



• An easy to use authoring tool enables structured and resourced activities to be distributed electronically to groups and individuals.



Preparing the structure of the activity using the authoring tool

Explaining what's working well and what needs further development

• Learners' multimedia e-portfolios automatically build themselves during the progress of an activity, effectively evidencing real, valid subject capability.

• The majority of digital devices can be used to generate and record evidence that can be viewed on-line anywhere, anytime, without the need for the host software.



Recording photographic evidence in a science experiment

• New approaches to on-line assessment using multiple comparison holistic judgements provide a more reliable collective professional judgement.



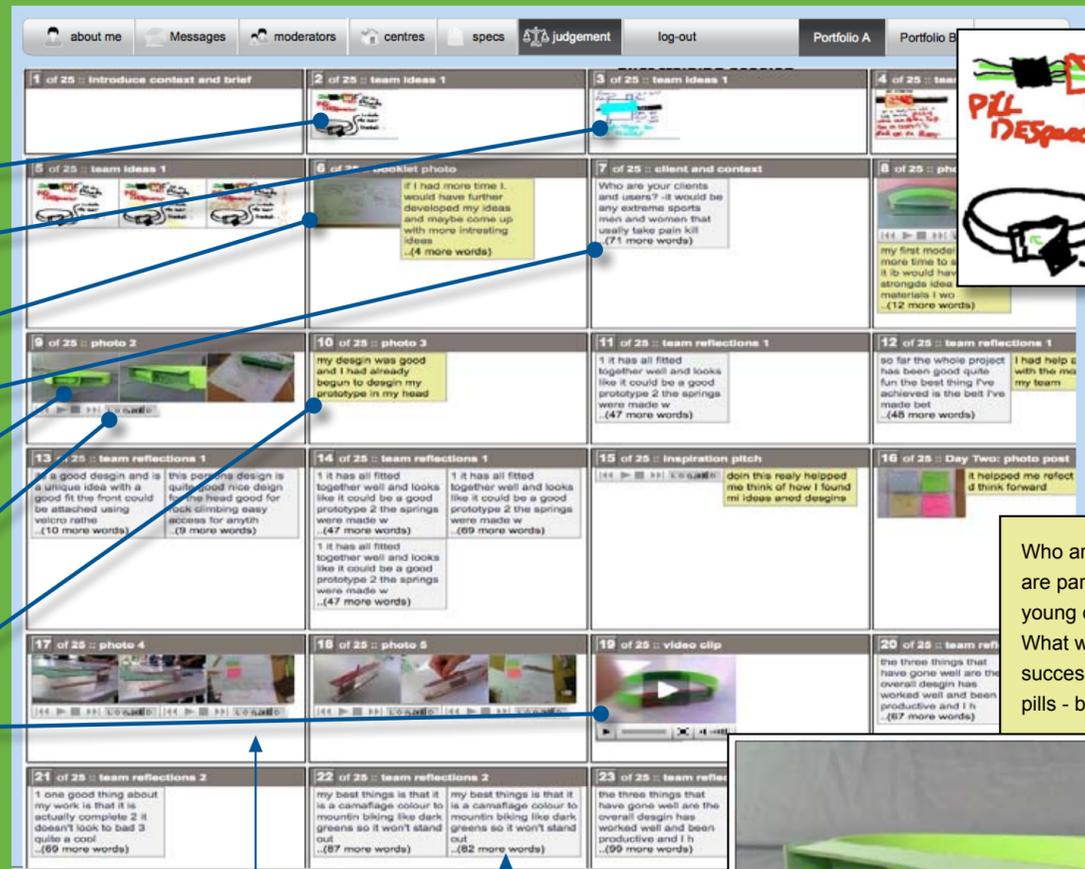
Collecting data as part of geography fieldwork

Celebrating the outcomes of a successful design and technology project



The anatomy of an e-scape digital portfolio

- On-screen sketches
- Suggestions from partners
- Photos of development drawings
- Statement of intentions
- Photos of 3D models
- Audio recordings of reflection and intended actions
- Reflective analysis and evaluation at end of projects
- Video presentation

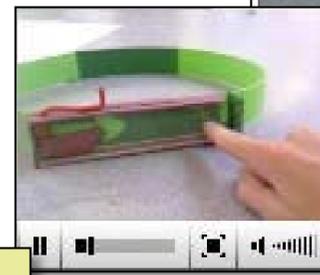


Clicking on photos and videos enlarges them over the top of the portfolio

Rolling over boxes enlarges text entries

At the end, looking back through the portfolio to analyse and discuss the process

Seeing my team-mates' comments really helped me decide what I had to change in my design.

