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Education & Training

RESEARCH BRIEFING

RB 5/2005   **September 2005**

EVALUATING THE POTENTIAL FOR VIRTUAL LEARNING ENVIRONMENTS: A VLE FOR TEACHING CITIZENSHIP

Key Findings

◆   A Virtual Learning Environment (VLE) can considerably enhance citizenship education, making it amenable to Key Stage 3 pupils.

◆   There are considerable hurdles to be overcome in ensuring that the community of teachers in Northern Ireland is competent, confident and willing to grasp the new orthodoxies that teaching and learning with VLEs imply.

◆   The 'buy-in' of teachers has been demonstrated to be of paramount importance and introductions to VLE technology must be high quality, relevant and designed to demonstrate the potential benefits of blending 'traditional' teaching and learning with virtual learning.

◆   Planning should ensure there is appropriate engagement of teachers in the pedagogic application of any VLE to support any area of the curriculum.

Northern Ireland
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- There needs to be a substantial training programme for teachers, which covers the technical aspects of VLE usage <u>and</u> develops the skills and judgements required.

- The project strongly suggests that school managers may be very aware of the potential of VLE-type technology and their responsibilities in providing the leadership that facilitates its integration in their schools. However, it also strongly suggests that there is unlikely to be sufficient flexibility in the current staffing and resourcing levels of schools for school managers to realise their aspirations.

- The project leaves little doubt that VLEs are viable and powerful learning environments for all types of pupils in Key Stage 3 (and by extrapolation from it, in combination with the findings of other VLE projects, to Key Stage 4 and Advanced level). It also leaves little doubt that there are considerable challenges ahead for policy makers and implementers in securing the necessary willingness and enthusiasm of teachers, affording them the time and training to reach the levels of competence and confidence needed and supporting school managers in the well-planned integration of VLE-type technology in their schools.

INTRODUCTION

1.   Focusing on the potential for computer-based enhancement of education, and specifically the innovative practices enabled by the introduction of e-learning, the Education Technology Strategy for Northern Ireland was initiated in 1997 (ETS, 1997)[1]. At that time, the Education Technology Strategy Management Group (ETSMG) set about twinning professional development initiatives in information and communication technologies (ICT) for teachers, funded by the New Opportunities Fund, with the development of a system-wide ICT infrastructure and connectivity for the education community, undertaken by C2k. These large-scale programmes were dovetailed in the first of two 5-year plans to revolutionise the ICT resourcing of schools. The second 5-year phase is underway and has moved from an emphasis on provision to an emphasis on learning (NIEL 2003)[2].

2.   In the wider education community, the Curriculum Review being undertaken by the Council for the Curriculum, Examinations and Assessment has been focusing on the development of the pupil in the context of the global, knowledge-based economy. Emerging proposals for a fundamentally revised curriculum, especially at Key Stage 3, emphasise the centrality of employability, the inclusion of citizenship and a shift in focus from content to skills development and a thematic approach to learning and teaching. Key to much of the recent and planned future developments is an increasingly sophisticated use of ICT in the delivery of learning and teaching. Running in parallel we also have the major development of the second 5-year phase: a Northern Ireland-wide 'managed learning environment' (MLE), which plans to put 'virtual learning environments' (VLEs) at the disposal of every school.

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1   *See Education Technology Strategy at* **www.deni.gov.uk/about/strategies/d_ets.htm**

2   *See the report of the Northern Ireland e-Learning Partnership at*
        www.elearningfutures.com/documents/ANNUAL%20REPORT_for2002_03.pdf

3.   In the last 5 years, there has been an explosive growth in ICT in the form of global networking and a vast and growing range of communication tools. New technology is increasingly transforming society and the quantity and immediacy of information that is available to schools through the Internet seems boundless. The very scale of these resources demands a systematic approach to managing them and the education partners in Northern Ireland have not been slow to react and commit the necessary funds. Throughout 2002/03 a series of e-learning projects was undertaken to assess both the technical aspects (choice of VLE software, design and delivery issues etc) and the education potential of such systems (for details of these see NIEL, 2003).

4.   This report presents the details and findings from a project conducted in three Northern Ireland schools during the school year 2002/03.

