

eTEACHER

Empowering Energy Education

ICT in context: co-designing energy efficiency ICT-based interventions from the ground up

Ashley Morton, Andrew Reeves, De Montfort University
Richard Bull, Nottingham Trent Universtiy

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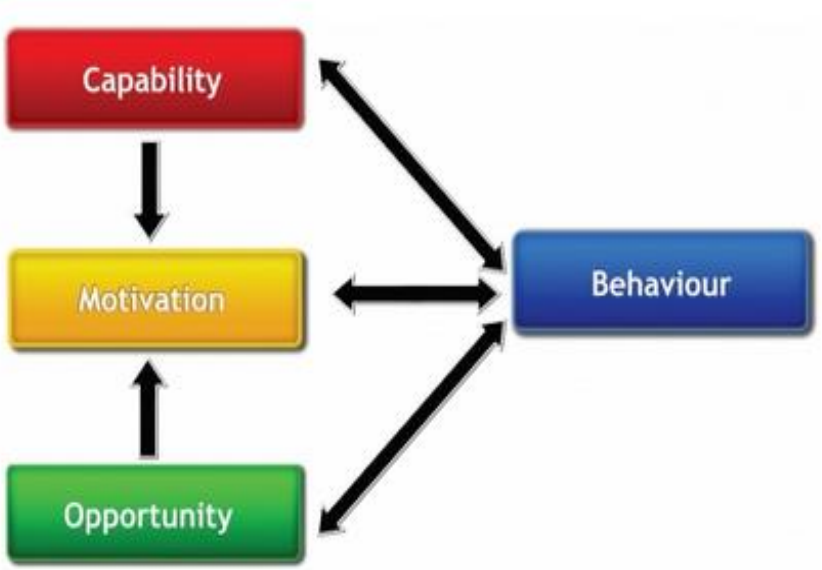
Think of the place you work…

- … and energy efficiency issues that might come up
  - Over-heating?
  - Lights left on?
- Would you install and use an App that helped to reduce these problems?
- If so, how would you want it to function to help you to learn, stay engaged and save energy?



A Rationale for an ICT-app

- COM-B model
  - **Motivate**, via gamification
  - Enhance social **opportunity**, by connecting users to information and sharing
  - Ensure **Capability**, by promoting doable behaviours



Michie S, Atkins L, West R. (2014). *The Behaviour Change Wheel: A Guide to Designing Interventions.* London: Silverback

- User-centred design
  - Ensure relevance, usability, etc.

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Empowering Energy Education

MISSION

Encourage and enable energy behaviour change of building users to save energy and optimise indoor environmental quality.

VISION

Carry out behaviour change interventions facilitated through a set of empower tools to drive informed user decisions.



eTEACHER IS DEMONSTRATED IN...



