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Practical application of co-design

Hiran Thabrew
Child Psychiatrist, Paediatrician & Senior Lecturer
Department of Psychological Medicine

MEDICAL AND
HEALTH SCIENCES

What is Co-Design?

Co-creation

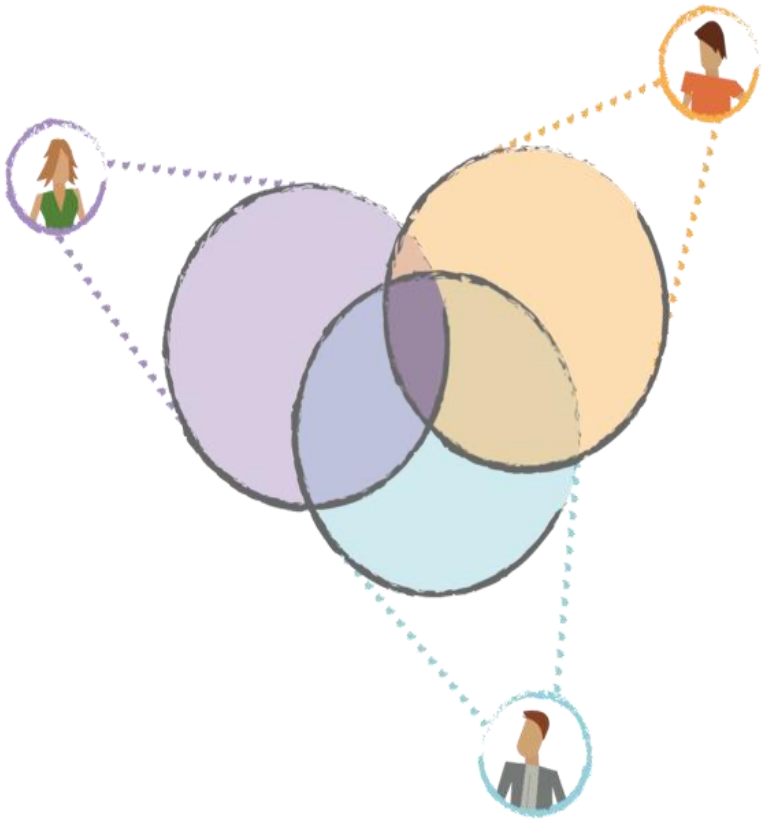
- Any act of collective creativity (Sanders and Stappers 2008)

