A ‘School of Fish’ inside and outside the Classroom: Localising the National Curriculum in Environmental Studies

Tomás Ó Briain,
Blackrock Education Centre, Ireland, tobriain@upcmail.ie

Abstract: This is an account of integration between schools and a fishery protection agency, between ICT and the Social and Environmental Education syllabus in Irish primary Schools, between learning in classrooms and learning on local rivers. It tells how the original concepts for curriculum can be interpreted, changed and developed in different locations and in different times.

Keywords: Curriculum innovation, Continuous Professional Development. localising national curriculum, project based education

There’s a school of fish way down in the sea
Where the little fish study Geography.

1. A Revised National Curriculum

In 1998 the Department of Education and Science (DES) in Ireland launched a revised National Primary School Curriculum [2]. This followed the Report of the Review Body on the Primary Curriculum [3]. In 1992 Curriculum Committees covering five of the six major areas of the national curriculum were established.

I was a member of the Social, Environment and Scientific Education (SESE) Curriculum Committee. Our remit was to review, revise and develop the SESE section of the National Curriculum of 1971 (a) according to the recommendations of the Review Body, (b) by the principles laid down in that 1971 Curriculum [4] and (c) in line with the overall curriculum guidelines set by the National Council for Curriculum and Assessment (NCCA).

The National Curriculum we were revising had remained essentially unchanged since it was first published. The 1971 Curriculum aimed to change the focus of the curriculum from subject-orientation to a child-centred one and to lay a more localised activity based foundation to the learning process. The revised documentation endorsed these principles and emphasised a constructivist approach in the learning-teaching process as indicated in these Teacher Guidelines: ‘The constructivist view of learning involves beginning from children’s ideas and
practical experiences, reflecting on where children are in the progression towards the development of more scientific ideas,\textsuperscript{[2]}

We argued strongly for a long period of professional development to introduce the revised curriculum. We recognised that real change takes time. Change cannot occur by decree and desired changes take time to occur. “There are no quick fixes, but there are quick failures.” \textsuperscript{[5]} A National Curriculum no matter how good must be applied in the real classroom. It must be adapted and localise. must meet the learner at where that learner is and with her/his present body of knowledge and personal experience in all its dimensions and planes. That focus has to be carried through to each local school and each teacher. Teacher training of all hues has to carry that message quite deliberately. To quote Joseph J. Schwab \textsuperscript{[6]}

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\textsuperscript{1} (Science Teacher Guidelines p3)
to grow into the change and adapt it to their own repertoire of skills, to see examples in practice while allowing scope and space for the genius in their pedagogy to develop a personal ownership.

Change in teaching practice for most is incremental and exploratory, and teachers during the change process need support and guidance. We recognised the benefit of providing exemplars in the 1971 curriculum to illustrate the localised implementation of content and to diffuse the effect that the over reliance on textbooks can have on classroom practice [8]. We, in our revision, also included exemplars and greatly increased their number to illustrate certain directions that might be followed. For example Exemplar 8 in Science offers an approach to integrating ‘Water’ in Science and Geography and Exemplar 7 in Geography gives guidance on investigating a stream including safety measures for the field trip. We wished to provide as many exemplars for all class-groups and in all strands of the curriculum. Producing a sufficient number of exemplars, however, was limited by cost in the hard copy format but our expectation then was that these exemplars would be regularly added to from emerging good practice in classrooms, that other supports in continuous professional development (CPD) would complement the exemplars over time through the use of the Internet and digitised media resources.

With changes in curriculum one can lose sight of some of what was best in the old. There was much good pedagogical material and guidance in the previous version of the curriculum and we wished it to remain. The review and launch of the National Curriculum coinciding with the official introduction of ICT in learning and teaching might have eclipsed and shaded some of the old pedagogy. The hype and inflated promises from some sources in describing the digital school or classroom coupled with what was perceived as a new curriculum might have tended to hide some of the good practice of the past. But our hope was that good teaching combining with the powerful tools of ICT and with the best practices from the past would ensure better learning opportunities and experiences.

