

Enacting Key Skills-based Curricula in Secondary Education: Lessons from a Technology-mediated, Group-based Learning Initiative

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Paper Presented at the

European Conference on Educational Research, Cadiz, September 2012.

Introduction

National and international policy in relation to key skills

Teaching & Learning in the 21st Century

In recent years, dramatic changes have taken place in the global economy and society, largely due to advances in information and communications technology (ICT) (Claxton, 2008). People need very different skills “for work, citizenship and self-actualisation” (Dede, 2010, p. 51) in the 21st century, compared to the previous 100 years. Trends in ICT development are transforming the world of work and creating an increasingly competitive economy (National Research Council, 2001). Advanced levels of cognitive skills and learning capacities are required of today’s workforce (Partnership for 21st Century Skills, 2006, 2011; Scheuermann and Pedró, 2009).

The economic and social trends of the 21st century have significant implications for education practices and policies and, indeed pose many challenges. According to Carr, the urgent task of education must be to assist young people in preparing for “the diversity of the 21st century wilderness that they will encounter” (Carr, 2003, p. 36). It is becoming increasingly apparent that today’s students should be expected to move beyond learning subject-specific facts and figures, towards acquiring a broad range of competencies, which include complex skills and deep content knowledge (NRC, 2001). There is a requirement to develop ‘learners’ with positive transferable learning dispositions rather than ‘knowers’ who can absorb and reproduce received information (Claxton, 2006).

Key skills for the 21st century have been the focus of developments in education systems around the world in recent years (NCCA, 2011). Many countries are re-designing their school curricula to recognise and highlight these skills and competencies as important learning outcomes. For example, the school curriculum in New Zealand (from early childhood through to primary and secondary education) aligns a range of key competencies alongside core curriculum strands. A myriad of conceptual frameworks and resources have also been developed by education organisations the world over to “delineate content and processes that teachers should convey as part of students’ schooling” (Dede, 2010, p. 51). Amongst the most widely adopted of these is the Partnership for 21st Century Skills (2006) in the US and the OECD’s Definition and Selection of Competencies (DeSeCo) project (OECD, 2005).

Many of the 21st century skills frameworks are generally consistent and complement each other (Dede, 2010). However, there exists some diversity between definitions, approaches and assumptions regarding the integration of skills and core subject content knowledge across the various frameworks. The varying levels of emphasis suggest a lack of clarity about the nature of 21st century skills and an inconsistency with current classroom practice, which is noted by Dede as potentially problematic for education reform (Dede, 2010).

It is suggested that a new balance of pedagogical approaches is necessary to align formal education practices with the needs of 21st century learners. Teachers, who in traditional models of schooling are 'knowers', are nowadays encouraged to become "paragons of learning" (Claxton, 2008, p.155), by engaging with their students as co-learners and modelling best practice in 21st century learning skills. An over-crowded curriculum is often quoted as a barrier to the lack of emphasis on 21st century skills and aspects of learning in the formal classroom (NCCA, 2011; Dede, 2010). Few opportunities for professional development are also cited as a primary reason for the persistence of "industrial-era operating practices in schools" (Dede, 2010, p. 55).

The Irish Context

Since the start of the 21st century, there has been a continuous debate about the structure and purpose of schooling in Ireland (NCCA, 2005; Jeffers, 2011). The Irish education system, particularly secondary school education, is characterised by rigid structures and traditional subject-based rote-learning. In recent times, it has come under increasing criticism from educationalists, industry leaders and international corporate organisations.

A complete review of the Junior Cycle (years 1-3 at secondary school) is currently underway, as a result of research evidence, public and political consensus and growing professional concern (NCCA, 2011). A number of key areas are to be addressed via the reform process, namely: the inflexible, overcrowded, exam-focused nature of the curriculum, the poor transition between primary and 2nd level education and a recent decline in literacy and numeracy standards. A greater emphasis on key skills is proposed (see *Figure 1 below: NCCA Key Skills of Junior Cycle* below), to deepen students' learning and equip them "to take up the challenges of further study in senior cycle and beyond" (NCCA, 2011, p.19). This proposed set of skills is grounded in national and international research and practice (ibid), similar to that described above.

Managing myself	Staying well	Communicating
Knowing myself	Being healthy, physical and active	Listening and expressing myself
Making personal decisions	Being social and safe	Using language
Setting and achieving personal goals	Being spiritual	Using number
Being flexible and being assertive	Being confident	Discussing and debating
Learning how to direct my own learning	Being positive about learning	Communicating my learning
Using ICT to manage myself	Using ICT safely and ethically	Using ICT to confidently communicate
Being creative	Working with others	Managing information and thinking
Imagining	Relating effectively and resolving conflict	Being curious
Exploring options and alternatives	Co-operating	Gathering, recording, organising, and evaluating information
Implementing ideas and taking action	Respecting difference	Using information to solve problems and create new ideas
Changing and taking risks	Contributing	Thinking creatively and critically
Learning creatively	Learning with others	Reflecting on and evaluating my learning
Being creative through ICT	Using ICT to work with others	Using ICT to access, manage and share knowledge

Figure 1: Key skills associated with Junior Cycle

Central to the NCCA's approach is that schools, teachers and students are integral to the change process and are allowed the flexibility and creativity to embrace innovation. Rather than placing an emphasis on traditional assessment of core subjects, it is proposed that students becoming more responsible for generating, gathering and presenting evidence of learning (NCCA, 2009; NCCA, 2011).