AIMS AND OBJECTIVES OF THE RESEARCH

5.   The aim of the project was to evaluate the readiness of schools to undertake the transition to integrating e-learning into their everyday activities. This aim comprised multiple sub-objectives focusing on the creation of a fully functioning VLE, its use by teachers and pupils in the classroom (and after hours) and the implications of the introduction of VLEs for professional development and policy.

6.   A new curriculum area was identified as the focus (citizenship education) and Blackboard[3] was chosen as the VLE platform. The aim was to develop the VLE from 'scratch' and to integrate it into a selection of school classes involving Year 10 pupils in three schools, one boys' and two girls' high schools.

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3   *http://www.blackboard.com/*

MAIN FINDINGS

Developing a VLE

7.   The experience of developing the VLE demonstrated unequivocally that the support of technical design experts is necessary and that considerable time and training must be afforded to teachers who wish to develop VLEs. The availability of good examples of how VLEs are used in schools by teachers and pupils is an important element of the training provided. It is also important for teachers to have individual areas on any VLE with sufficient time to practise navigation, create folders and post resource material etc in advance of using the system in the classroom.

8.   The large volume of resources available created a number of structural design difficulties and the expertise of technical experts is crucial to ensure a navigable design. The identification, quality assurance and structural design processes required considerable time and effort. The vetting of materials on a common platform for use by pupils across all three schools proved to be an early problem, owing to teachers' concerns about inappropriate aspects of the content. This was resolved by controlling access through the use of locked folders for each school.

9.   Where resource materials are judged useful but inappropriately presented (eg written for adults) the recasting for pupils is a very time-consuming process. This is an important issue, which may have to be addressed in other VLE subject developments where resource material is less available.

10.   The interpretation of the structural design of the VLE was different for each teacher, resulting in inconsistencies in the location of different types of resources. It is clear that the uploading of materials from different schools and teachers requires to be co-ordinated centrally in some way (e.g. by one school acting as a lead site or through the technical support personnel).

11.   The teachers felt that the Blackboard interface had many shortcomings including being overly wordy, having an inflexible menu structure and a lack of age-appropriate features such as variety in the colour options, flash and other animation effects.

12.   Right from the outset, the teachers indicated that they were concerned about their own lack of VLE skills. All of the teachers had completed their NOF training but this did not necessarily help them to feel confident in the use of computers, the Internet or the VLE and they all acknowledged that they could benefit from more training.

The VLE in the classroom

13.   Most of the teachers agreed that they experienced a new and positive teaching and learning environment but had reservations about the large amount of time and effort used to create the environment. All of them agreed that the VLE offered facilities for the pupils that significantly enhanced the curriculum area.

14.   There were mixed views about whether the VLE facilitated greater pupil-controlled learning. There may be a 'chicken and egg' situation here i.e. does a teacher's belief that the pupils cannot work autonomously prevent autonomous learning being fostered? Some argued that the pupils would never be autonomous learners while others reported that, generally speaking, pupils took on full responsibility for various tasks and were much more engaged than was usual in ensuring the best quality of their own efforts.

15.   There was no evidence in the project that the teachers developed the ability to manage pupils' learning more effectively using a VLE. It was clear that much more familiarity with the environment (and the subject) would be required. However, they did develop familiarity with novel interaction modes such as discussion boards, drop boxes, banner announcements etc. Populating and using the VLE resource base also provided many opportunities to work with image, video, audio, presentation and other conventional forms of information such as scanned newspaper articles and pamphlets.

16.   There was no evidence of the teachers responding electronically to individual pupils' needs, though classroom-based feedback was evident. This must be partly due to the fact that after-school work on the VLE was very limited. There was very limited evidence of any kind of pupil-to-teacher communication and no evidence of teacher-to-individual pupil communication via the discussion boards. If responding electronically at all,

it was in the form of a message on the discussion board to all pupils, particularly in the case of requests to desist from inappropriate communications.

17.   Despite a rota of 'hot-seating' being established, electronic monitoring and giving feedback to pupils on their work was unsuccessful as most of the teachers resolutely declined to give up their own time after school to respond to pupils' questions and problems. It is not clear how teachers can do this for any VLE context in the busy-ness of a school day unless time is specifically given over for it.