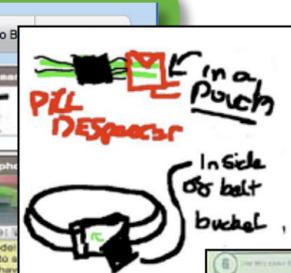


Recording a 30 second video to explain how the design would work



Photographing a developmental model as it progresses

Who are your clients and users? My clients are parents of young children. My users are young children. What will your product have to do to be successful? Be to a child's taste - store the pills - be small and easy to open.



The task: to design a pill organiser and dispenser

First ideas sketched on the PDA

Second thoughts explored on paper and then photographed

Reviewing and recording key decisions

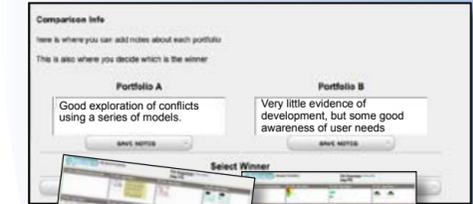
Assessing performance

When learners' work is displayed in these portfolios, all the work (i.e. every portfolio in the system) is available to all markers, simultaneously, wherever they have broadband internet access.

The work could be marked in the conventional way, with allocations of marks based on a mark scheme. But an alternative approach (Comparative Pairs judgements) is made possible by the web-portfolios. Judges are presented with two portfolios (A and B) and make a holistic judgement about which of the two represents the more capable performance.

- The approach depends on three things:
- making holistic judgements of excellence based on a combination of key criteria
 - having multiple judges to decide between many pairs of portfolios
 - comparing each portfolio with many others (typically 20).

This combination of multiple cross-checking produces very high reliability in the resulting assessments.



The Authoring Tool

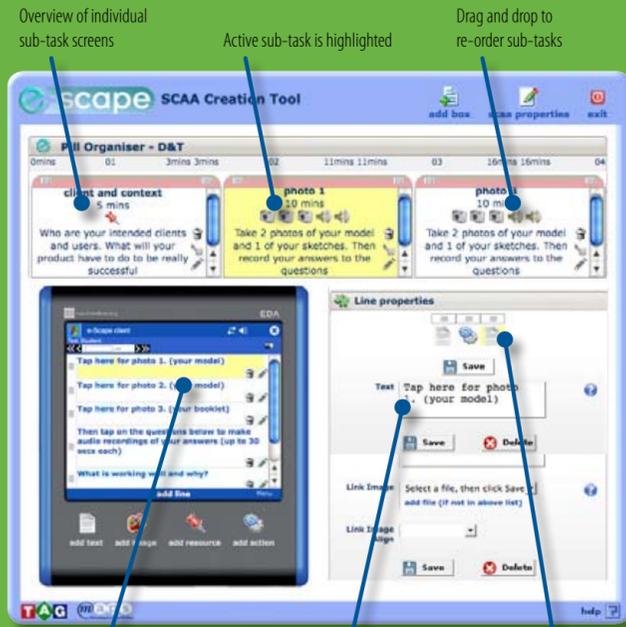
The authoring tool uses simple drag and drop to enable teachers to build and choreograph sequences of activities that require learners to study digital resources, respond to questions and undertake practical activities and record audio, photographic or video evidence. Activity times can be set, varied to respond to changing circumstances or left open.

The system encourages collaborative learning in which students can view and comment on responses made by fellow learners. The process of authoring learning experiences in this way often helps teachers to develop classroom activities that emphasise process as well as the acquisition of knowledge.

A parallel digital management system enables the teacher to personalise the sequence of activities to individuals or groups and to control the running of the e-scape sessions. A teacher can centrally monitor learner responses as they are uploaded.



Sub-task screen as it appears on the device



Each line is an 'item', i.e. an instruction

Text for each line entered here

Upload photos, audio, video resource files

The e-portfolio

Most e-portfolios are constructed retrospectively, at the end of a piece of work. As a result the contents are often focussed on specific assessment objectives rather than the developmental processes applied by the learner.

The e-scape portfolio is assembled automatically and dynamically, i.e. 'on the fly' as work is undertaken. This provides considerable insights into the learner's on-going analytic, creative and decision making thought processes, revealing their true subject capability.

While initial trials focussed on GCSE design and technology, subsequent work within geography and science has been equally successful, and the approach is now being applied to other subject areas and qualification assessments.

Multiple digital devices

E-portfolios usually include files that require a teacher or examiner to have their own copy of the software used to create them. This places enormous restrictions on the programs that can be used, and usually results in reinforcing the idea of a 'final presentation' approach created in PowerPoint or Acrobat. By contrast e-scape is built on a web-browser and is capable of enabling the viewer to see the contents of a wide range of multimedia file types without the need for separate host software.

