biomathtutor

- the next steps
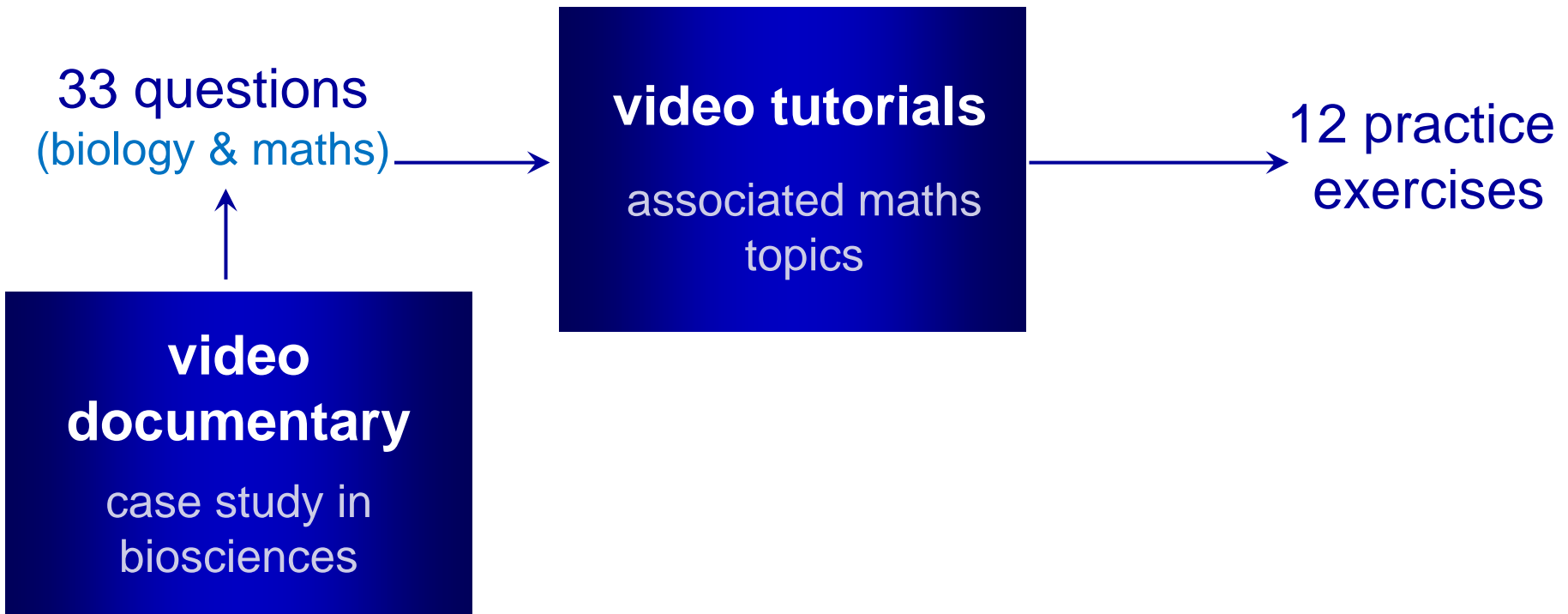
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biomathtutor

33 questions
(biology & maths)

video tutorials

associated maths topics

12 practice exercises

video documentary

case study in biosciences

HE Academy e-learning research project

AIMS:

1. Investigate impact of ***biomath**tutor* on mathematics skills competencies of bioscience undergraduates and on their ability to transfer and apply these skills to different biological contexts

2. Identify and evaluate strategies aimed at embedding ***biomath**tutor* into current T & L practices to develop a blended learning experience

Key research questions

❖ Contextual problem-solving model

➢ Will its application to mathematics e-learning facilitate improvements in students' knowledge and skills?

❖ Transferability of knowledge & skills

➢ Will students demonstrate a capability to transfer their mathematics knowledge & skills to new biological contexts?

❖ Integrating into bioscience curricula

➢ How might tutors blend *biomath*tutor with more traditional teaching practices?

Key research questions

❖ Student motivation

  ➢ What motivates students to use such resources? Learning model adopted? Quality of resources? Link to specific support strategies, e.g. PAL? Link to assessment?

❖ Potential barriers to adoption

  ➢ What are these and how might they be overcome?

❖ Evaluation of **biomath**tutor

  ➢ What are students' and their tutors' reactions to the various components of **biomath**tutor?

Participants

❖ Tutors

  ➢ In 14 universities

  ➢ 7 pre-1992 + 7 post-1992

❖ Students

  ➢ Potentially >2000

  ➢ Stage 1 (+ some Stage 2)

Research design

- ❖ Mixed-methods: quantitative & qualitative data

- ❖ Part 1: Intervention experiment
  - ➤ Pre-test: 20 questions; 45 min;
  - ➤ Interventions:
    - Maths e-learning + biological context (***biomath***_tutor_)
    - Maths in biological context, <u>no</u> e-learning (***biomath***_tutor_ workbook)
    - Maths e-learning, <u>no</u> biological context (***math***_tutor_)
    - No intervention (control)
  - ➤ Post-test: 20 questions; 45 min;

- ❖ Part 2: Evaluation of ***biomath***_tutor_
  - ➤ Questionnaire
  - ➤ Interviews with individual tutors
  - ➤ Focus groups with students