18.   The concept of virtual learning is poorly understood and the term is perhaps unhelpful as its 'virtual-ness' might suggest that the pupils are simply left to get on with it, so to speak. Normal lesson interactions such as questions and feedback decreased noticeably in the early stages, and the pattern of teaching approach across the project raised sufficient concern for the research team to provide a professional development session on 'blended learning'. An effective question and feedback process in the VLE lessons was evident in at least one of the schools by the end of the teaching phase of the project.

19.   The teachers who used a team-teaching method felt they had a distinct advantage over those who did not because it allowed greater flexibility and response to pupils' needs. Teachers who did not team-teach found it difficult to work cohesively and to present an organised and well-planned front to pupils.

20.   Although there was a broadly positive perspective on the use of VLEs as learning and teaching environments, only one teacher was strongly positive about using them in the future.

Teachers' time and access

21.   Time was an issue to which the teachers' commentaries returned repeatedly and with good reason. Time problems existed at all levels and in all activities related to the project: on-line activities were time consuming, there was a limited time in the school day to work on VLE-related needs and the duration of the project itself also limited time to complete tasks or

activities. They considered that the development of a VLE at a school level would cause intolerable strains on the work-life time balance.

22. The importance of planning and preparation in the success of each lesson was often mentioned by the teachers and the lack of familiarity with the subject area and VLE presented problems. It was clear from the beginning, therefore, that it is not realistic to expect teachers to prepare their own resources for building a VLE.

23. Access problems raised their heads throughout the teaching phase though the principals and other teachers (e.g. the ICT co-ordinators) made extra efforts to facilitate the work and encourage compromises on bookings. Virtually the only positive comments were reserved for access from home, for those who had it. Complaints centred on slow response levels of the school networks, the timetabling of rooms, technical difficulties and the costs of linking up at home. Those with an IT technician to support classroom work had significantly fewer concerns about technical problems.

24. Though timetabled, it quickly became apparent that the short one-period model of access was unsuitable. The speed and reliability of the school computer connections was a continuing problem, caused largely by the security systems used to ensure the machines and networks were not used inappropriately. A common problem involved the system logging out users after waiting times had been exhausted in a queuing system.

Classroom and on-line interactions

25. The teachers made a variety of comments about the structure of the classroom and teaching environment, including the unfamiliar situation of the pupils facing away from them. Contradictory views, most likely related to personal pedagogies, surrounded the issue of person-to-person interaction; some seeing it as being reduced, others seeing it as being promoted by the VLE. Most of the teachers recognised that a different style of teaching and learning was developing. There was evidence of more pupil-pupil interaction, with more opportunities than would be normal for discussion and evaluation of work, for both the better performing pupils and the 'quieter' pupils.

26.   One-to-one communications between pupils tended to be with those with whom they were friendly. All discussion board messages were one-to-many and sometimes attracted many-to-one responses. In the group page discussion boards, pupils could communicate only with other group members and the level of one-to-many-to-one communication was more the norm, as was the increased complexity and purposefulness of the exchanges. Communication within the group pages was task-related in almost every case unlike those in the main discussion board, which were more general and conversational. The group page environments appeared to provide an element of security for those pupils who might have been less confident communicating with a larger group of users.

27.   The teachers felt that it was important to monitor all exchanges between pupils and their underlying reasons included:

◆   The pupils, given their age, might 'act up' if they knew the teachers were not monitoring their e-mails.

◆   The cross-community nature of the project might lead to a flare up in the communications, which might not come to the immediate attention of the teachers.

◆   The pupils would probably not use the discussion board, knowing that it was monitored, if a confidential alternative (i.e. personal e-mail) was offered.

The use of the discussion boards therefore allowed all the advantages of e-mail communication with the benefit of being monitored by teachers.

28.   As the project progressed there was a significant improvement in the length and quality of exchanges among pupils. Exchanges between the pupils and an external expert (the Northern Ireland Commissioner for Human Rights, Professor Brice Dickson) contributed significantly to the planned objectives of assisting pupils to develop a better understanding of the world around them and to relate global issues to their local environment.

29.   There was evidence that pupils developed an understanding of policies in other countries and to a certain extent empathised with other young people around the world. They recognised that there are forces outside their

control that have a direct effect on them. They took the opportunity to comment on their own rights and freedoms as young people and freely discussed controversial local topics such as the problems that are associated with neighbourhood disturbances and punishment beatings.