Co-design

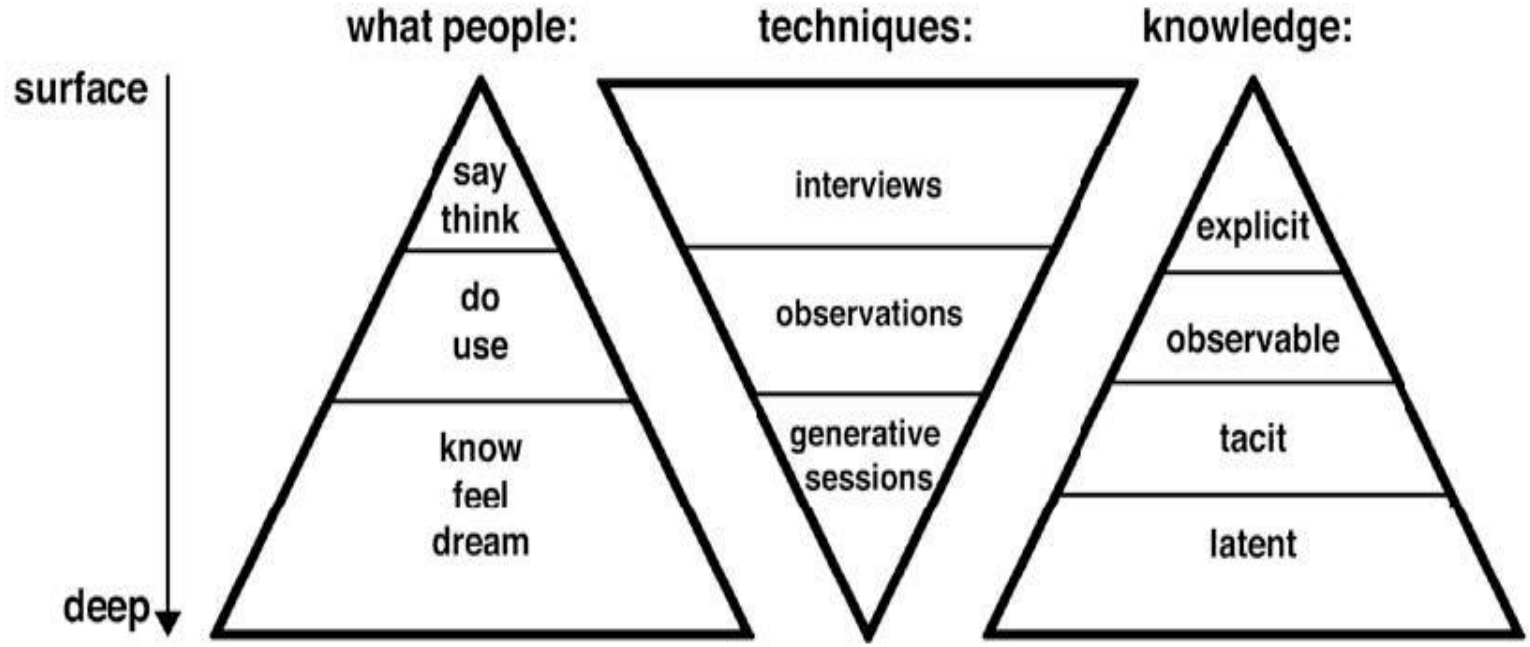
- Evolved from participatory design (Bjerknes 1987)
- Collective creativity as it is applied across the **whole** of the design process (Sanders and Stappers 2008)

What is Co-Design?

- Researchers, designers, developers and end users as "experts of their experiences (Sleeswijk 2005)
- More than ***say*** (hearing what people want), ***do*** (watching how they use interventions/services), but **make** (jointly exploring and articulating needs and jointly exploring and making solutions) (Sanders 2002)
- Five or six stage process and principles as outlined in previous presentation



What is Co-Design?



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Co-Design in Research

Design research	Pre-design and post-design	Generative	Evaluative
Purpose	To understand people's experiences in the context of their lives: past, present and future dreams	To produce ideas, insights and concepts that may then be designed and developed	To assess, formatively or summatively, the effect or the effectiveness of products, spaces, systems or services
	To prepare people to participate in codesigning	What will be useful? Usable? Desirable?	Is it useful? Usable? Desirable?
Results	Empathy with people	Opportunities for future scenarios of use	Identification of problems
	Creative codesigners	Exploration of the design space	Measurement of effectiveness
Orientation	Past, present and future	Future	Present and near future

