Liminal Design Practices Shaping the Cambridge Mathematics Framework

Learning from and contributing to an understanding of boundary objects in mathematics education

Potential users of the Framework

- **User category**: Time Frame
  - Curriculum developer: Using curriculum reviews may occur in 3–10 year cycles
  - Resource/teacher: Schemes of work developer: Medium: 3 months to a year
  - Teacher: Short, a few days to a few weeks

Liminal design practices*

- **Negotiation**: with team members, researchers, and potential users
- **Collaboration**: on proof-of-concept projects that help to develop features of the Framework to support key uses
- **Evaluation**: and feedback of work in progress so that we can refine and adapt our work according to what will be useful and used (Wenger, Trayan, and de Laat, 2011)

Central object of the design process: Design tools

- User research
- User interface mockups

Potential outcomes: Delphi study

- Evaluating the structure and theoretical foundations of the Framework (Clayton, 1997)
- Mediated conversation among experts to find areas of agreement and disagreement
- Round 1 complete: Round 2 in progress
- Feedback on theoretical basis for design and the structure of the Framework
- So far, positive feedback on:
  - Approach to transparency
  - Application of theory to design
  - Usefulness of our focus on connections through waypoints and themes*
  - The quality of the research summaries
  - The visualisation tools are on track to making the framework useful and accessible

Preliminary outcomes: User scenarios

Textbook chapter writing example, mapping design principles to actions and outcomes

- **Design principles (broad)**
- **Design principles (specific)**
- **Design embodiment**

Discussion

- The Cambridge Mathematics Framework has many of the traits of a boundary negotiating artifact, and preliminary feedback suggests that there is potential for the Framework to be a functional boundary object.
- Next steps this year: Continuing evaluation as outlined in timeline, with feedback contributing to refinement of the Framework and the interface as it is received

Bibliography