30. The general trend in the VLE lessons was towards an improvement in discipline for most pupils across the three schools. However some of the teachers observed isolated behavioural difficulties with a small number of pupils and two felt that they had much less control in the classroom. The VLE created a busy and sometimes noisy working environment where the pupils worked in groups when designing and developing the PowerPoint presentation of their work. This presented some problems for those teachers who were not comfortable in this mode of learning.

Pupil learning and engagement

31. Most of the pupils demonstrated the ability to engage in electronic and verbal discussion, to justify their opinions orally and in writing and address examples of stereotypes, injustice, prejudice and abuse of human rights. Through the VLE they demonstrated empathy with the experiences of others and were able to express or explain views that were not their own.

32. Task allocation, within the groups overall, worked smoothly and efficiently though some tensions existed over instances of unkind criticism between pupils in different schools. The work of the same-school sub-groupings was always more coherent if for no other reason than they were meeting together in the same lesson. Each school was working at different lesson times and on different days, making collaborative work that bit more difficult.

33. The Virtual Learning Environment was argued to be less suitable for some pupils than others. It was evident that pupils who are not comfortable communicating through text had difficulty using the VLE but this may be a feature of the Blackboard interface rather than an inherent difficulty with VLE approaches. Certain pupils also seemed to dislike engaging with the technology-based approach to their learning, in contrast to their normal positive reaction to conventional lessons.

34. There was some evidence that disaffected and low performing pupils were motivated to engage with learning in the areas covered by the VLE but all

of the teachers felt that the ability and skills of the pupils had an influence on the confidence and speed at which they used the VLE. There were mixed views about whether the VLE itself motivated the pupils to learn. The stronger view was that it did motivate most of the pupils, especially the less 'able' and 'disaffected', but that this motivation was towards ICT skill development rather than citizenship.

35.   Although the emphasis on the technology was therefore felt to distract the pupils from the curricular learning objectives, little evidence was observed of any adjustment in the teaching approach to take account of this distracting influence.

36.   The pupils quickly grasped the navigational environment and the PowerPoint skills necessary for the task they had been set as the culminating outcome of their studies. This task, on an aspect of human rights of young people, was executed to what the teachers considered were extraordinary levels of quality and expressiveness by all of the pupil groups. This might have been expected of some pupils but the work of the usually underperforming pupils, those from whom the teachers and indeed principals might usually have expected little, confirmed the solid achievement of this objective.

37.   Pupils were able to search the given websites, and more widely on the Internet, to select their own material in completing their tasks and constructing their presentation. They were able to analyse (research, read and process) information about a chosen theme within the 'Human Rights of Young Adults' framework.

38.   A diversity in learning was evident inasmuch as the learning context often mixed different discussion modes (e.g. electronic and verbal, pupil-pupil and pupil-external expert etc.) and the content matter took the pupils into international issues and resource bases.

Usage patterns

39.   The usage monitoring facilities of the VLE provide a useful assessment of the teachers' and pupils' engagement but it must be noted, of course, that the statistics should be interpreted carefully as they are affected greatly by levels of access to the Internet. The histogram in Figure 1 below illustrates

the significantly increased engagement of the teachers between the preparatory (development) phase (November-February) and the teaching (classroom-based) phase (February-June).