Application in Research

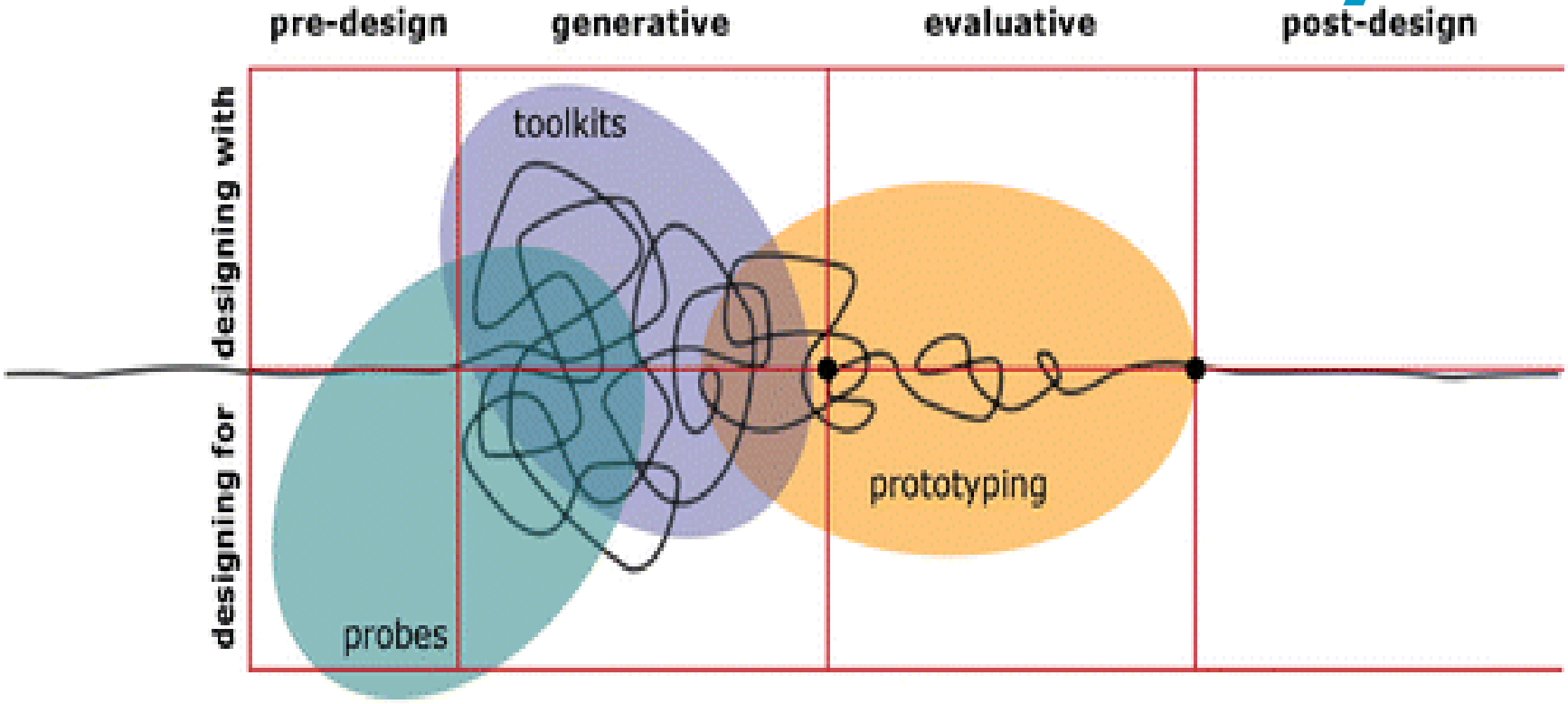
FROM

- Observation
- Focus group interviews
- Questionnaires

TO

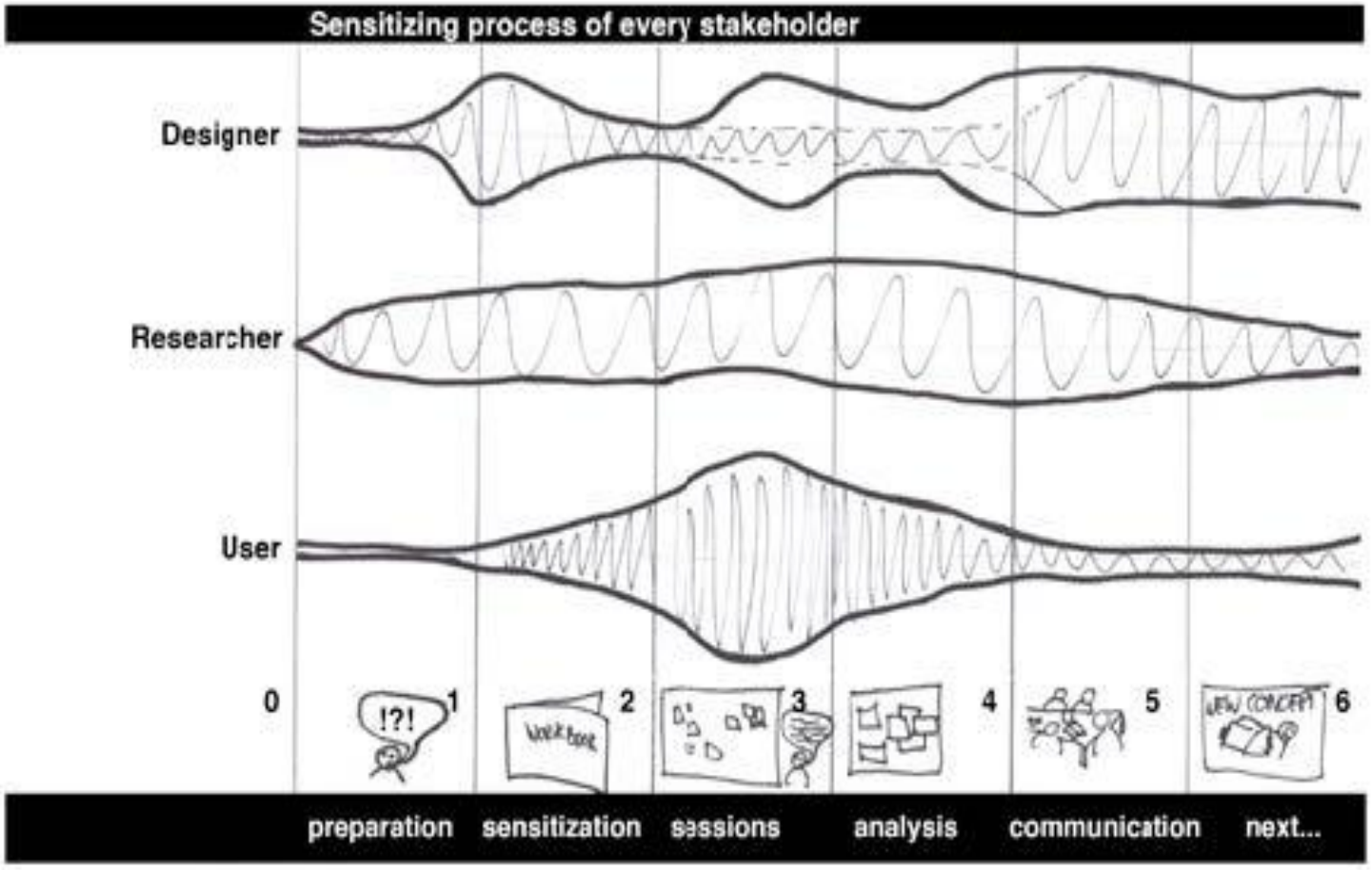
- Workshops, visual materials, technology probes
- Ambiguous inputs to provide creative inspiration
- Role playing
- Paper prototyping

The Research Journey



Ref: sanders and Stappers 2014

Sensitizing Process



Ref: designsociety.org

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Game for Health Study

Co-design of an eHealth intervention for addressing psychological problems in children with long-term physical conditions

Stages:

1. Exploration of psychological needs
2. Identification of intervention type and design preferences
3. Development of intervention

Exploration of Needs

- Seven focus groups

  (3 for children and parents, 2 for adolescents, 1 for paediatricians, 1 for GPs)

- Semi-structured format, digital recording of focus groups

- Clips of Quest for the Code, Re-Mission 2, SPARX used

- General inductive approach used to analyse interview data

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Development of Game to Treat Anxiety: Starship Rescue

- Game designer and biofeedback specialist recruited to research team
- Therapeutic components (researcher):
    - CBT
    - Biofeedback
- Educational components (researcher):
    - Bi-centric frame of reference
- Storyline and games (end user):
    - Previously identified preferences
    - Further end user ideas
- Technical development (game developer):
    - Game design/flow methodology
    - Bartle gamer profiles

