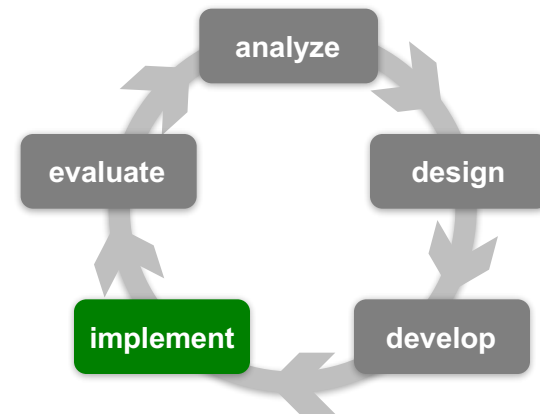




## S4: Technology diffusion: overcoming barriers

Rachel Ellaway

## Approaches to ID: ADDIE



## Rogers' stages

The adoption of any innovation tends to occur in five stages:

- Awareness
- Interest
- Evaluation
- Trial
- Adoption

These are informed by the diffusion characteristics of the innovation

## Rogers' perceived characteristics

- **Relative advantage**  
(is it perceived to be better than what it supersedes?)
- **Compatibility**  
(is it consistent with existing values, experiences and needs?)
- **Complexity**  
(is it perceived as difficult to use – (less is better))
- **Trialability**  
(is there an opportunity to experiment with the innovation?)
- **Observability**  
(are the results visible to others?)

## Implementation

- Although a technology may have symbolic significance technologies are really only useful when they are used
- But making something available is not enough
- Implementation has a number of steps:
  - Design
  - Deployment
  - Support
  - Sustainability
- Not necessarily sequential

## Design

- Purposeful decisions moving from potential to actual
- Much needs designing:
  - Content
  - Activities
  - Sequencing
  - Presentation
  - Communication, training and support
- Structured around constraints:
  - Medium
  - Culture
  - Capabilities

## Deployment

- Medical education is conservative
- Learners and faculty tend to resist change (unless they hate the status quo more)
- Timing is everything
  - introduce at points of other change (new year, curriculum change etc)
- Technology threatens experts
  - Running pilots supports Rogers' perceived characteristics and puts power back to faculty
- Communication, orientation and training
  - Control the message, portray confidence, take the users' perspective and meet their needs

## Support

- People forget what they've been told
- Things don't always work as they should
- Interactions between one technology and another can be chaotic and emergent
- Support is required
- Technical – keep the lights on
- Administrative – accounts, housekeeping, reports
- User – “how do I?”
- Program – teachers, study guides, planning

## Sustainability

- Nothing lasts for ever
- Plan for change – upgrades, replacements, changing needs
- Support staff and organizational knowledge
- Budgets
- Changing technical infrastructure
- Reputational risk
- Changing perceptions and values
- Transition and disruption ...

## Disruptive innovation

- Disruptive innovations – known about but ...
- Existing value networks prevent current providers from adopting them
- New providers have different value networks
- Simpler and cheaper forms
- Competes not on features but on overall package
- Creates new paradigms
- Undermines existing paradigms
- Example: online discussion

Christensen, C (2003). The Innovator's Dilemma. New York, NY, HarperBusiness.

## Technology transforms

“technological innovation cannot and should not be regarded merely as an improved means to a pre-selected end, because, while some technology merely modifies, other technology transforms”

Graham, G. (1999). The Internet://a philosophical enquiry, Routledge. p168)

## Technology transforms

“technology may start out as a new means to an old end, but its development turns out to have serious implications for our conception of the end itself”

Graham, G. (1999). The Internet://a philosophical inquiry, Routledge. p47

## "Virtual Society?"

1. The uptake and use of the technologies depend crucially on local social context.
2. The fears and risks associated with new technologies are unevenly socially distributed.
3. Virtual technologies supplement rather than substitute for real activities.
4. The more virtual the more real.
5. The more global the more local.

Woolgar, Steve (ed.) Virtual society? Technology, cyberspace, reality. Oxford: Oxford University Press, 2002.

## Activity: Implementing your course

- You are now going to implement the course you designed in Activity 2, but things are not all smooth sailing.
- Things are about to go sideways ... time to flip