Figure 1:
Comparison of usage levels in the development and teaching phases

Comparative Usage between Preparatory and Teaching Phases
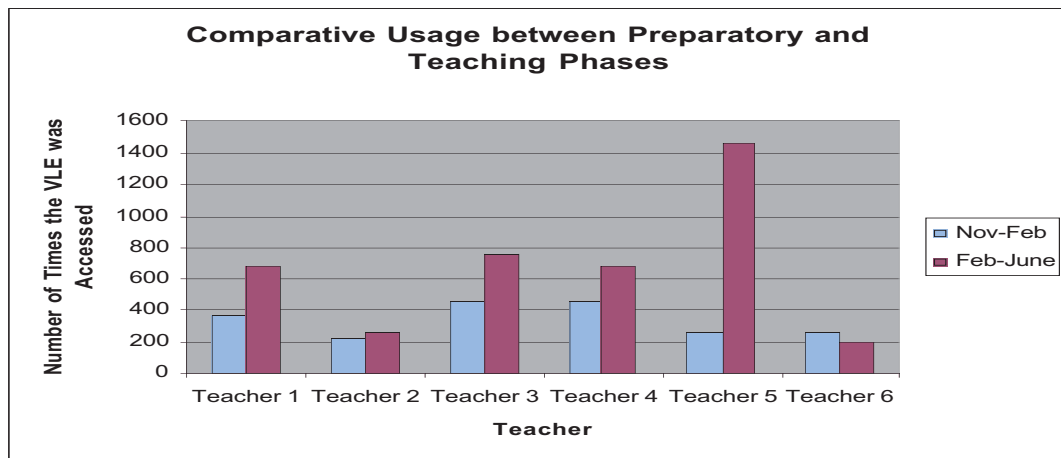
40. The time of day at which teachers accessed the VLE also altered significantly from the initial preparatory development phase, during which most access was made on training days, to the teaching and learning phase in classrooms. Figure 2 shows that two of the five teachers (from two different schools) who had access at home made extensive usage of the VLE after school hours. Two others recorded very modest usage and a fifth used it almost negligibly. (The sixth teacher did not have access.)

Figure 2:
Times of day that teachers accessed the VLE in the teaching phase (February-June)

Teacher Usage Times (Feb-June)
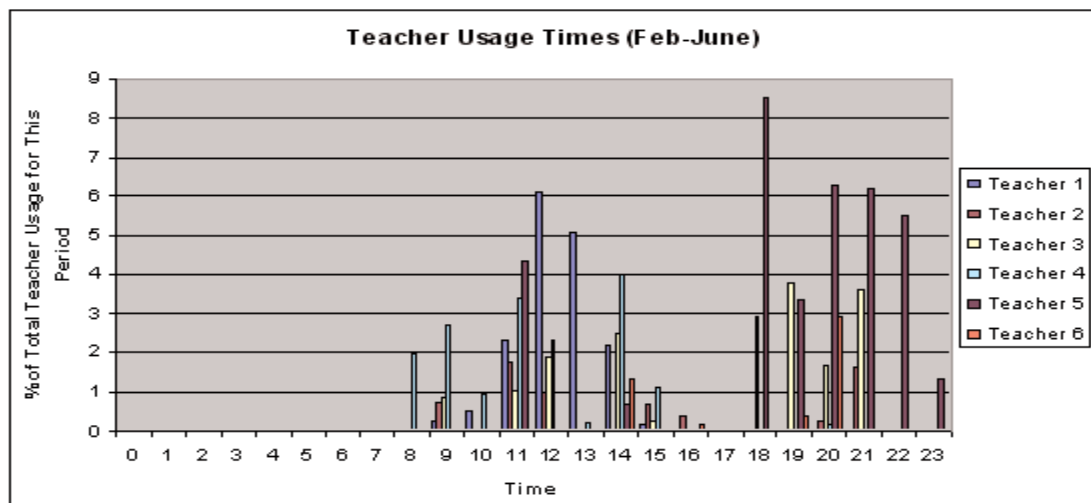
IMPLICATIONS FOR POLICY AND PRACTICE

41.   In examining the implications of the project's findings for policy and practice, David Wood's[4] framework of impact areas below suits the purpose well. "It is probably fair to say that ICT has yet to become 'mission critical' for the vast majority of schools or school systems. We will know that this has been achieved if and when the place and role of ICT is both self-evident and acknowledged to be crucial to the functioning of the system in the following areas:

◆   the curriculum;

◆   pedagogical practices;

◆   the leadership, management and development of schools;

◆   constructing the relations between school, home and community;

◆   integrating learning in and out of school;

◆   processes of (formative and summative) assessment, examination and accreditation;

◆   policy formulation, implementation and evaluation."

The areas most relevant to this report are considered briefly below.

Curriculum

42.   This project had as its focus a curriculum area, citizenship education, new to Key Stage 3 in Northern Ireland; not new in its core citizenship issues but new in terms of its impending formal integration into the curriculum. The work of the project has shown that a VLE can considerably enhance this curricular area, making it amenable to Key Stage 3 pupils and opening for them a window onto a global view of its complex and often contentious breadth of social and political issues. The project shows that a VLE approach is possible and desirable for delivering the citizenship curriculum.