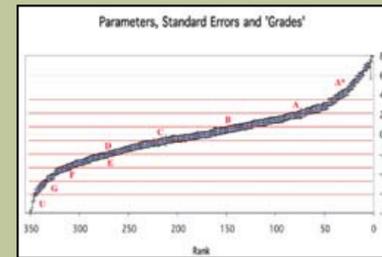
Early versions of e-scape required learners to use specific PDA (personal digital assistant) devices, but a new system will allow learners to use and move between a wide range of digital devices by means of a personal USB stick.

The goal is to put learners in charge of the technology, leaving teachers free to teach and support the learners.



Pairs judgements

The web-based, multimedia portfolios that are produced can now be assessed in a completely new way that does not involve traditional point-by-point 'marking' and moderation procedures. E-scape uses a technique first developed in the 1920s in which a team of examiners make multiple holistic comparisons of portfolios, from which it is possible to determine a rank order, and subsequent grade for each candidate.



Through a series of trials monitored by QCA and Awarding Bodies, we have shown that this method produces a more reliable and confident assessment of a learner's capability and a better reflection of the collective professional judgment of teachers and examiners. Moreover, by comparing each portfolio with many others and by using multiple judges, the system enables problematic portfolios and non-consensual judges to be reliably identified.

Continuing Professional Development

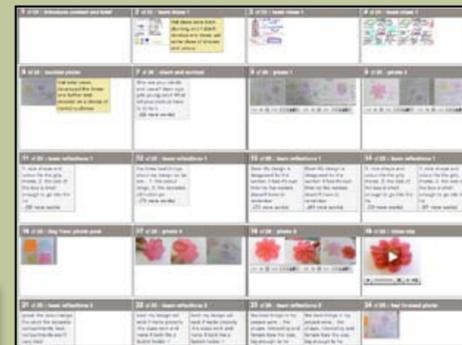
E-scape enables teachers to create and manage their own learning activities. Moreover the assessment process based on holistic professional judgement using the e-scape tools and methodologies proves to be a liberating and stimulating experience.

Teachers are able to focus on developing the key competencies of their subject as outlined in the National Curriculum 'Importance of' statements. The authoring tool empowers them to review new and potentially more successful sequences of activity in the classroom. Finally, participation in the assessment judgement process provides unparalleled insights into national standards and approaches.



Developed for teachers, by teachers

While supported and funded by central government, the e-scape project has been developed at every step with classroom teachers, awarding bodies, technology groups, and above all, with learners. As such it has responded directly to grass-roots concerns about the quality and validity of coursework assessment, about the need for flexibility in network systems, and about the need to restore the professional confidence of teachers in creating, managing and assessing learning.



Portfolio A

Steady growth evident from boxes 2 - 6

Effective use of 3D modelling in boxes 19 - 24

Shows awareness of practical and emotional user needs in 6 - 7 and 11

Reflection boxes show good grasp of own strengths and weaknesses

Portfolio B

A more technically aware solution

Initial ideas (boxes 2 and 6) lack imagination and growth

Experimental modelling tries to resolve mechanical requirements, but with only partial success - see video



Which is the winner? Portfolio A or Portfolio B?



Engaging activities
Dynamic e-portfolios
Reliable assessments



What is it?

Project e-scape is a research and development project based in the Technology Education Research Unit (TERU) at Goldsmiths University of London. The project is funded by DCSF through Becta and run in association with Awarding bodies, QCA, subject associations and schools. It concerns the assessment of learner performance on-task in real activities.

E-scape uses emerging digital technologies to enable learners to build - dynamically - an on-line e-portfolio of their performance, demonstrating their capability as it emerges through the activity. E-scape also provides teachers with a radical and simple means to assess the evidence of capability in the e-portfolios.

The project commenced in 2003 under the title 'Assessing design innovation' and since 2005 has progressed through a number of phases of development in which the scale and potential use of digital technologies has widened. In 2009, Awarding Bodies will run national awards using the e-scape system.

Contacts

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How it works

Learners undertake engaging activities that inspire them to create their very best work in a range of subjects, both as individuals and in teams. These activities are created by teachers and/or Awarding Bodies in an electronic 'authoring tool' which is capable of building high-stakes assessment activities.

As learners undertake their tasks the system collects all kinds of performance evidence - writing, sketching, data handling, photos of models, audio and video - uploaded automatically from PDAs, digital pens, mobile phones, cameras, PCs, etc., and learner's digital portfolios emerge dynamically in a secure website where they can be viewed and assessed anywhere, anytime.

The system facilitates the application of a different and more secure approach to assessment using comparative pair judgements.



The e-scape portfolio is assembled 'on the fly' as and where the work is being undertaken