Background/description of Bridge21 model and associated CPD

Introduction

Over the past five years, the authors have been involved in a social outreach project, which has developed a particular model of technology-mediated learning (Lawlor et al., 2010). Initially targeted at Transition Year students (ages 15-16 years), the model has been used with more than 4,000 participants ranging from primary school pupils to postgraduate students and students with intellectual disability. The learning model has also been used to deliver computer programming workshops to 16 year olds, with evidence to suggest it had a positive impact on participants' perception of Computer Science as an option for study at third level (Tangney, Oldham, et al., 2010).

Key Elements of the Model

The Bridge21 learning model is designed to release the potential of technology-mediated learning, through a structured move away from individualised, teacher-led learning. The core components of the learning model are outlined below. Central to its rationale is the potential of ICT to support a structured collaborative, project-oriented learning environment. The essential elements of the model are as follows (Lawlor et al., 2010). (See also see *Figure 2* below.)

- **Technology** used as an integral tool in the process.
- Delivery of content through student-led **cross-curricular, thematic projects**.
- A physical **learning space** designed and configured to support team-based learning.
- A structured **team-based** pedagogy influenced by the Patrol System learning method of the World Organisation of the Scout Movement (WOSM).
- A pedagogical approach which focuses on **skill acquisition** & content knowledge.
- The impact of the **social context of learning** on motivation and engagement
- Adult support that seeks to **guide** and **mentor**, with teachers orchestrating and scaffolding team activities.
- Incorporation of team and individual **reflection** as a regular part of the learning.

Individually the elements which comprise the Bridge21 learning model may be considered as common and well understood in their effect, but their combination and systematic application, particularly in formal education, is unusual.

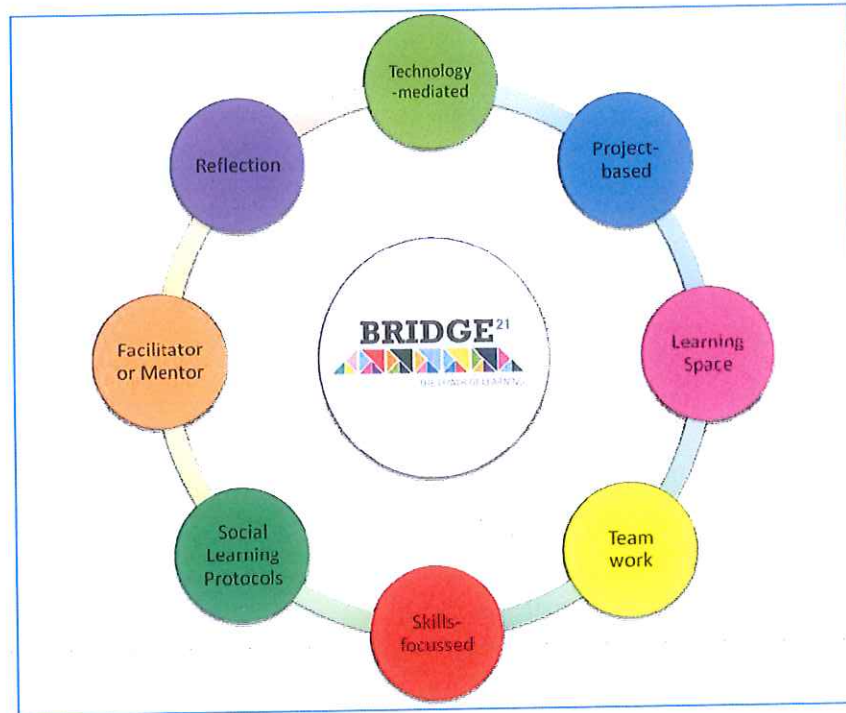


Figure 2: Bridge21 Learning Model

Development of the Model

The main deployment of the learning model to date has been as part of an out-of-school educational outreach programme with students from areas of social disadvantage in Dublin, Ireland – entitled Bridge2College. The typical workshop format is 3.5 days (22 hours) in duration and includes day-long projects, requiring students to work in teams of 4-5 students, research and explore various topics (some with a curricular focus), and create multimedia artefacts (videos, blogs, podcasts, games etc.). There is a strong emphasis on collaborative, project-oriented constructivist learning activities. A strict deadline is imposed on teams to deliver their work on time and make presentations to their peers and adult mentors. Students are encouraged to regularly reflect on and discuss their learning, knowledge and skill development.

Results from four years of the out-of-school implementation indicate that the learning model has a positive impact on students' intrinsic motivation and their attitudes towards personal learning and ability (Lawlor et al., 2010). The results also highlight the potential of technology-mediated teamwork to support the development of 21st century skills such as collaboration, communication, problem-solving and critical thinking and indications of skills transference to the school and other learning contexts. Furthermore, there is evidence to suggest an improved attitude towards technology and its role in students' formal learning.

