TITLE

Our school, our environment: using technology to raise environmental awareness

VISION (ASPIRATION AND AIMS)

- to integrate all students into the larger school environment
- to bring together the school community
- to raise awareness about low-carbon schools, carbon output and the environment

BACKGROUND MOTIVATION STATEMENT

There is a generally accepted need to raise environmental awareness among young people. For this to be effective students need to engage in work with authentic problems in a realistic context. Engaging with the community is also important. But for this to be possible the work should link with the curriculum and existing teaching practice in the school and make use of attractive technologies that offer new ways of representing and managing energy use.

NARRATIVE

I am initiating a curriculum mapping process with my fellow teachers in the school to identify a specific project around environmental awareness and plan cross-curricular activities in the school in the coming term. In chemistry we are looking at different types of plastics. In mathematics we are analysing the actual and projected energy use of the school. I am tasked with recycling. We establish an area on the school learning platform where progress on the project can be tracked. We also use this as a place to plan our contacts with the local community who could be invited to speak or respond to questions via email and to identify video resources which could be used.

I start with a discussion in my classroom around the environment and ask students to research recycling in the community and their own homes, offering support as required.

My class works together on data gathering and presentation, making use of tools that help them to do this in a standard way and that perform immediate calculations on the data. They also interview people from within and outside of the school. My maths teacher colleague is fortunate to have access to real-time active monitoring devices in the school that feed information into the website. We also use iTEC tools to estimate our class' and school's carbon footprint.

Using the area on the platform prepared for this project, I help my students create a web site about their carbon usage and other environmental impacts of the school. We use animation, audio, video and photography to create digital stories to represent our consumption. They also use the materials to prepare printed materials and posters.

At the entrance to the school there is now a live display with updated information about school recycling

Finally, I invite a colleague from a neighbouring school to see what we have done. This has become the basis for collaborative activities between the schools. This leads to distribution of posters and presentations during students' assembly, and eventually to a special day for the schools in the area to come together to discuss their work. We are really pleased that all the schools get awarded an Eco-School badge! This gives us enough publicity that we are able to offer a consultancy to clients who want to carry out an environmental audit on their own activities.

Our school, our environment: using technology to raise environmental awareness

TREND/S

Low carbon teaching - This trend is associated with much wider trends, from climate change to the shift towards more sustainable lifestyles and alternative sources of energy. Schools and teachers are increasingly encouraged to incorporate these themes in curricular activities, discussions and tasks with learners.

Schools coming together - There is a tendency in several countries towards setting up large clusters of schools. This is happening for example in Italy, Portugal and in the UK. These clusters include primary, lower and upper secondary schools and can have up to several thousands of students. Advantages of this trend are: economies of scale and reduced costs, easier transition from primary to secondary, teaching by stage rather than age. Disadvantages are: closure of local small primary schools, difficulty of managing such large populations of students and teachers, and risks of depersonalised, standardised teaching and learning.

KEY CONCEPTS

School clusters, low-carbon schools, collaboration across ages and stages, game creation and sharing, flexible learning spaces

ENVIRONMENT

- individual school and possibly network of schools
- home for individual or small group work
- project website

PEOPLE & ROLES

- technical support for the attractive devices, access to servers, etc.
- teachers inspire and instruct students
- organising teacher coordinates and manages the cross-curricular activities and manages the data and text collection
- other teachers lead activities in different subject areas and coordinate findings or results

INTERACTIONS (INCL. PEDAGOGIES)

- scenario starts with interactions within one class and gradually moves outwards
- sharing of resources and activities with other schools as possible
- collaboration between classrooms, subjects and teachers

ACTIVITIES

- cross-curricular planning of a project to involve different subjects, teachers and students in investigating and understanding environmental issues and reducing the carbon footprint of the school
- data collection and analysis of carbon output using monitoring tools
- creating and using website where students can easily input data, video, documents, etc. Similar to digital storytelling
- sharing findings and collaborating with other schools through these activities at a local or international level

RESOURCES (INCL. TECHNOLOGIES)

- some kind of automated portal generation "upload your text / pictures / videos etc". To contain forums and interaction
- a range of online video resources related to the environmental theme
- cameras, mobile devices with video capabilities,
- wiki/forum where cross curriculum activities are conducted
- data loggers
- game authoring applications
- authoring platform for Android application
- for data collection, ideally have a monitoring device that feeds into the school website and prepared spreadsheet-type functionality where the students can enter data and get results