

Duration

The length of time that this activity will take is at the discretion of the teacher. It should not take any longer than a normal design project as the pupils can interact with the web tools outside of class time.

Pedagogic Rationale for Activity/ Research Testing Results

“The set of artefacts contained in a portfolio, together with reflections and annotations, tell a unique story about some aspect of the owner’s “learning” by helping the owner make visible and explicit her knowledge, experience and growth” (Chen et al. 2005). This is of huge benefit to the pupils for the same reasons as a [mirror portfolio](#). The benefits of an ePortfolio can be magnified through the communication services supplied by the features of a blog, these benefits include:

- “the exchange of comments between the author and teacher, mentors, or coaches;
- The discussions and peer review with classmates, colleagues, or friends;
- The feedback for specific questions and concerns;
- And the personal reflection on work in progress or completed” (Greenberg 2004)

Prerequisite Knowledge

It would be beneficial for the pupils to have completed a design task in the past before attempting this activity as it would mean that the pupils could interact with the blogging software more effectively, due to having more time to allocate to the software rather than trying to learn about the design process and the software at the same time.

Aim of Activity

To design and make a project collaboratively using web based tools

Objectives	Assessment
<ol style="list-style-type: none"> 1. Pupils will design and make an artefact given a design brief 2. will use web based tools to analyse a brief and investigate aspects of the brief in a collaborative and efficient manner 3. Pupils will present their ideas for peer review on their blogs 4. Pupils will document their interactions with the design process through the medium of a structured ePortfolio created using blogging software 5. Pupils will reflect upon their learning/progress and the learning/progress of their peers 	<ol style="list-style-type: none"> 1. Teacher and peer assessment of structured ePortfolio and completed artefact. Commenting on posts throughout the process 2. Review of the class wiki and social bookmarking repository to assess how much of a contribute each pupil gives to the class analysis and investigation 3. Teacher judgement of the honesty and frequency of pupils' blog posts and the extent to which the pupils comment and respond to comments on both other pupils' blogs and their own. 4. Teacher observation of the frequency of blog posts, perceived engagement in the activity and the depth of the pupil reflection posts throughout the process 5. Critique of pupil reflections and the level of constructive comments given by each pupil

Assessment of Activity

This activity can be assessed in the same way as you would assess any design activity. You will, however, now have a lot more information about the pupils' designs than was previously available without physical portfolios. A major advantage is that you will be able to see what the pupil did and when he/she did it, which will show you how they progressed from the first to the last day of the project.

Teacher/Pupil Activities

1. Upload the design brief to the **classroom blog** for the pupils to see
2. Ask the pupils to copy the design brief from the classroom blog to their **own blog**. This will mean that the pupils will always have the design brief in mind
3. Look at the design brief in class and ask the pupils to analyse it and add their analysis to the class wiki (named "**Analysis of Design Brief**")
4. Ask pupils to write a **reflection on the Analysis of the Brief** which they have just completed as a group
5. Once the pupils have finished analysing the brief tell the pupils what you expect from their research and investigation. Ask the pupils to begin their investigation using the internet and to bookmark useful sites in the **class social bookmarking repository**
6. Once the pupils have researched and added an appropriate amount of websites to the class repository (2-3 websites each) ask the pupils to contribute to a class wiki page (**named "Research and Investigation"**) in which the pupils write a report of their joint investigations.
7. Ask pupils to write a reflection on their research and investigation which they just completed as a group (example)
8. Ask pupils to design three possible solutions using the class research to inform their solutions.
9. Once the pupils have designed their **possible solutions** ask the pupils to post them onto their blogs for peer review. Encourage pupils to review each other's designs to ensure that the pupils see do not make mistakes that could be avoided if a pupil informs the pupil in question of them.
10. After posting their possible solutions and receiving feedback from their classmates, ask the pupils to design their **final solution** and post it on their blog. Again ask the pupils to comment on each other's final solution to pick out problems that may occur and solutions that the pupils may see.
11. Once the pupils have decided their final solutions ask the pupils to write a **reflection on their possible and final solutions** and how they felt about their peers' comments
12. Ask the pupils to draft their **working drawings** and again upload them to their blogs for review.
13. Once the pupils have received reviews and comments make any changes to their working drawings and re-post them if required
14. Ask the pupils to manufacture their solutions on Solidworks in class. After each lesson the pupils must **post their progress** on their blogs
15. When the pupils are finished their artefact ask them to **evaluate** their solution using whatever criteria you deem appropriate

Important Teaching and Observation Points

- Duffy (2007) found that there are some key points to maintaining pupils' engagement in written and illustrative reflection, one of which was "expressed reflection as a core expectation" (Duffy 2007). Reflection is a key element of this activity and it is important that the pupils are aware of its important and more significantly that reflection is explained to the pupils at the beginning of the activity
- Encourage pupils to include text, pictures, voice recordings and videos in their reflections if they wish to do so. Be clear from the offset that this activity is not a test of their writing skills but an encouragement for them to see the value of reflection and cooperation.
- It is important to ensure that all pupils update their blogs throughout this activity. This will be clear through the use of an RSS aggregator and also the timestamps attached to the pupils' blog posts.
- Encourage pupils to include text, pictures, voice recordings and videos in their posts. It would be beneficial for each pupil to have access to a digital camera, be it a class camera, their own cameras or their mobile phones as it would encourage the pupils to take pictures, especially during the manufacture stage. Ensure that if digital cameras are being used, in the classroom, that the pupils only take pictures of their own work and not the work of others and also that the pupils do not take pictures of each other.
- Be clear from the offset that this activity is not a test of their writing skills but an encouragement to them to see the value of recording progress, reflection and cooperation.
- As the teacher it is your responsibility to set an exemplary standard for the pupils. This could be achieved by commenting on every pupil's posts to show what meaningful engagement should be like.

Resources

Organisational Resources

- Project Brief
- Design Process Handout
- Access to computer room/ school laptops for pupils
- Materials required for the manufacture of the pupils projects

Technological Resources

- Classroom Blog
- Analysis of Brief Wiki Page
- Social Bookmarking Repository
- Research and Investigation Wiki Page
- An individual blog for each pupil
- Digital Camera(s)
- RSS feed aggregator for teacher

This plan has been created by Paul Leacy (0744034) in 2011 as part of his Final Year Project in the University of Limerick as part of the B.Tech Ed course in Materials and Construction Technology.