PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

PPLATO
Promoting Physics Learning and Teaching Opportunities

Mike Tinker
Department of Physics
University of Reading

PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

The Consortium Partners

- Brunel University
- University of Newcastle
- Open University
- University of Plymouth
- University of Reading (Lead Institution)
- University of Salford

PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

Prime concerns of PPLATO

- Teaching mathematics to physics undergraduates
- Widening participation in undergraduate physics

Using new learning technologies to address the two central issues above

PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

Pedagogic issues

- Can text-intensive subjects, such as mathematics and physics be presented effectively on screen?
  - opening up online and distance teaching
  - textbook design for screen use
- To what extent can CAA technology help with assessment?
  - formative, summative, mastery learning

PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

Scope of PPLATO resources

- A comprehensive flexible digital resource for the support of physics and mathematics teaching for physics undergraduates at Level 0 and Level 1
- Includes materials for teaching, testing, diagnostics, practice and tutorial support
- Includes a Foundation Programme

PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

Brief description of resources

- **h-FLAP**: A large hyper-linked teaching resource of Level 0 and Level 1 physics and mathematics, with links to a hyper-glossary.
- **Maths for Science:** A hyper-linked teaching resource of Level 0 mathematics for science students.
- **Interactive Mathematics**: A hyper-linked tutorial package of Level 0 and Level 1 mathematics topics for science students.
- **h-Tutorials:** A hyper-linked tutorial package of Level 1 and Level 2 mathematics topics for science students.
- **Computer assessment:** A computer assessment package to generate an effectively unlimited question bank with intelligent feedback on Level 0 and Level 1 mathematics, useful for diagnostics, monitoring and for formative or summative testing.
- **Foundation programme:** A complete flexible foundation programme with options to incorporate the individual resources above, supported by face-to-face or on-line tuition and with full-time or part-time study.

PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

Highlights

- Designed for screen use, including diagnostics, teaching text, tutorials, formative and summative tests
- Computer generated questions with intelligent feedback creates a huge question bank with teaching support
- Enables Mastery Learning approach
- Flexible use by teacher and student

PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

Assessment in PPLATO

- Teaching texts and tutorials have embedded formative questions with rapid feedback & under student control
- h-FLAP exit tests can be used in formative or summative assessment
- Unlimited CAA with intelligent feedback can be produced for formative and summative use and mastery learning

PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

Integration of resources

- Five resources, with different styles, accessed via an interface (HTML/BB)
- Teaching, diagnostics, tutorial support, practice and assessment elements
- Flexible interface, can link a teacher's course to the PPLATO resources allowing flexible learning for students

PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

The Foundation Programme

- In physics and mathematics, to widen participation in undergraduate physics
- Delivery face-to-face or on-line, FT/PT
- Available to HEIs within their accredited programmes or to individual students preparing for access
- Provides a benchmark programme for university physics/engineering entry

PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

Resource demonstration

- h-FLAP (will have multimedia in future)
- Maths for Science
- Tutorial materials
- Summative and formative assessment
- Resources

PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

Implementing the resources

- Departments select those parts that they wish to implement and in what way
- This may vary from full course design to background teaching support
- Departments agree to evaluate those resources used (instruments available)
- Resources supplied free to sector with liaison on implementation & evaluation

PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

Implementation pack contents

- Diagnostic tests at Level 0 and Level 1 in maths and physics
- Teaching resources
- Self-assessment quizzes based on computer testing tool
- Foundation programme
- Evaluation materials

PPLATO PROMOTING PHYSICS LEARNING & TEACHING OPPORTUNITIES

Further enquiries

- e-mail is pplato@rdg.ac.uk
- website is www.pplato.rdg.ac.uk
- m.h.tinker@rdg.ac.uk