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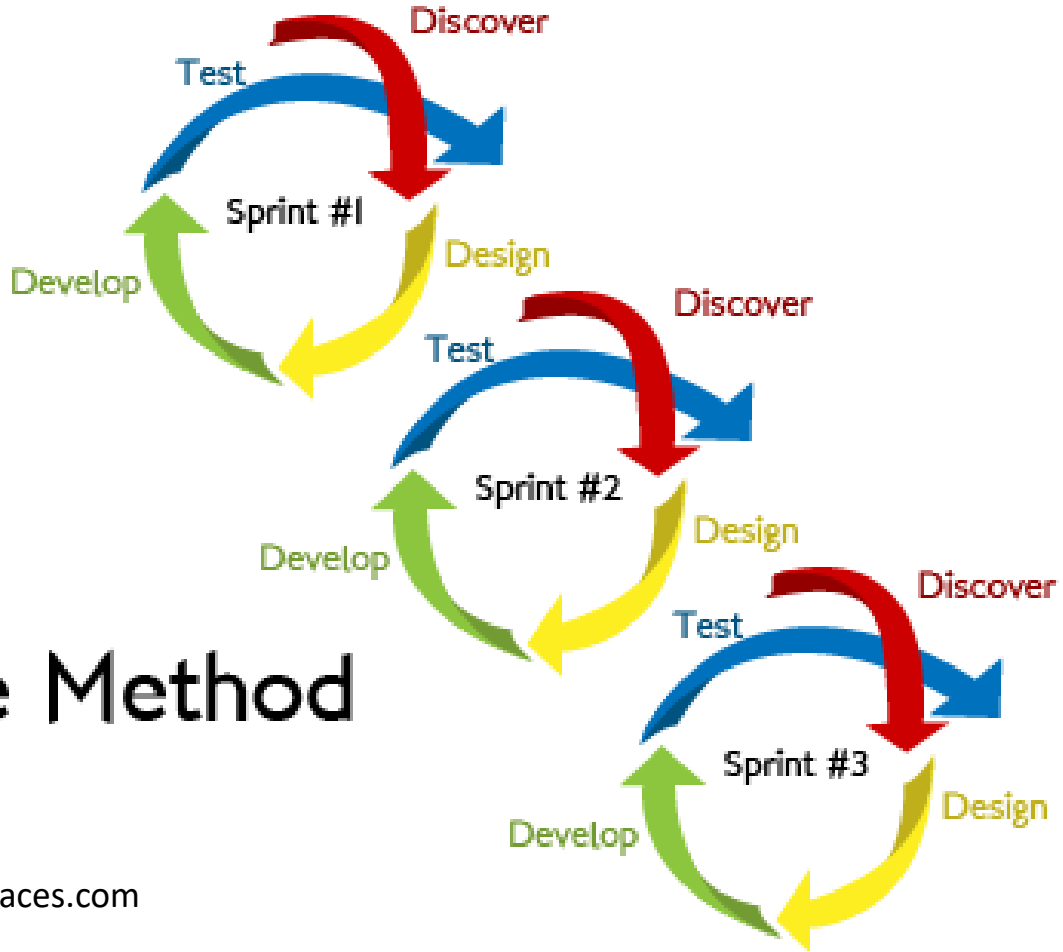
Co-Design Process

- Development of game in modules
- Modules co-designed in sprints with young people aged 13-18 years who have long-term physical conditions
- Modules refined and re-tested in 2-3 stages until user satisfaction achieved

Sprints & Scrums



Ref: commonplaces.com

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First sprint feedback and alterations

Feedback	Proposed alterations
Generally positive feedback regarding look/feel, e.g. "It's fun", "I liked how some monsters chase you and others need to be found"	None
Technical issue identified: "Only one little bug, getting stuck in the block"	To be fixed by game developer
Unsure whether different coloured crystals are the same	Clarification to be added to introduction to level
Hard to recall positive and negative when asked	Summary list to be added to the end of the level
"I think younger kids, probably 8-15 years, any (boys and girls)"	None, current game probably appropriate for target age range