SPAIN
2 HEALTHCARE CENTRES
2 SCHOOLS
1 RESIDENTIAL BUILDING
1 OFFICE



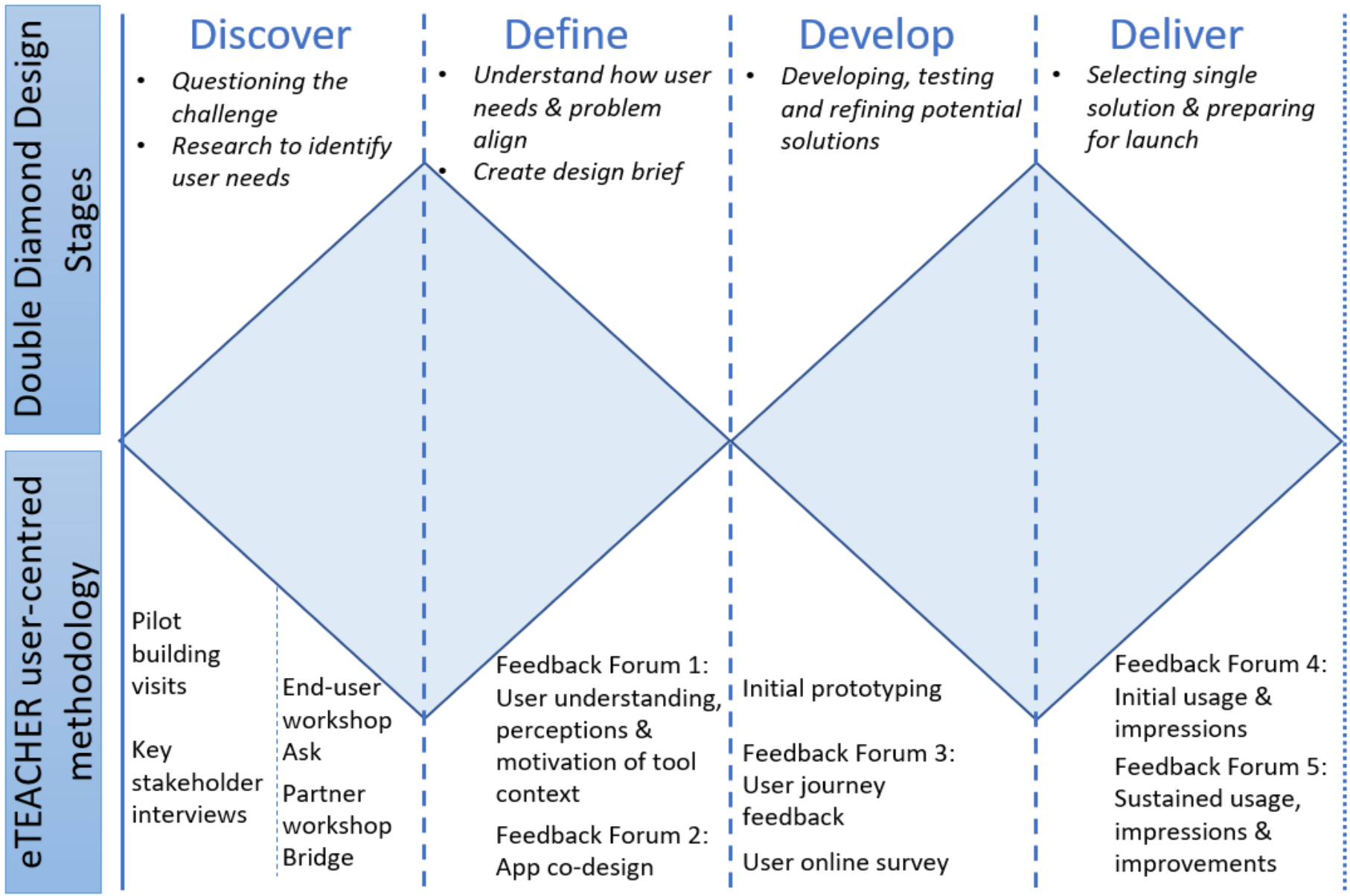
UNITED KINGDOM
1 SCHOOL
1 OFFICE



ROMANIA
4 RESIDENTIAL BUILDINGS

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User-Centred Engagement



Define stage: Co-design workshops

Held June to July 2019

- 8 sessions held
- Users from 11 pilot buildings
- 3 to 11 people per session
- 48 people in all
- Facilitated locally, materials translated



Co-Design Workshop Activities

Activity 1: Design your ideal app

- Using a blank phone screen template and 16 stickers. Discussion on best fit for building type and particular end-users.

Activity 2: Information importance

- Participants highlighted importance of priorities for nine functionalities, suited to building type and end-users.

Activity 3: Usefulness of hints

- Participants evaluated energy saving hints in terms of usefulness and possibility to act on them.