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4   *Wood, D. Think Again: Hindsight, Insight and Foresight on ICT in Schools (2003), European Schoolnet @*
        http://www.eun.org/insight-pdf/ernist/David_Wood_Think_Again.pdf

Pedagogic practice

43.   The momentum of the developing managed learning environment in Northern Ireland is gathering pace and the infrastructure for educational computing in Northern Ireland is set to be radically changed. The modest level of potential for using Virtual Learning Environments in some schools will quickly become a widespread and powerful prospect for all schools. This project demonstrates that there are considerable hurdles to be overcome in ensuring that the community of teachers in Northern Ireland is competent, confident and willing to grasp the new orthodoxies that teaching and learning with VLEs imply. The 'buy-in' of teachers has been demonstrated to be of paramount importance and introductions to VLE technology must be high quality, relevant and designed to demonstrate the potential of blending 'traditional' teaching and learning with virtual learning.

44.   Planning must therefore be given over to ensuring there is:

Appropriate engagement of teachers - in the pedagogic design of any VLE to support any area of the curriculum.

Time for teachers – to:

- develop the knowledge, skills and understanding necessary to underpin their involvement in new teaching contexts;

- identify, select and marshal the vast resources available on-line to support their pupils' learning and their own teaching;

- monitor their pupils' work and progress on-line.

Training for teachers - that covers the technical aspects of VLE usage <u>and</u>:

- the skills and judgements needed to blend good traditional pedagogic practice with the integration of innovative learning contexts, in which the pupils assume much more control over how they seek and use the information that underpins their learning;

- the skills of assessing and recognising pupils' progress and performance in increasingly complex learning contexts ranging from wholly individualised to wholly collaborative;

- the skills needed in engaging with pupils in on-line feedback and support and learning outside the classroom (in existing or developed collaborative communities).

Leadership, management and development of schools

45.   The project strongly suggests that school managers may be very aware of the potential of VLE-type technology and their responsibilities in providing the leadership that facilitates its integration in their schools. However, it also strongly suggests that there is unlikely to be sufficient flexibility in the current staffing and resourcing levels of schools for school managers to realise their aspirations. Estimates of resource needs are very difficult to make with any quantitative certainty but the extent of VLE training, course development and practice time needed in the first few years of the roll-out of the next phase in the education technology strategy will be considerable.

46.   The possibilities of marrying training programmes for VLE-type development and for the new curriculum, both of which espouse many of the same essential aspirations e.g. independent learners, thematic learning etc., must be examined to ensure a cohesive and efficient use of teachers' training time, whatever level of provision that turns out to be. The recent CCEA-sponsored programme of 2-day residential training courses for citizenship teachers gives an indication of the intensity of training for a new curriculum area. The integration of VLE-type technology in schools will represent a greater challenge than this and will draw on considerably more staffing and physical resources.

Constructing the relationships between school, home and community and integrating learning in and out of school

47.   There was little evidence in this project that the construction of learning communities around classes, teachers and pupils will be easy. The project has shown that the understandable reluctance of teachers to engage in after-hours work to support such developments will be a major factor. However the prime obstacle now and for some time to come may well be the lack of awareness among the wider community (parents, employers, voluntary and community groups) of the potential for VLE-based learning. Considerable progress will likely need to be made in schools before the 'leaching' effect begins to draw in the wider community.

Processes of (formative and summative) assessment, examination and accreditation

48.   This project did not address these issues but they remain major concerns for training and development, particularly in developing teachers' skills in assessing in the new medium and in recognising learning as they monitor the new modes of pupil learning that VLEs will promote.

Policy formulation, implementation and evaluation

49.   This heading allows the main conclusion to be stated. The project leaves little doubt that VLEs are viable and powerful learning environments for all types of pupils in Key Stage 3 (and by extrapolation from it, in combination with the findings of other VLE projects, to Key Stage 4 and Advanced level). It also leaves little doubt that there are considerable challenges ahead for policy makers and implementers in securing the necessary willingness and enthusiasm of teachers, affording them the time and training to reach the levels of competence and confidence needed and supporting school managers in the well-planned integration of VLE-type technology in their schools.