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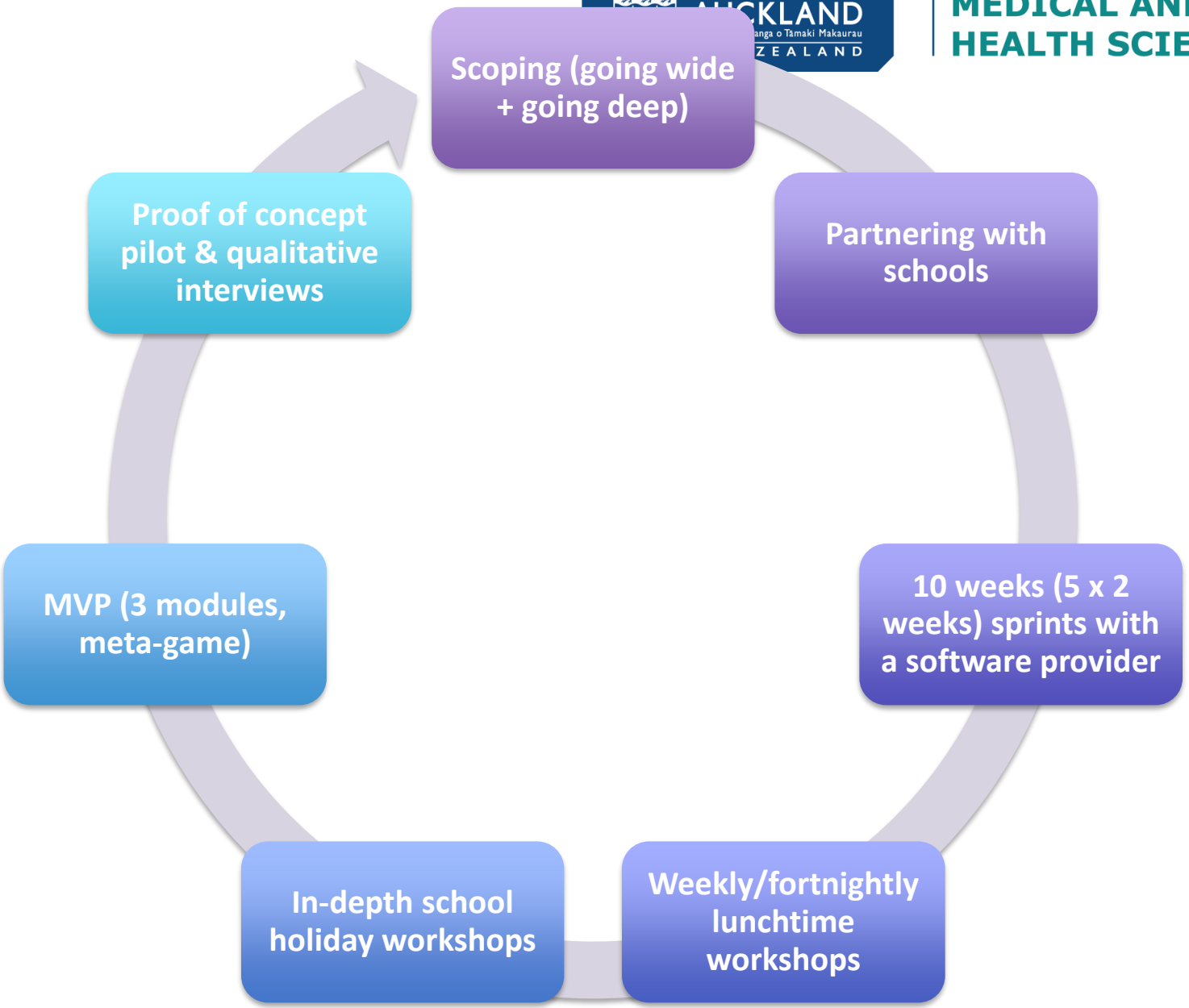
HABITS (Health Advances through Behavioural Intervention Technologies)

- **Objective**: To develop a prototype app for adolescents with emotional health concerns (depression and anxiety) using a rapid prototyping and co-design approach.
- An initial period of scoping consultations determined the direction of our work.
- **Sprints:**
  - Fortnightly sprints – iteration from paper to software
  - 15 rapid co-design sessions in two high schools
  - 7 in-depth workshops
  - Mostly Māori and Pacific youth
- **What did we do/ask about?**:
  - Workshopping of visuals (e.g. using mood boards), metaphors, overarching theme ('metagame')
  - User testing of each module and component (use of ease, comprehension of messages, 'languaging', cultural applicability etc)


Scoping (going wide + going deep)
Partnering with schools
10 weeks (5 x 2 weeks) sprints with a software provider
Weekly/fortnightly lunchtime workshops
In-depth school holiday workshops
MVP (3 modules, meta-game)
Proof of concept pilot & qualitative interviews