The results outlined above suggest the possibility of implementing the learning model directly in the formal classroom, so as to release the potential of ICT, to

leverage the power of collaborative learning and, ultimately, to change pedagogical practice to suit the needs of 21st century learners.

Adapting the Bridge21 model in the classroom

Based on the core components detailed in *Figure 2* above, the Bridge21 learning model follows an approach to curriculum, ICT, classroom design and pedagogy that have the potential to change current classroom practice and equip students for living, learning and working in the 21st century. It presents a shift in focus from a narrow view of teaching individual subjects, to a wider goal of teaching key competencies and skills through the engagement with curriculum material. The goal of implementation is to create a pool of 'early adopters' (Rogers, 1995) – students, teachers, principals and schools– who, through their concrete experience, will act as role models and reference points for the 'early majority' (ibid.) as they too embrace reform.

Implementation Options

Schools can choose to adapt the model in a number of different ways.

1. **Single Subject Module:** Subject teachers adapt the Bridge21 model & use it within a **single subject**, within the confines of the regular timetable. The learning objectives are specific to a single subject area, but also focus on key skills.
2. **Integrated Curriculum Module:** The Bridge21 model is used to support cross-curricular project-based learning during one or more **integrated curriculum modules** as part of the weekly timetable. The learning objectives include multiple subject areas, and also key skills.
3. **Thematic Module:** Teachers develop and implement cross-curricular, team-based projects. During a **thematic learning and teaching week**, students engage in a project utilising learning from the different subject areas. The learning objectives include multiple subject areas, and also key skills.

A Participative Partnership Approach

The implementation of the Bridge21 learning model in schools is based on the active participation of teachers and principals in the areas of planning, teacher education and development. Within the CPD workshops provided to teachers there is an emphasis on experiential learning, providing them with the opportunity to develop and reform their practice through experiencing the learning model first-hand. In accordance with the relational approach advocated by Blatchford et al. (Blatchford et al., 2003), a training programme was also provided for students.

Methodology

The analysis presented in this paper is based on data from two of the 6 schools which engaged in the Bridge21 Project in academic year 11/12. School A is a mixed gender school and is deemed to be socially disadvantaged. Students from this school have been attending Bridge2College workshops for the past four years and thus have an established relationship with the project team. School B is a private, fee paying, all female school engaging with the project for the first time. In both cases the school principal was highly supportive of the schools engagement with the Bridge21 project.

School A enrolls girls and serves an area of relative economic and social disadvantage. Six teachers and thirty-five First Year students (age 12-13) participated, and project implementation reflected a mixture of single-subject and integrated curriculum approaches. In School B, also enrolling girls only, but serving a more economically advantaged population, nineteen teachers participated along with one hundred and four First Year students. This private fee-paying school is very well equipped in terms of ICT infrastructure, with a local virtual learning environment and a social networking site along with plentiful tablet devices. There was considerable flexibility about the extent to which teachers within schools engaged with the intervention programme. Typically, individual teachers within schools signed-up for involvement with the programme and worked with intact class groupings, reflecting the somewhat notional state-wide average student-teacher ratio of 13.6 (DES, nd). In reality, class sizes vary somewhat depending on the teacher and subject being taught.

A case study of the two schools profiled above using a mixed methods approach to data collection was utilised with a view to assessing the appropriateness of the B21 model for the realization of selected key skills and to identify the factors which facilitated and impeded implementation of this model in the school context. The instruments used were as follows:

Pre and post test student questionnaire. This contained a mixture of Likert scale and open ended questions and was designed to measure student experience and awareness of selected NCCA key skills. Three skills deemed by the researchers to be most compatible with the B21 approach 'Being Creative', 'Working With Others' and 'Managing Information & Thinking' (NCCA, 2011) were selected and questionnaire items devised to reflect the associated sub-skills. The skills and associated sub-skills targeted are as outlined in Table 1:

Table 1. Skills from the NCCA framework which were explored in the study are marked with an *

Skill	Being Creative	Working Others	With	Managing Information & thinking
Sub-skill	Imagining	Relating effectively and resolving conflict	effectively	Being curious
	Exploring options & alternatives *	Co-operating *		Gathering, recording, organising & evaluating information *
	Implementing ideas & taking action *	Respecting difference		Using information to solve problems & create new tasks *
	Changing & taking risks	Contributing *		Thinking creatively & critically *
	Learning creatively *	Learning with others *		Reflecting on & evaluating my learning *
	Being creative through ICT	Using IT to work with others *		Using ICT to access, manage & share knowledge

Teacher focus groups and semi structured interview. Two teacher focus groups were conducted with a view to gleaning qualitative data reflecting teacher's experiences and views of their participation in implementing the model. Focus Group A consisted of four mathematics teachers from School A. Focus Group B consisted of four teachers from School B who taught the following subjects: Art, Geography, Home Economics and Physical Education/Geography. In addition to these two focus groups with teachers in the case study schools an additional source of qualitative data was a semi structured interview with a teacher of Irish in a non case study participant school. The issues explored in this interview were the same as those addressed in the focus groups. Following transcription all three sources were analysed using the software NVivo based on a bottom up approach to coding. A number of team and individual student reflections were also included in the analyses.