3. Something Fishy project

And that is what we find in the Something Fishy project Ó Canaimn and Hughes [9] reported on at the Budapest IFIP WG3.5 Conference in 2004. Since they presented their paper a new dimension has been added to the project. Local Fisheries Protection Officers have joined forces with the Education Centres in localising the project in a unique way. Teachers use the 8 lessons on the Something Fishy web site [10] or a selection of them, with their class. Each participating class receives a visit from the Fisheries Officer who presents an overview of the work of fishery protection and the freshwater fish environment to the class augmenting the work already covered by the teacher and students in their class work. Later, nearing the end of the project, the Fishery Officer and some others on the team give a live demonstration to the class on a local river on the type of work they do in protecting and enhancing the fish stocks while demonstrating the technology available to them for that work.
4. On the River

This visit to the river proved to be a highlight for all the children. In the words of reporter Derek Evans “As I arrived …at the River Dodder last Monday morning I could hear Des Chew … explaining details of the field trip to the 30 fifth-class students from St Joseph’s National School, Terenure. …taking part in a two-hour survey of the wildlife, the trees and the ecology, and recording everything they observed along the Bushy Park stretch of the riverbank. They explored the relationship between trees and the river, and at the end of the walk entered the river and took ‘kick’ samples of the insects in the gravel. …The highlight involved electrofishing the river, a process of temporarily stunning the fish for scientific purposes. Trout, eels, stone loach and minnows were taken from the river for analysis. …” [11] There is something special in the intimate contact with the local environment that is hard to replicate in any other way, even in virtual worlds.

5. The End Product

Finally each class presents their own end product to demonstrate how much they have learned and gained from their involvement in the overall project. These individual class projects have proven to be varied and diverse, in how they were presented, in the aspects covered and in the medium, style and quality of presentation. There was no requirement to present individual projects in any specific form. However, it was clear that ICT played a large part in the preparation of some of the end products, and indeed in many cases, was the form of presentation. Video/films, still photos, PowerPoint and similar presentations, the use of digital microscopes, online learning systems such as Moodle, (http://moodle.org/) and regular Internet use were in evidence in most the schools.

Some school projects displayed skills used by more professional elders. In one video production the film makers used cut-outs of the fish against a blue backdrop portraying the river while the students skillfully moved the fish as if going up-river using voice-overs depicting conversations of the various fish. Another video presented the life cycle of the salmon using the students’ own artwork. Photo Story was much in evidence in conjunction with still photos and in PowerPoint presentations. In the school where the Moodle learning system was used the students uploaded their work from school and also from home, from where many parents also got involved.

But there were also presentations in the traditional forms of charts, booklets in longhand, art models and paintings, written encyclopedic type descriptions and so on. There were many wallcharts in students’ handwriting showing the causes and effects of water pollution as experienced in the own local community.

Reports from the schools were always positive, both for the lessons and the external inputs. ICT here was not in centre stage [13] but nevertheless was shown to be a powerful tool or tools in the learning process and many teachers praised the Something Fishy web site [10] both for the lessons and the resources available
for completing the project product. Many teachers spoke of the integration and cross curricular aspect of the work and the tactile experiences of fish and river life. Enjoyment by the participants, increased appreciation and respect for the river and the fish life, and indeed publicity and good promotion of the aims and objectives of the Central Fisheries Board sponsors were some of the benefits. Some schools have joined in with local community efforts to clean local rivers of rubbish and other environmentally damaging material in an attempt to secure the wellbeing of the river life.

6. Conclusion

In ‘Preparing Schools and School Systems for the 21st Century’ one of the sixteen characteristics perceived by the authors as important in preparing students for a global knowledge / information age is ‘a project based “curriculum for life” which engages students in addressing real-world problems, issues important to humanity, and questions that matter.’ [13] Something Fishy is one such example. Something Fishy in classrooms around the country is influencing not only SESE in the classrooms but helping to change the attitude of local communities in the care of the local environment. Such influence is frequently one of the positive outcomes from school environmental projects. The Something Fishy project also demonstrated how much integrated and seamless in learning and teaching ICT has become in the last decade in so many of these classrooms.

References

1. Captains Courageous (1937) Directed by Victor Fleming. USA. Metro Goldwyn Mayer [Film: 35 mm]
10. Something Fishy Web Site: <http://www.somethingfishy.ie>
13. IFIP (2005) *The Stellenbosch Declaration: ICT in Education: Make it Work*