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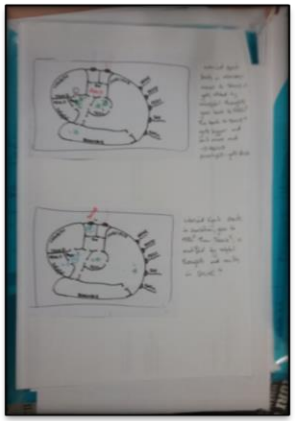
In-depth workshop at a community venue

What did it look like?

Working in schools

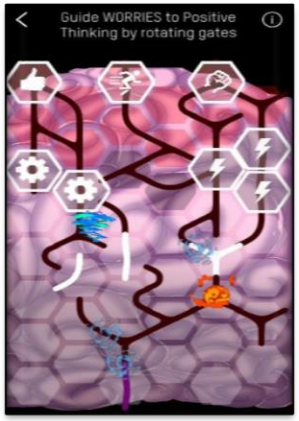
Iterative development

From paper to…

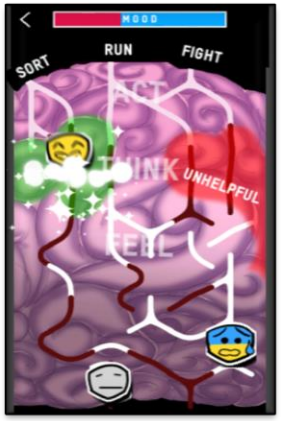


1st mock up

2nd mock up



Final version



Sprints and scrums: challenges & lessons learnt

- Fast pace is challenging for (typically) slow research environment (ethics, consent, scheduling of sessions, sign off on decisions). **Prepare yourself and the developer.**
- Take time to build relationships – e.g. whanau evening
- Young people are not 'on tap'. And schools are busy and over-researcherd. **Respect schools and their priorities**
  •45 min (lunchtime) is a really short design session. **Focus on one key question, think on your feet.**
  • Be aware that young people in schools may not share the views of your target audience (those with mental health concerns**). Try to confirm your hypotheses with the actual target audience.**

Sprints and scrums

- You're not guaranteed to get it right the first time – in fact, spiral/agile design demands that, if you fail, you fail early. **Be ready!**
- **Feedback from our pilot studies suggested we must:**
    - Simplify content (fewer modules than planned)
    - Improve the storyline (less text, more humour, better characterisation)
    - Target younger adolescents (12-14 yo)
    - Provide for more customisation and choice
    - Extend the range of devices (Chromebooks for schools)

- **Spiral design –** review successes/failures of first spiral and rebuild in the second spiral.
    - Spiral 2: Opted to take a more pragmatic approach and check with users regularly but not as often as in the first spiral (more in-depth workshops at the beginning and mid phase of the project)

Ideas for making people's experiences available for discussion

- Using visual materials
- Physically making things
- Using story-telling
- Being playful and making activities fun
- Embracing ambiguity
- Using interventions that support reflection and introspection

Smallfire.co.nz

Materials

- Whiteboard
- Collages
- Storyboards
- Inspiration cards
- Games (ref: *Gamestorming* book by David Gray)
- Modelling (products/systems/experiences – using Play-Doh, Lego, Mecano, etc.)
- Paper prototypes

Use of prototypes

- Evoke a focused discussion in a team, because the phenomenon is 'on the table'
- Allow testing of a hypothesis
- Confront theories, because instantiating one typically forces those involved to consider several overlapping perspectives/theories/frames
- Confront the world, because the theory is not hidden in abstraction
- Allow people to experience a situation that did not exist before

Stappers 2010

Tips

- Engage users early
- Work hard to ensure representative spread of users
- Staff (researcher/designer) buy in essential
- Be prepared to go outside your comfort zone

Boyd 2012

Benefits

For project

Better ideas
Better knowledge about user's needs
Better decision making
Lower development costs
Reduced development time

For service

Improved creativity
Improved focus on users
More successful innovations
More support and enthusiasm for innovation
Better relations with users