Findings

Students' experiences and views

Students' overall rating of B21

One item in the questionnaire asked respondents to rate the Bridge21 programme using a 5-point likert scale. Results show considerable satisfaction with the initiative, with 96% of students recording ratings of Good or Excellent. Students' responses to the Individual Reflection Questionnaire also indicate their overall enjoyment of the

collaborative approach to learning, with 18 indicating that they nearly always and 26 indicating that they always enjoyed working with their team. A further 17 stated that they nearly always and 29 indicated that they always liked working with their team, with the same response rate in relation to the statement '*I got on well with my teammates*'. The students' responses also reveal that they had positive interactions with their peers, were willing to help their teammates when they needed it and that they listened to one another's ideas.

Table 2. Students' self-rating of team participation. School B (N = 53)

	Never	Only now & again	Sometimes	Nearly always	Always
I enjoyed working with my team	1	1	7	18	26
I did not contribute to my team's ideas and work	30	13	6	4	0
I trusted my teammates	1	4	5	19	24
I had a clear role to play in my team	0	5	8	19	20
I didn't help my teammates when they needed it	39	7	0	4	0
I got on well with my teammates	0	2	5	17	29
I was bossy with some teammates	43	7	3	0	0
I made a good contribution to my team	0	2	8	17	26
I listened to my teammates' ideas	1	1	3	17	29
I liked working with my team	0	1	6	17	29

Students' Experiences of B21: Higher frequency of teamwork and greater student appreciation of value of teamwork.

The B21 approach seems to be associated with greater implementation of active methods in schools. Analyses conducted show increased student reports of engaging in the more active methods promoted as part of B21. The data show that students reported engaging in teamwork more frequently later in the year, with a difference of .292 on a 5-point scale. Though a small difference, this is statistically significant. Students also reported higher appreciation of the value to them of this teamwork in terms of feelings that other students helped them learn. This perception that collaborative work resulted in enhanced learning is statistically significant and of practical significance with average increases of almost half a scale band (e.g. .431 and .414 respectively for others helping me learn and learning from working as part of a team. These data highlight positive changes in both the quantity and impact of collaborative/team-based learning promoted within B21.

This was supported by responses to the Team Reflections Questionnaire. For example, a total of 30 teams stated that '*we took turns when talking to each other*' nearly always or always. Similarly, a total of 37 teams stated that '*we all did our fair share of the work*' nearly always or always. All of the teams in school A (n=22) and the majority of teams in school B (n=14) agreed that they '*got on well together*' nearly always or always (see Tables 3 and 4).

Table 3. Team Reflections. School A (N=22)

	Never	Only now & again	Sometimes	Nearly always	Always
We took turns when talking to each other	1	1	2	7	10
We were sensitive to the needs of one another	0	0	2	5	15
We discussed things and did not argue	0	3	2	6	11
We were well organised	1	1	2	10	8
We were interrupting & cutting each other off when speaking	13	5	4	0	0
We got on well together	0	0	0	2	20
We all did our fair share of the work	0	0	1	7	14

Table 4. Team Reflections. School B (N=19)

	Never	Only now & again	Sometimes	Nearly always	Always
We took turns when talking to each other	1	2	3	10	3
We were sensitive to the needs of one another	0	3	7	5	4
We discussed things and did not argue	1	1	3	9	5
We were well organised	2	2	6	6	3
We were interrupting & cutting each other off when speaking	6	11	2	0	0
We got on well together	0	1	3	7	7
We all did our fair share of the work	0	1	1	10	6

Students' Experiences of B21: Use of Technology.

Technology as a means to mediate learning plays a central part in the B21 approach. Student responses to the two questionnaires provide statistically significant corroborating evidence that ICT was, in fact, used more frequently in

