periods of time to complete the SAIL activities.

On a number of occasions, work that started within the narrower framework of the project was completed in other classes. For example, some students wrote poetry or finished an article on Roma in their English class.

(3) Emotional issues

The fear of the tool was the greatest one for teachers. They had to overcome a fear of ICT to be able to integrate the materials. Before SAIL, they had often worked with an ICT specialist to integrate ICT into their teaching. Once they developed sufficient confidence they were able to collaborate with other teachers. They came to realize that they had the necessary skills to work with the materials.

(B) By the student

Students also worked in groups and collaborated on designing materials for the end product. The process was an interesting one for both teacher and students. The sequence of events that took place can be described as follows:

(1) Forming. Students rely heavily on the teacher. In SAIL the teachers put the students together deliberately and it was the students who allocated responsibilities and duties. The painful issue for the students was that they had to resolve issues themselves and not rely completely on the teacher.

(2) Storming. Once students had agreed on their tasks, a few problems arose. ‘The leaders’ tended to do more work while other classmates preferred to stay in the shadows. In these instances, the teacher did help to involve the latter more and helped students develop negotiation skills. These skills helped them communicate what they wanted from each other.

- (3) Norming. Students enjoyed learning about other children from different cultural communities. They were able to research the topic from their own homes and often met up during the holidays. For some, it was the first time they had used ICT. There was much to negotiate such as how to divide the work and how to use ICT most efficiently.
- (4) Performing. All students produced an end product which they were proud of. These were sometimes a poem, a presentation or a newspaper. However, it was the process which contributed to their education.

Results

(a) Students used ICT to produce materials on the Roma. These included newspapers, books on poetry, puppet shows, etc

Students read materials on the web, discussed with their peers, developed their own perception of what it means to be a minority and finally produced materials which they could share with the rest of the class.

(b) Like students, teachers were able to share their and construct their own pedagogy around a cultural aspect

However, in my opinion these results were not as important as the changes that occurred within the teachers. Most teachers started with a gradual progression from controlled activities within the classroom to freer ones.

(c) Perspective

During the development of this project it was interesting to note the students' reaction to the Roma. Most started with a romantic notion that they lived in caravans and wore colourful clothes. This image progressed to a concern about income and how Roma earned their money. This developed into a sense of how Roma children were much like them with some of the same concerns, but lived in a different context. This led to discussions of music and food, reflecting the participating students' everyday interests.

ICT helped students and teachers to research materials in order to discuss and compare ideas. When students are presented with one perspective they do not tend to evaluate and develop their own opinions. Instead, they accept the single perspective as the only truth. This may seem obvious, but classroom reality shows that this tends to happen often and it is the teacher who is seen as the 'bearer of truth'. This may sometimes unwillingly allow for a high-handed attitude towards minorities. A broader, more critical approach allows students to access and question various opinions on the same subject, therefore allowing them to form a more 'informed' perspective.

Analysis of process: a case study

In order to depict the actual process of transformation, we provide below the analysis of one teacher's development during the SAIL project. His pseudonym is David.

Practice

The students were first introduced to the topic of 'Roma' through the story of Muscha and the website. They then played a game focusing on vocabulary recognition. David was utilizing SAIL materials with his language class. Yet during the initial stages he seemed reticent to use ICT-based materials. He was still giving handouts, which could have also been done on the PCs in his class. During this time, activity was still very much teacher-focused.

After his first lesson, David attended a training meeting, where he learnt that one of his colleagues had already completed two lessons integrating ICT. It was interesting to note that during this meeting he did not really interact or ask questions. Later reflections, however, showed that he had noted that it was possible to utilize a different approach to the same activity. As a matter of fact, during his next lesson, computers and books were used to research a particular topic. These tools helped start a brainstorming process for newspaper articles students had to write as a group activity. A difficulty he identified in this lesson was that the group was 'dominated by the leader in the group, and that some children preferred to just leave ICT in the hands of others'. But the 'variety and originality of the children's presentations' particularly surprised him. 'They choose poetry, charts, puppets/dolls, and live music for their newspaper'. In the next class, the students focused on the manner and design of the newspaper.

The students had never worked in this manner previously, and David's observations on the third lesson stated 'they are doing the write-up in pairs/small groups rather than individually, also more work is being done in this manner, they are really keen to research on their own'.

Personal growth

David encountered various problems throughout the overall process, such as occasional technological failures and the amount of time ICT took up in class. However, after the completion of the project, he admitted that the 'kids had learned skills relating to referencing, writing, reading and team building and they had expressed their opinions and been extremely creative in their work'.

Results from the data collected showed that David was influenced to change his practice within the classroom primarily by the children's behaviour within the classroom.

The children over the past year, for me ... I have learned a lot about using the computer and certain ways of going about doing such a project. Things that were new to them,

even cut and paste, they are easy techniques but for them they are quite new. Complex for them and new. They were willing to take the risks; this allowed me to take some risks.

In addition to this, David's colleagues within the collaborative group they had set up provided a forum for discussion. This meant that he

learned a lot from them, when you share ideas, where as usually in primary school, you don't really have time to meet together and put over ideas on paper, sort of, so that was a very much a positive point for me ... We formed a group and we helped each other even by adopting ideas from one another. For example in the last idea one of the children was saying that I can not do the crossword with this software sort of you have to have the mind for it. So I said why don't you ... invent an exercise sort of like Maria [another participant in the project] did.

His perception of the researcher's role as a trainer within the process was that of a person who facilitated the overall process. In my opinion, he was absolutely right, as change is a personal matter and not one which can be forced upon an individual by others.

Conclusion

Teaching and learning in this project became interwoven and the learning environment became one for exploration and interaction, and learners and teachers in this instance were given the opportunity to creatively apply new information. Sharing a perspective of the classroom with other teachers and forming a new image of oneself within the classroom is no easy task. It is one that requires courage from the individual to accept changes. The work carried out showed that the commonality of the group outlook can not be discarded as a central influencing factor for changing pedagogy, as ICT gives the participants the support that is required to effect change.

The project also showed that whereas computers are often synonymous with the impersonal, this does not need to be the case. The teachers that took part in the project developed their own style of pedagogy, which varied from person to person, in spite of using the same software tool in the classroom. There was common agreement that they were really excited about what they had achieved and they were feeling more capable of using ICT in class after participating in SAIL. This is a pedagogical issue. As Abbott (2000, p. 98) has pointed out: 'teachers need to be helped to see the possibilities and encouraged to explore the potential for themselves'.

Forming a learning community such as SAIL did take time; time for soliciting perceptions, collecting data, allowing for different opinions, sharing of input, thoughtful considerations and discussions. Therefore the concept of training teachers within such a community can only be successful if this time is allocated, and then ICT allows for true change and progress to be made. Teachers who previously worked within their isolated circles came together and shared experiences. In doing so, they changed fundamental perceptions they had on ICT practice within the classroom.

Notes on contributor

Michelle Caruana-Dingli is currently a full-time lecturer at the University of Malta. Her PhD studies focused on teacher training using a collaborative approach in ICT. She is presently the academic coordinator of the SAIL, an ICT Minerva programme.

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