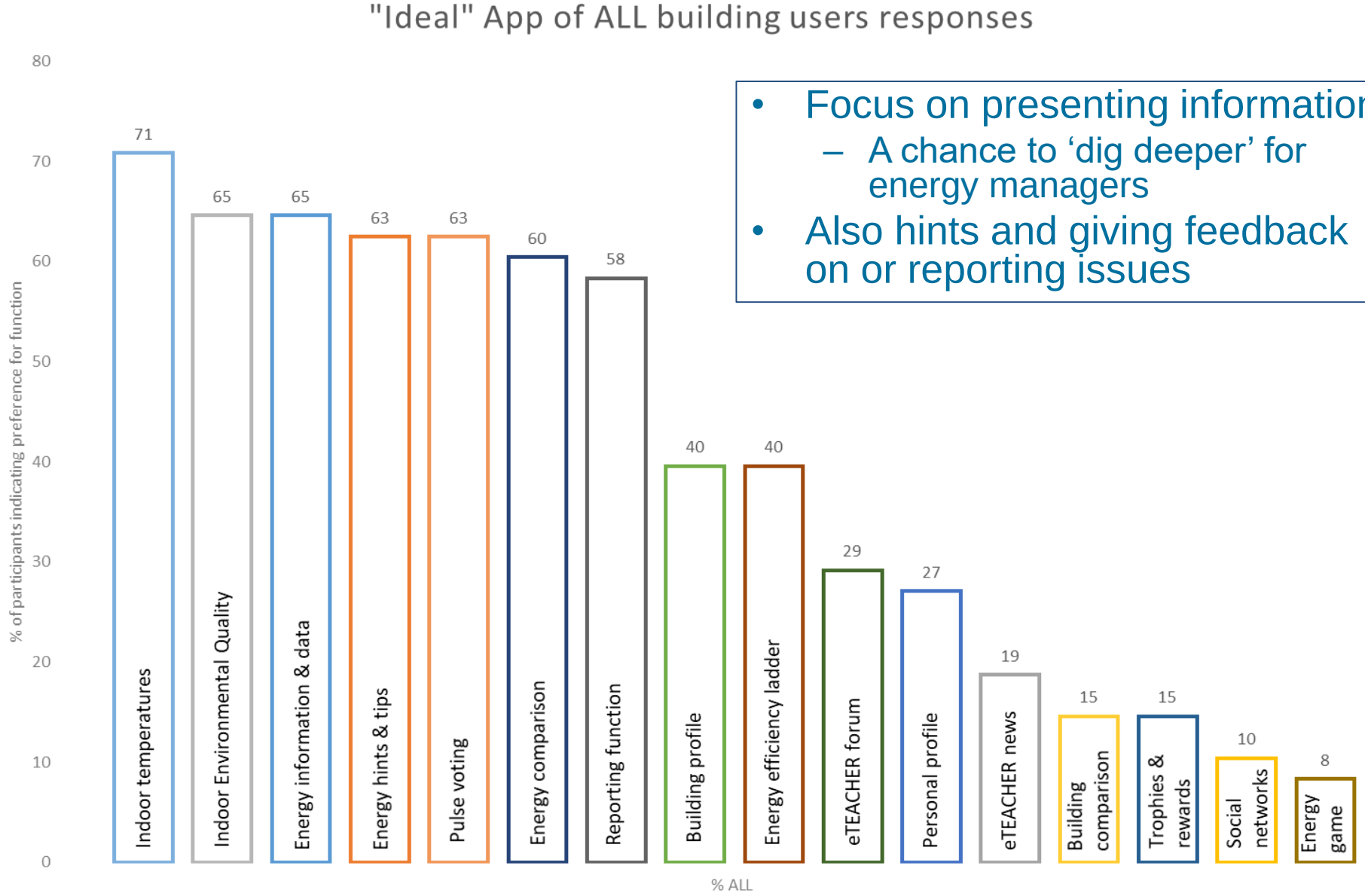
Activity 4: Visualisation interest

- Evaluating interest in visualisation options from choice of 16.

Activity 5: Engagement with missions/goals/challenges

- Participants evaluated energy saving 'missions/goals/challenges' in terms of usefulness and possibility to act on them.