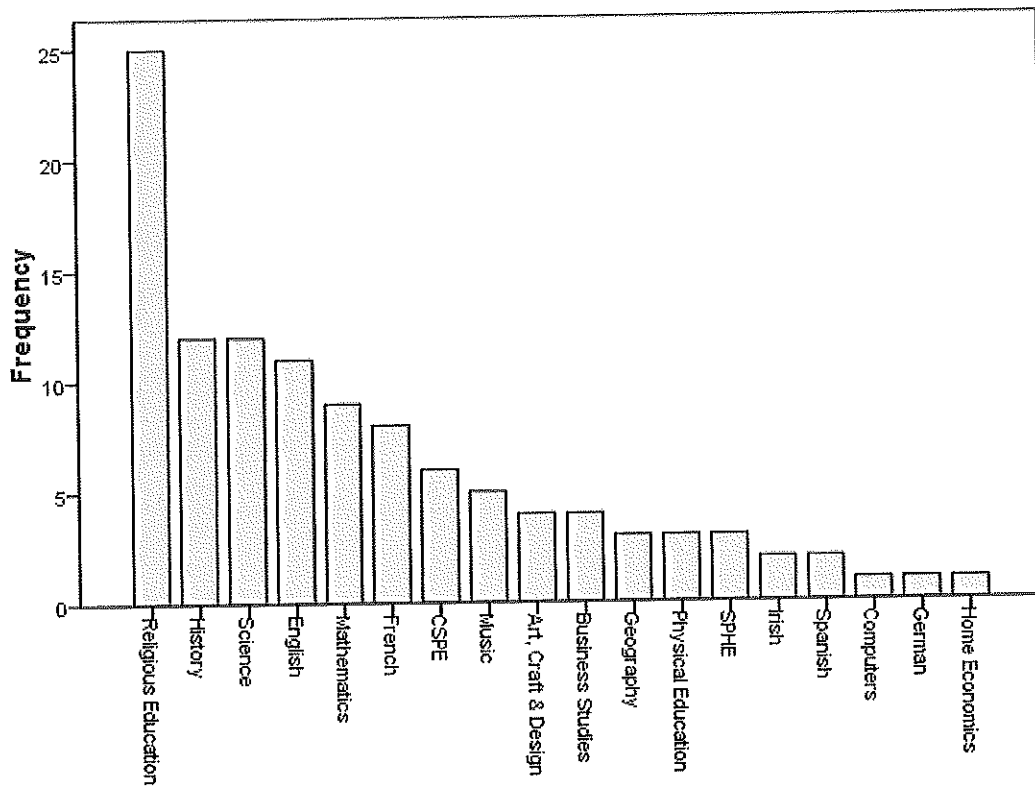
classes at the end of the year than earlier in the year. The mean on this variable pre-treatment across the 102 students who responded to both items was 1.78, indicating on average, that ICT was used 1-2 times a month. By the end of the year, averaged student responses highlighted usage of 1-2 times a week (mean 2.12). It is noteworthy and understandable that whereas there was increased use of ICT in working on a task, there was no significant increase in the extent to which ICT was used to share and swap work with other students.

Students' Experiences of B21: Increased awareness of their own learning.

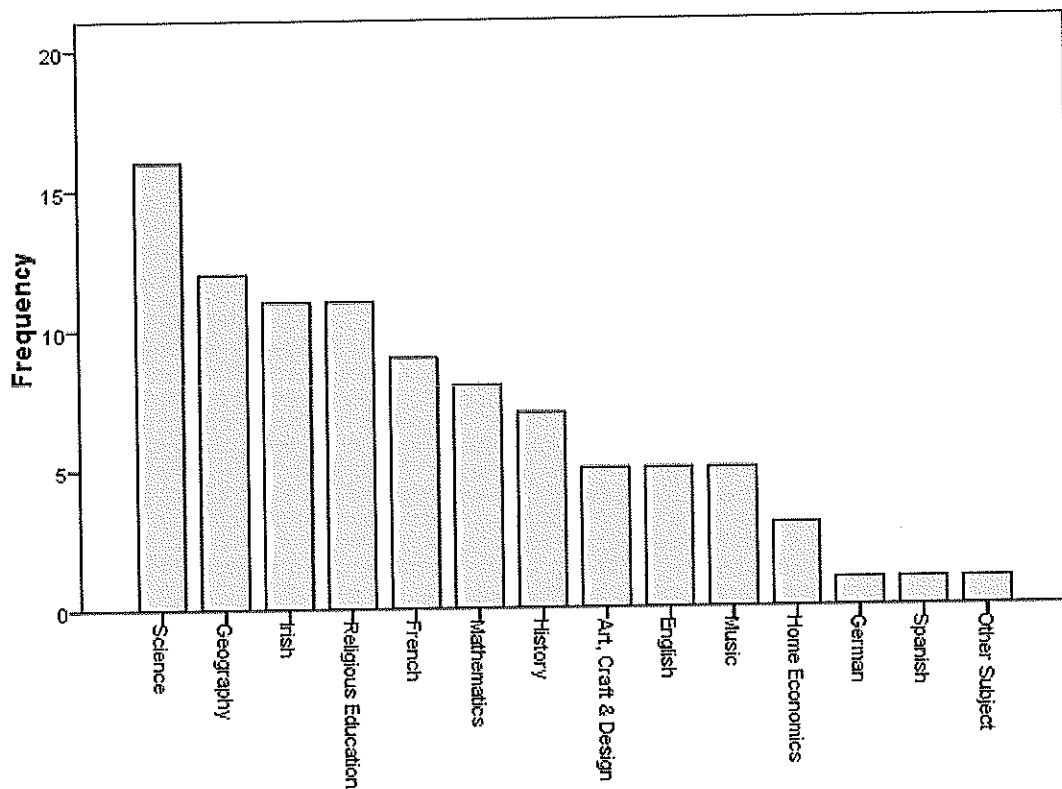
A desired impact of B21 was greater awareness amongst participants of their learning and increased capacity to systematically plan and implement learning strategies. Results from the two surveys suggest some evidence in this regard. Given the emphasis within the programme on cross-curricular and cross-task generalised skills, there is an interesting increase in students awareness that skills learned in solving a problem could be transferred subsequently to dealing with other problems. This awareness occurred more frequently later in the year than earlier, on average occurring 1-2 times a day (2.31 up to 2.54) across 109 students responding. Similarly, the programme strategy of encouraging students to utilise action planning in advance of completing tasks is reflected in the students' experiences of the programme. At the outset, such action planning was typically rarely practiced (mean .96) but this had increased to 1.72 by the end of the programme. Though still a relatively low mean (on a scale 0-5), the increase is noteworthy nonetheless. This is illustrated by the fact that whereas 43% of respondents reported "Rarely/Never" drawing up an action plan for a task initially, this had dropped to 23% at the end of the year. Similarly at the other end of the scale, increased planning was illustrated by the fact that only 8% planned 1 or more times per day initially, this had risen to 27% at the end of the year.