METHODOLOGY

50.   The project was carried out during the period 1 September 2002 to 30 November 2003 (15 months) and covered the school year 2002-03. It was based in three non-selective secondary-level schools in Belfast, with one class and two teachers from each school taking part in the project. The work proceeded in two phases: the VLE development phase, including professional development for the teachers in the use of VLEs (November 2002 - end of February 2003) and the classroom-based teaching and learning phase (end of February - mid-June 2003), with additional professional development built in. The professional development support was ongoing on a weekly basis and was based around a series of training days throughout the operational period of the project.

51.   The project had multiple objectives and it is perhaps best to conceptualise them in three groups: design objectives, learning and teaching objectives and policy and implementation objectives.

52.	The design objectives were to provide an on-line learning and teaching environment to include a notice-board, a course outline area, course material, resource links, an e-mail facility for pupils and teachers, a conferencing area, pupils' Web homepages, tools for teachers to upload and/or create assignments, pupil profiling tools and synchronous collaboration tools (chat rooms).

53.	The learning and teaching objectives were to enable the pupils to work in project-based collaboration, to communicate in one-to-one, one-to-many and many-to-many virtual environments, to communicate similarly with teachers and to work on computer-mediated communication (CMC) tasks relevant to the curriculum and devised by their teachers. In the context of enhancing and extending curriculum provision, the following objectives were also to be addressed: reducing disaffection and increasing pupil motivation by creating an environment that reduces fear of failure and fosters independent learning styles.

54.	In order to evaluate the potential for VLEs in the classroom, specific learning and teaching objectives were agreed with the teachers. These were to:

◆	promote social awareness among young people, in order to prepare them for a more diverse society;

◆	develop a stimulating and motivating on-line environment for teachers and pupils;

◆	introduce pupils to the concept of on-line communities through which ideas and opinions on global citizenship issues can be shared with pupils from other cultures;

◆	foster links and develop communication between pupils, schools, youth groups, community and voluntary groups in order to create an extended classroom environment;

◆	provide professional development opportunities for the teachers, giving them increased confidence in and understanding of the use of VLEs;

- ◆ raise teachers' awareness of the possibilities afforded by integrating aspects of a VLE into classroom delivery;

- ◆ identify some of the issues in terms of the access, training and support that need to be addressed in order to embed ICT into learning and teaching.

55. The policy and implementation-related objectives were to identify appropriate training for teachers, who work with or wish to develop VLEs, to identify the design principles and logistic issues relating to best practice in VLE provision, and to create and evaluate a VLE serving the citizenship aspects of the Key Stage 3 curriculum.

56. Large volumes of qualitative data in relation to these various objectives were collected in the following categories:

- ◆ Project journal

- ◆ One-to-one interviews with teachers

- ◆ Focus group interviews with teachers

- ◆ ICT background and attitudes to ICT questionnaires (teachers)

- ◆ Cultural sensitivity questionnaires (pupils)

- ◆ Observations of lessons

- ◆ Discussion board and related electronic discourses

- ◆ Pupil-pupil and pupil-external expert interactions

- ◆ Pupil assignments

- ◆ VLE usage statistics (used descriptively)

57. Data analysis took the form of conventional thematic analysis, seeking patterns of, for example, agreement or disagreement in perceptions and similarity or variation in practices. Pupil outcomes were assessed by

means of a PowerPoint presentation (which formed the basis of an ongoing task throughout the teaching and learning phase) and by a pre- and post-teaching phase cultural sensitivity questionnaire. The effectiveness of the latter was constrained by a relatively high cultural tolerance level at the beginning of the teaching phase and the short duration of this phase, in which any change might have occurred. The analysis and writing up of the report took place during the period June-November 2003.

58. Dissemination of the findings has included briefing sessions (interim and final findings) for the school principals, and presentations to the full staffs of each school.

THE PROJECT

59. The project was undertaken for the Department of Education by the Graduate School of Education at Queen's University, Belfast, in collaboration with C2k. The cost of the project was £59,270.

FULL REPORT

60. The full report entitled "Evaluating the potential for Virtual Learning Environments (VLEs): a VLE for teaching Citizenship" by John Gardner, Mary Mallon, Pamela Cowan and Miriam McArdle is available on the Department of Education website at **www.deni.gov.uk/facts_figures/**.

This paper is a summary of the research report and as such
any views expressed are those of the authors and not necessarily
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