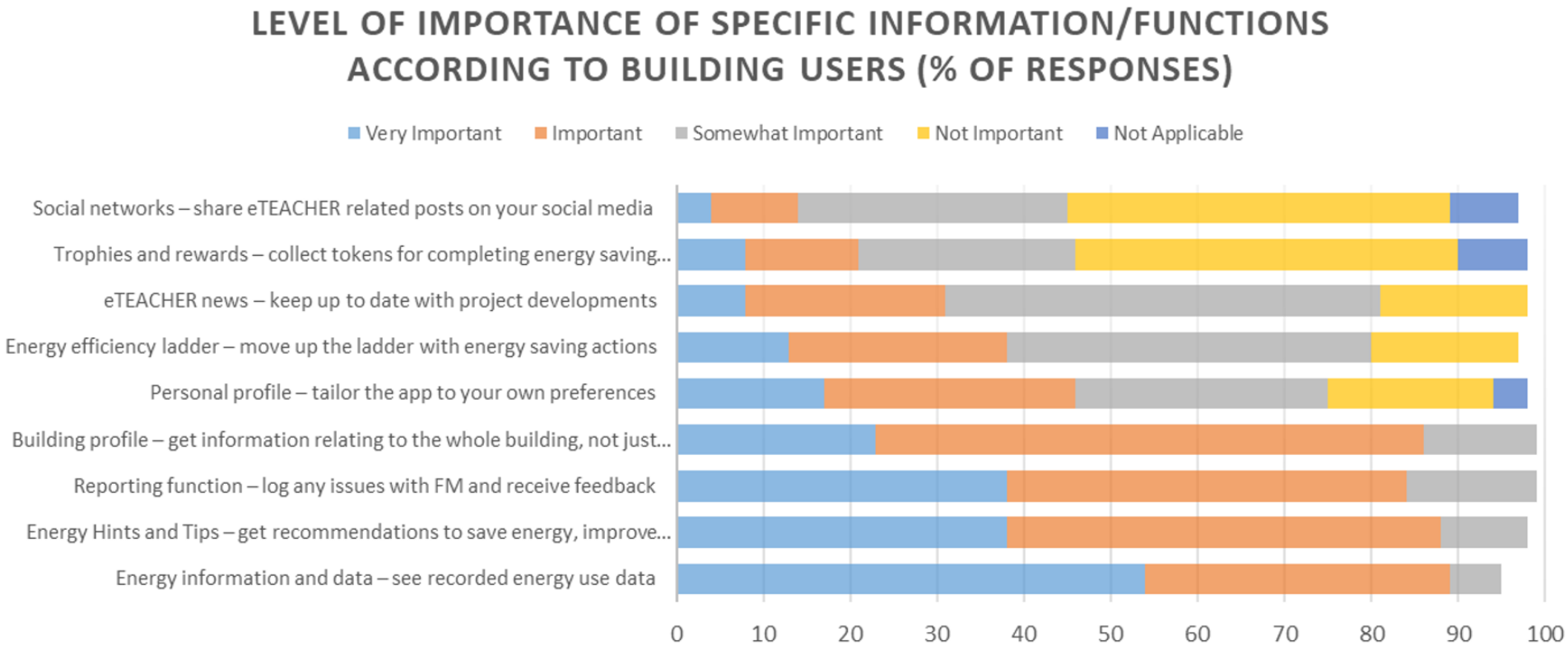
Findings: Ideal App



- Focus on presenting information
  - A chance to ‘dig deeper’ for energy managers
- Also hints and giving feedback on or reporting issues

Findings: Function Importance

Most important: Sharing energy information / ideas
Least important: Social interaction / gamification



Findings: Other Functions

- Hints
  - Most useful suggestions include: Thermostat settings; appliance use;
  - Feedback: must be appropriate for building type and agency
- Visualisation
  - Most interest in whole building/personal energy use
  - Least in links to social media profiles



Discussion

- Interest in information not gamified elements
  - More towards room-level in homes/offices, building-level in schools/health centres
  - May reflect sample biased to personal/professional interest?
- User role and agency,
  - Many users cannot control heating/cooling in buildings
- Accessibility
  - Students/staff not allowed to use smartphones at work
  - Needs to also work as web page

"All of these [app functionality preferences] should be presented in a different priority-based pattern depending upon the job role – estates team vs. teacher etc."

Conclusions

- The co-design approach can offer useful insight
  - Valuable if linked to specific knowledge of buildings and roles/responsibilities for energy
- Take care with representativeness
  - Aim for broadly supportive group with diverse experiences
- To be meaningful, must also translate into changes in how tools are developed
- Be cautious of one-size-fits-all approaches

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THANK YOU

A Reeves, areeves@dmu.ac.uk

De Montfort University

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www.eteacher-project.eu

@Eteacher_Eu

CONTACT US

coordinator@eteacher-project.eu

communication@eteacher-project.eu

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