Subjects where Bridge21 approaches were most evident – Student perceptions

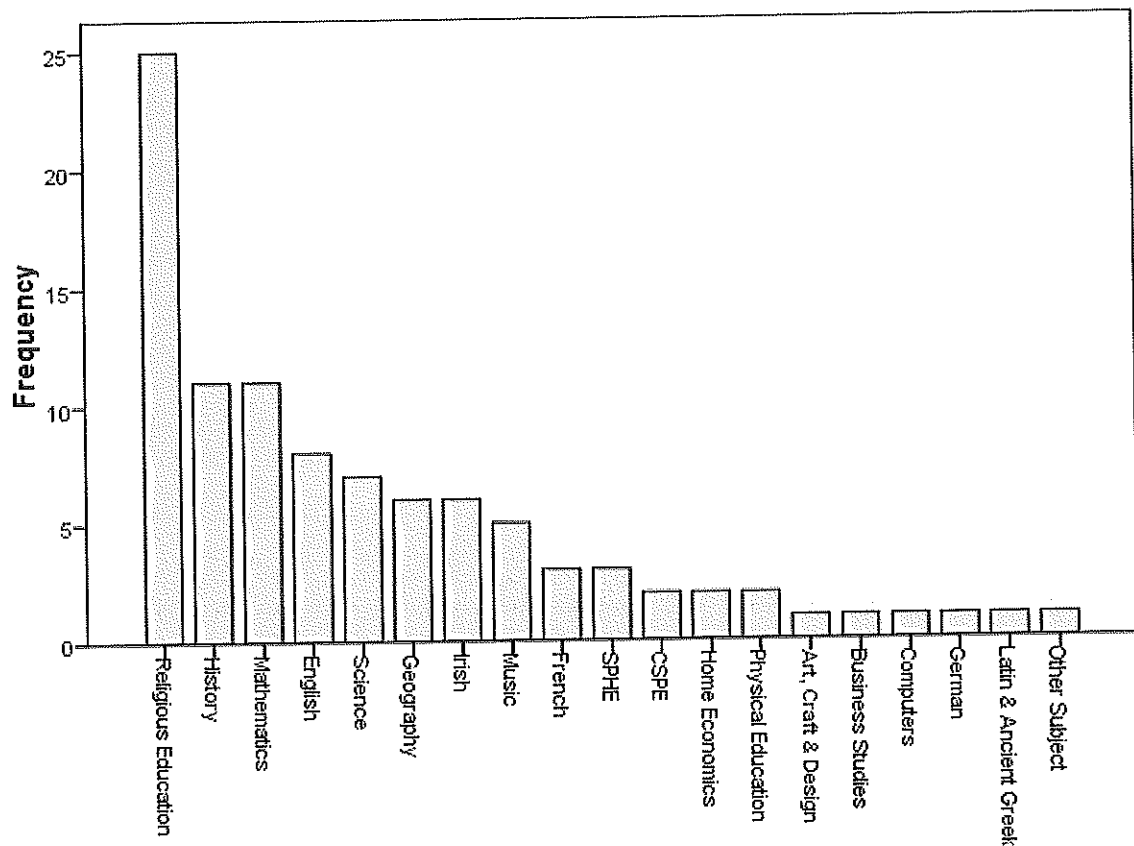
Students were asked to highlight subjects where specific approaches linked to Bridge21 happened most during the year. The analysis focused on the choice of subject initially recorded by students (out of a possible three subjects). This analysis showed, not surprisingly, that the subject Computers was where ICT was most frequently evident, that project work was very evident in History, that Science was the subject where students tended to learn two or more subjects at the same time. Data indicate that students most frequently learned in teams in religious education, history, science and English; that they created their own learning material in Science, Geography, Irish and Religious Education; and that they reflected most about their learning in Religious Education, History, Maths and English.



Subjects where learning in groups/teamwork most evident



Subjects where students created their own material



Subjects where students had time to think about what they learned

Frequency of resource use in Bridge21 Classes

Similar analyses examined the frequency with which specific resources were used in classes, as indicated in Table 5. In the main, student reports corroborated expected patterns with frequent use of laptops, PCs, software, digital cameras and whiteboards in Bridge21 classes. Expected also was the relatively less frequent use of textbooks and copybooks reported by students. Quite high usage of worksheets was, however, reported by students, with almost two-thirds of students reporting that worksheets were used in all or most B21 classes. Clearly this is an issue of interest, perhaps focusing on what the nature of the worksheets was and how they were used to promote key skills.

