Supporting the Extended Project Qualification (EPQ)

Elizabeth Swinbank, University of York
The Project-shaped space

Why do project work?

- Pursue a special interest
- Inspiration/motivation
- Link to future study/career
- UCAS form/interview

Skills development
- independent study
- time management
- research
- critical thinking
- extended writing
- oral communication ...

but project work is disappearing from science A-levels ...
The Extended Project Qualification (EPQ)

June 2012
EPQ: 28,572 entries  A-level physics: 34,509 entries

AQA is the largest entry, Edexcel about 7.6k, OCR the smallest
The Extended Project Qualification (EPQ)

EPQ = 0.5 GCE A-level = (up to) 70 UCAS points

Graded A* - E

120 Guided Learning Hours over 1-2 years

Scope for a wide variety of projects

Assessment criteria relate to quality of work rather than specified content

Supervised and marked by teachers

Moderated and awarded by AQA, Edexcel, OCR

Welcomed by Universities and DfE
The Extended Project Qualification (EPQ)

“The EPQ received praise for developing many of the academic skills identified as problems… Interviewees thought that one benefit of the EPQ was that it encouraged reflection across a wide range of content and issues.”

“We’re very keen on the extended project, and very, very positive about it. We make alternate offers sometimes, we might make, say, an A*AA offer excluding the extended project, and then an A*AB offer including the extended project, and give somebody an either/or. The extended project [provides the] thinking skills that we’re interested in.” (Admissions Staff, HEI, England)

Higton et al 2012 *Impact assessment of A-level reforms*
A study commissioned by Ofqual
The Extended Project Qualification (EPQ)

“[The EPQ] develops and rewards creative and independent thought as well as research and planning. It represents the best of education, in that it is rigorous and demanding as well as adaptable and fun.

“Universities speak positively about the EPQ, and recognise it gives applicants the chance to develop research and academic skills that are highly relevant for study at higher education.”

Elizabeth Truss MP
Reforming qualifications and the curriculum to better prepare pupils for life after school
17 March 2013 Speech delivered at IOE, London
The Extended Project Qualification (EPQ)

Edexcel Project Units

- Written reports - Dissertation
- Written reports - Investigation/field study
- Performances or events
- Artefacts

AQA and OCR have general criteria that cover all types of project
Edexcel Unit 2: Investigation/field study

Growth and potential

Entry numbers in Unit 2
- Now 600

Unit popularity – only 8%

2008 2009 2010 2011 2012

Unit 1
Unit 2
Unit 3
Unit 4
The Extended Project Qualification (EPQ)

A definition of extension

- Broadening Skills
- Deepening Understanding
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For an Investigation/Field study, the 120 GLH includes

- preparation for project work (ideally a taught course)
- literature research and review
- experimental/field work
- data analysis
- discussion and evaluation
- report writing

NB by no means all 120 GLH is spent in the lab
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Examples of physics-based Investigation EPs

How does solar activity affect weather?

Do ‘sharkskin’ swimsuits give the wearer an unfair advantage?

Would reclaiming and reusing the rare earth elements from iPads be economically viable?

Over its working lifetime, does the energy output from a photovoltaic solar panel exceed the energy required to make, install and operate it?

NB Successful projects do not have to involve elaborate kit
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Examples of physics-based Dissertation EPQs

Why did the *Titanic* sink?

Are wind turbines a good solution to the energy crisis?

Can we justify human space exploration?

Is it possible to believe in God and the Big Bang?

Were the moon landings fake?

Are we alone in the universe?

How did the Copernican paradigm shift affect subsequent developments in cosmology?

Is wi-fi safe?
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Examples of physics-based Artefact EPQs

- Design, make and test a sundial (spectrometer, telescope, ...)
- Is it possible to revive the engine of a Ferguson TEF 20 tractor?

Examples of physics-based Performance/Event EPQs

- Explore an incident or issue through drama
  (c.f. Trial of Galileo, Heisenberg’s visit to Bohr in Copenhagen, ...)
- Explore a concept through an exhibition of images
  (e.g. images on many scales)
How are EPQs regarded by physics lecturers and admissions tutors?

Positive contribution to the Personal Statement

Discuss at interview

Include in UCAS offer

  e.g. make a ‘discounted’ offer

Particular types of EPQ favoured (or otherwise) by physics depts

Opportunity to build on EPQ during undergraduate work

...?
How might physics departments support EPQs as part of their outreach?

Source of information/advice

outreach officer? HoD? ‘world expert’?

Access to academic libraries

Access to laboratories/apparatus

NB safety and supervision

Involvement in on-going project work

NB students must have ownership of their EPQ

...?