For user

Higher quality of service
Higher satisfaction
Higher loyalty
More educated users

Steen 2011

Challenges

- Ethics application process for research (Goodyear-Smith 2016)
- Extent of co-design (all or nothing or something in between?)
- Frustration regarding the pace and scale of change (Bowen 2013)
- Conflict and tension relating to issues of power - worse if very poor prior experiences of users (Roberts 2015)
- Project and funding creep/lack of resource allocation (NSW govt. 2019)

Children and Young People

- Need to make participatory design workshops **engaging** and **productive** (Pederen 2000)

- Motivating young participants via cash rewards, naming them as "authority figures" in the process (Glasemann 2008)
- Low motivated participants – short activities, clear outputs, concrete examples and familiar situations (Mazzone 2008)
- Culturally relevant concepts for engagement (Bowen 2013)
- Settings and props to communicate the cultural reference (Bowen 2013)
- Duration – 30 mins to 2 hours (depending on age/ability)

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Children and Young People

- Use a meaningful icebreaker
- Don't reinvent the wheel
- Make a plan, then throw it away
- If it's an activity that works for 16-25 year olds, then it will work for everyone
- Think about what would work for you
- Safety first
- Don't preach to the choir
- Get out

(Wearesnook.com)

Co-design with Maori

Key principles:

1. **Whanaungatanga** – establishing a connection or relationship over time
2. **Manaakitanga** – nurturing and caring for others
3. **Aroha ki te tangata** – respect for people, compassion for others
4. **Tauututu** - reciprocity

Key actions:

- Involve Maori researchers/advisors +/ - a Kaumatua to guide process (ideally)
- Opening with karakia/waiata
- Provide kai/koha Ensure cultural safety - ? Separate groups/sessions

Co-design with Pasifika

Talanoa – a conversation or exchange of ideas or thinking with out a rigid framework

Key principles:

1. **Faka'apa'apa** – respectfulness
2. **Mateuteu** – being well prepared
3. **Anga-leilei** – tolerance, generosity
4. **Poto he anga** – knowing what to do and doing it well

Key actions:

- Involve pacific researchers
- Lotu – prayer to start/finish meetings
- Va – assuring safety of the space via multiple visits/meetings
- Engage participants by asking about their interests/culture and establishing common ground
- Provide kai/koha

Additional Resources

Building collaborative cultures of care within NSW mental health services https://www.aci.health.nsw.gov.au/resources/mental-health/collaborative-cultures/building-collaborative-cultures

A guide to build co design capability https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0013/502240/Guide-Build-Codesign-Capability.pdf

Co-design of eHealth interventions with children and young people: Thabrew, H., Fleming, T. M., Hetrick, S., & Merry, S. N. (2018). Co-design of eHealth interventions with children and young people. *Frontiers in psychiatry*, *9*,481.https://doi.org/10.3389/fpsyt.2018.00481

Further Resources

ACI clinical redesign methodology and fact sheets:

https://aci.health.nsw.gov.au/resources/redesign/redesign-factsheets/redesign-methodology-for-improvement-and-innovation/_nocache

ACI experience based co-design (EBCD) toolkit: https://www.aci.health.nsw.gov.au/networks/peace

Consumer Health Forum of Australia's EBCD toolkit: https://chf.org.au/experience-based-co-design-toolkit

The Point of Care Foundation's EBCD toolkit:

https://www.pointofcarefoundation.org.uk/resource/experience-based-co-design-ebcd-toolkit

The Kings Fund Collaborative Pairs Program

https://www.kingsfund.org.uk/courses/leading-collaboratively-patients-communities

Commissioning Mental Health Services: A Practical Guide to Co-design

https://www.cesphn.org.au/preview/our-region/1270-commissioning-mental-health-services-a-practical-guide-to-co-design-august-2016/file

Western Australian Council of Social Service (WACOSS) Co-design Toolkit

http://www.wacoss.org.au/wp-content/uploads/2017/07/co-design-toolkit-combined-2-1.pdf

Inside Out and Associates Australia https://insideoutconversations.com.au/what-we-do/customised-training/#

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