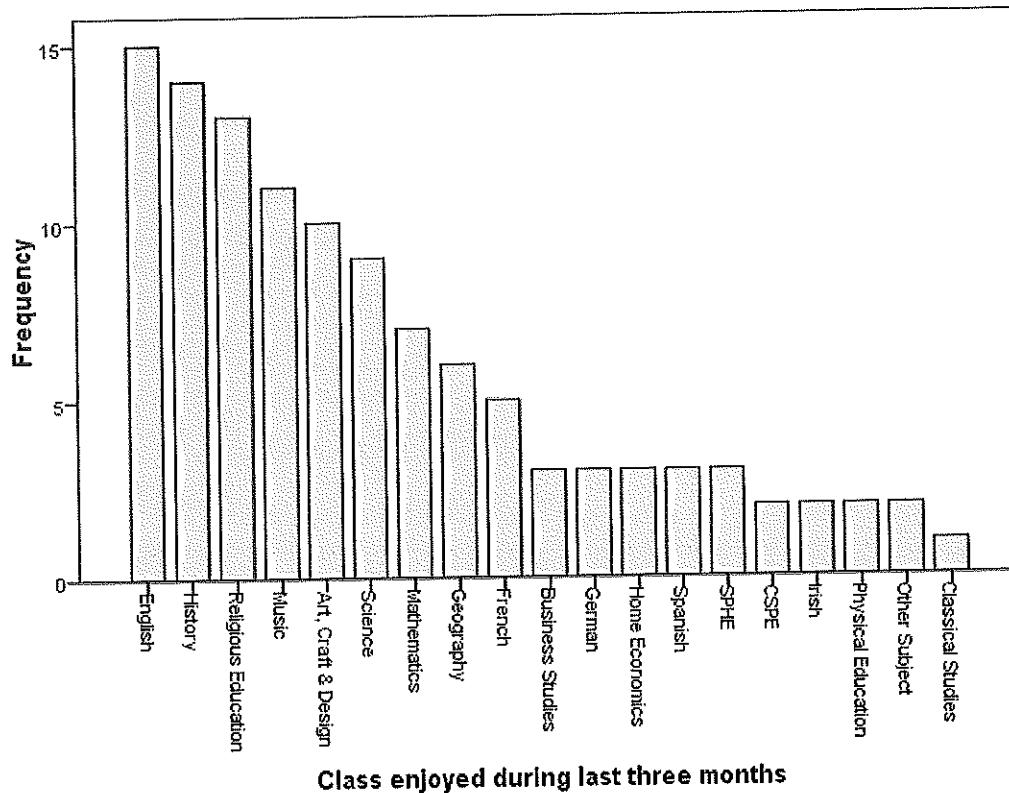
Table 5. Frequency of learning resource use in B21 classes – percentages of students

Learning Resources	Used in all B21 classes	Used in most B21 classes	Used in some B21 classes	Used occasionally	Never used
Laptop	58	27	6	2	8
PC	25	25	13	13	13
Computer Programs	52	30	8	4	7
Digital Camera	41	33	13	5	8
Whiteboard	44	36	8	9	3
Textbook	16	8	9	28	40
Copybook	16	16	9	21	37
Worksheet	36	29	19	11	5

Class students enjoyed

Students were asked to describe in open text a class that they enjoyed during the latter months of the school year. Responses were coded and indicated that the most commonly noted subjects were English, History, Religious Education, Music, and Art and Science. About one third of students did not offer any rationale for their choice, while specific reasons highlighted centred on student interaction (15%), teaching methodology employed (14%) and multiple reasons (15%). Significantly, ICT did not feature strongly amongst the reasons cited. However, the phrasing of the item did not ask students to base their most enjoyable class on a Bridge21 class (where

technology was widely used, as evident in previous results).



Teacher's experiences and views

Teachers experienced technology as both an enabling and a challenging factor in respect of B21 implementation. Teachers found the unstructured approach more difficult to manage and identified mixed ability groups, prior student experience, the nature of the project/task and the timeframe involved as factors effecting student engagement with this model of learning and the associated processes. As might be expected some students were more engaged than others within groups. Where technical problems occurred they were found to contribute to student disengagement. In some cases engagement improved over time as students became more familiar with this model of learning. The make-up of the groups and in particular the presence of a group leader was found to be important.

Teachers considered that as a consequence of participation in the B21 model students developed research and observational skills (both computer based and in the context of educational field trips) as well as presentation skills although some teachers reflected that students ability to communicate their findings was mixed and that the research which fed into it was sometimes 'better' than the finished product. Although some teachers raised concerns regarding the learning outcomes which ensued and questioned if students learned anything of relevance to the formal curriculum others expressed the view that some deep learning did occur when there

was positive engagement with the associated task linked to an element of student choice. Peer assessment was experienced as a motivational factor for students to produce their best work in the context of presentations with the levels of engagement and the standard of work found to improve from an initial to a subsequent round of presentations. Teachers reported student enjoyment of learning in this way and of presenting their work and engaging in peer assessment.

Teachers experienced uncertainty regarding an appropriate level of input and structure to provide linked to the changing role for both teacher and student manifest in this approach. A positive sense of teacher achievement was manifest when student engagement improved, students performed well in presenting their work and student enjoyment was in evidence. The converse was the case when difficulties with technology and student disengagement were experienced. Teachers reflecting that the learning outcomes were minimal for the amount of time committed identified a number of desirable conditions for future implementation: a tighter project focus and more structured implementation, the teaching of group work skills to students, teacher CPD in IT skills and the provision of reliable technology.

Factors facilitating and impeding implementation – Teachers perspectives

Technology was identified by teachers as a facilitating factor which in terms of motivation had a positive effect on student engagement being a deviation from their usual mode of learning. Use of technology in the context of B21 was seen by teachers as providing for a connecting of their personal and educational uses of technology and the opportunity to foster a 'mature' use of technology in an educational context. As outlined by one participant in Focus Group B stating:

I suppose it was a motivation because mobile phones are banned and they're supposed to leave them in the lockers when they come into school. Now what happens ninety-nine percent of the time is that they have them sitting in their pockets and they are turned off and they might be buzzing or the volume is turned off so it's a constant distraction anyway in their lives while they're learning because they are in their pockets and they are buzzing and then you can see them checking and looking to see if there are messages so when the mobile phones were allowed it was great because they could take them out so that it was open – they could receive messages while they were learning and all of that but I suppose it's 'the forbidden' so it was kind of breaking the rules by being able to take out the mobile phone so it's really to teach them about being more mature about using it for educational purposes and making that connection because they felt 'this is great' but they didn't necessarily connect it as...

However where technical issues were experienced including the loss of data collected and compatibility issues with certain technologies, technology or more specifically problems with technology was seen as an impediment to the implementation of the B21 approach. Teachers also saw their uncertainty and

unfamiliarity with certain technology based skills as an impediment although in some cases this was aided by using peer mentors from Transition Year (TY). Linked to this teachers saw technology based CPD as a facilitating factor in respect of successful implementation. Some teachers also relayed how the technology employed was in certain instances a distraction for students providing an avenue for pursuing interests not related to the task or project at hand.

Teacher saw the B21 approach as not entirely technology dependent instead reverting to 'pen and paper' in the event of technical problems.

Students' lack of familiarity with the B21 approach was identified by teachers as an impediment to implementation pointing to the need for students to be facilitated in learning how to work in groups as part of participating in this approach. This was understandably less of an issue for students used to working in pairs or teams. Teachers also pointed to how students need clearly defined roles and to be given a narrow focus to participate effectively within groups. This was particularly the case for weaker students within mixed ability groups who in some cases were unable to understand the roles assigned to them. Generally teachers were of the view that in order to facilitate implementation the activity should take place within a time frame compatible with students' attention spans and ideally within a block of time rather than spread out over a number of weeks. Teachers were also of the view that a significant degree of input or structure is necessary to facilitate successful implementation with the task or activity broken down into short term targets as well as the final goal. As outlined by the teacher who participated in the semi-structured interview; I think I would break the task down a lot more. I would say 'right, at the end of today's lesson we will have this' and everybody would be working on the same – while they would be aware of their final goal – I would put more structure in between the start and the end and I would also spend some time working on teaching group work – teaching how to rely on each other. What's more, I didn't give them particular roles the last time and I'd certainly do that'.

Teachers acknowledged that the B21 model demands a change in role for both teacher and student. Whilst uncertain regarding an appropriate level of input or structure to provide teachers drew attention to the need for reinforcement of student's roles over the course of the project. In some cases an over reliance on teacher input was reported attributed to a lack of student experience and familiarity with independent modes of learning.

Teacher apprehension regarding change, their proficiency with technology and specifically technology in an educational context, students being more proficient with technology than themselves, the relative perceived lack of structure involved with the B21 approach, student disengagement, student absence and issues related to assessment may be interpreted as factors limiting implementation from a teacher perspective. The nature of the task/project employed was also perceived as

influencing the degree of success experienced with a narrow concrete theme to which students could relate perceived as being more likely to succeed than a broader more abstract undertaking less aligned to students personal day to day experiences.

Conclusion

The findings from this case study conducted with two schools implementing the Bridge21 model highlight the positivity of students towards this approach and its potential for the realisation of selected key skills. The findings also illustrated, however, the challenge experienced by teachers in transitioning to a key skills based curriculum, in the absence of wider enactment of such approaches in the national context. Parental expectations around the need to “cover” the entire syllabus and for students to succeed in relation to existing, important terminal examinations and certification continue to dominate. This illustrates the tension for teachers of implementing a locally developed curriculum innovation against a backdrop of an existing nationally developed and assessed curriculum. This tension may ultimately be resolved when and if a system-wide implementation of a key skills based approach is realised. For now, the teachers participating in this study may be considered as ‘early adopters’ in piloting the model associated with the present study. As such, responses from these teachers highlighted the challenges associated with implementing this reform and in particular the challenges they face in relation to assessing their own students for state certification, a role intended, but not yet achieved at lower secondary level in Ireland.

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