

**21st October**  
**10am BST/9am**  
**GMT**



## **Mental Health - Practices & Assessment: Episode 2**

Designing and Evaluating Mental Health  
Apps for Children

**Dr Bettina Moltrecht, UCL**

**Email: [b.moltrecht@ucl.ac.uk](mailto:b.moltrecht@ucl.ac.uk)**

**EBPU** Evidence Based  
Practice Unit

A partnership of





## The Eda app

- Emotion regulation app for children
- Co-design and development
- Implementation and evaluation



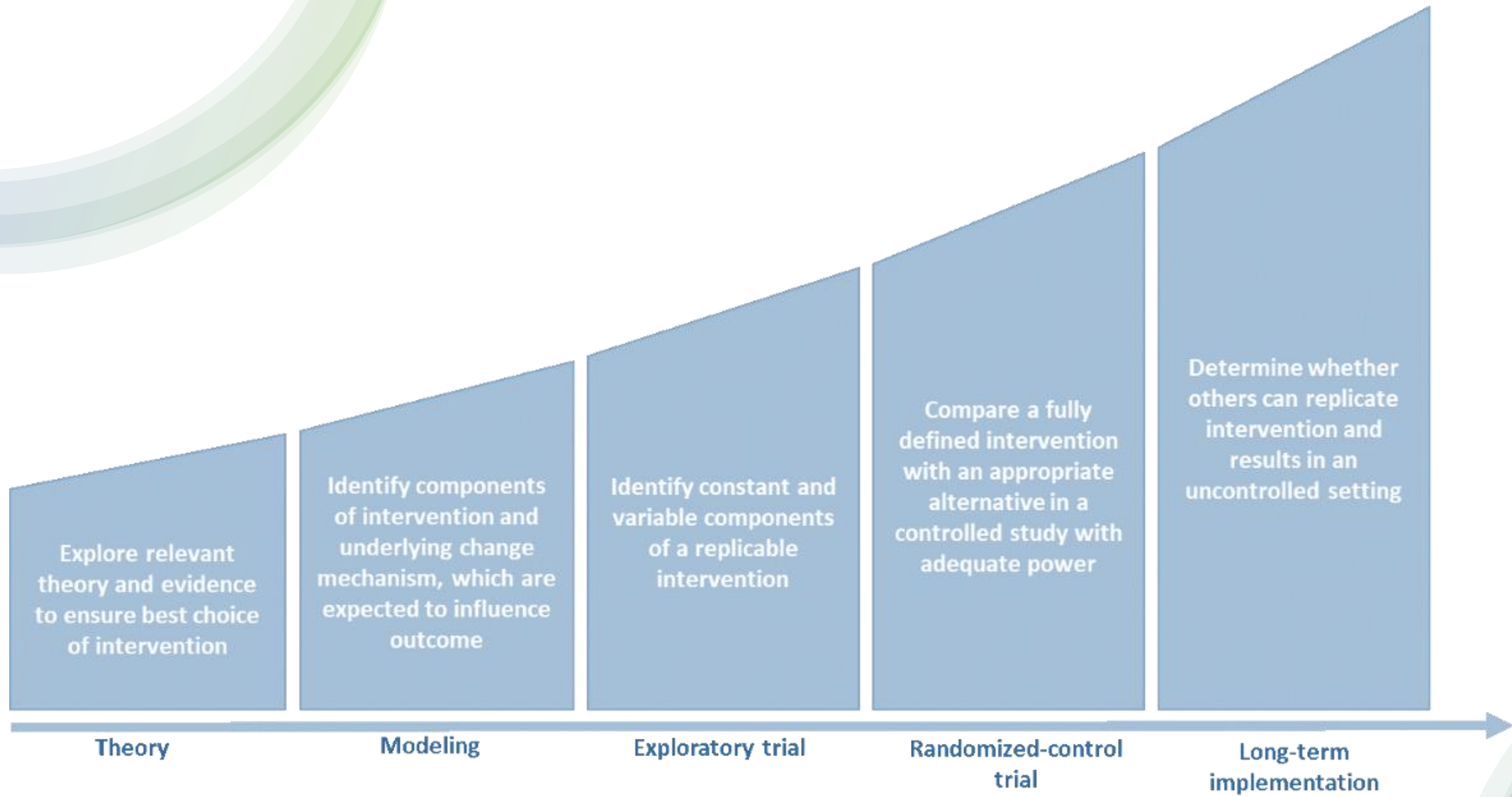
Design and Development

Where we meet...

Psychology

Technology





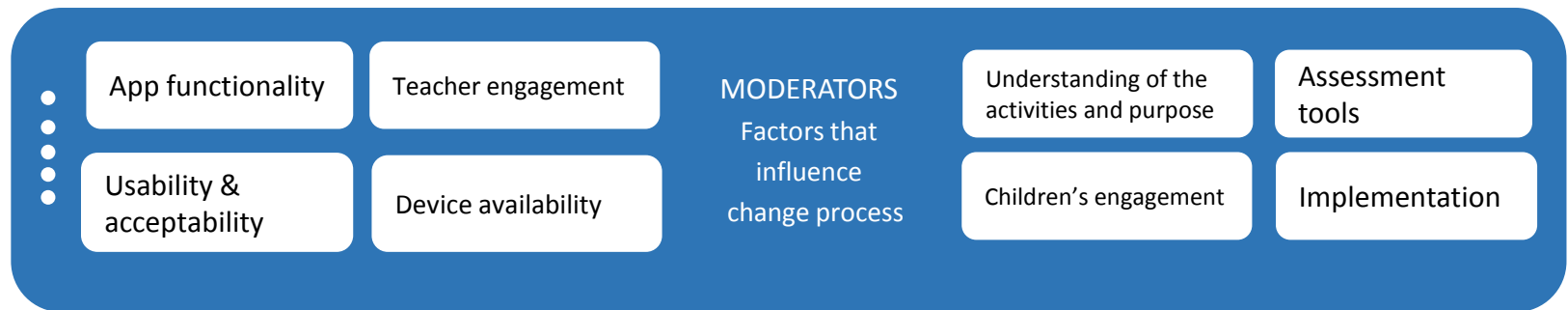
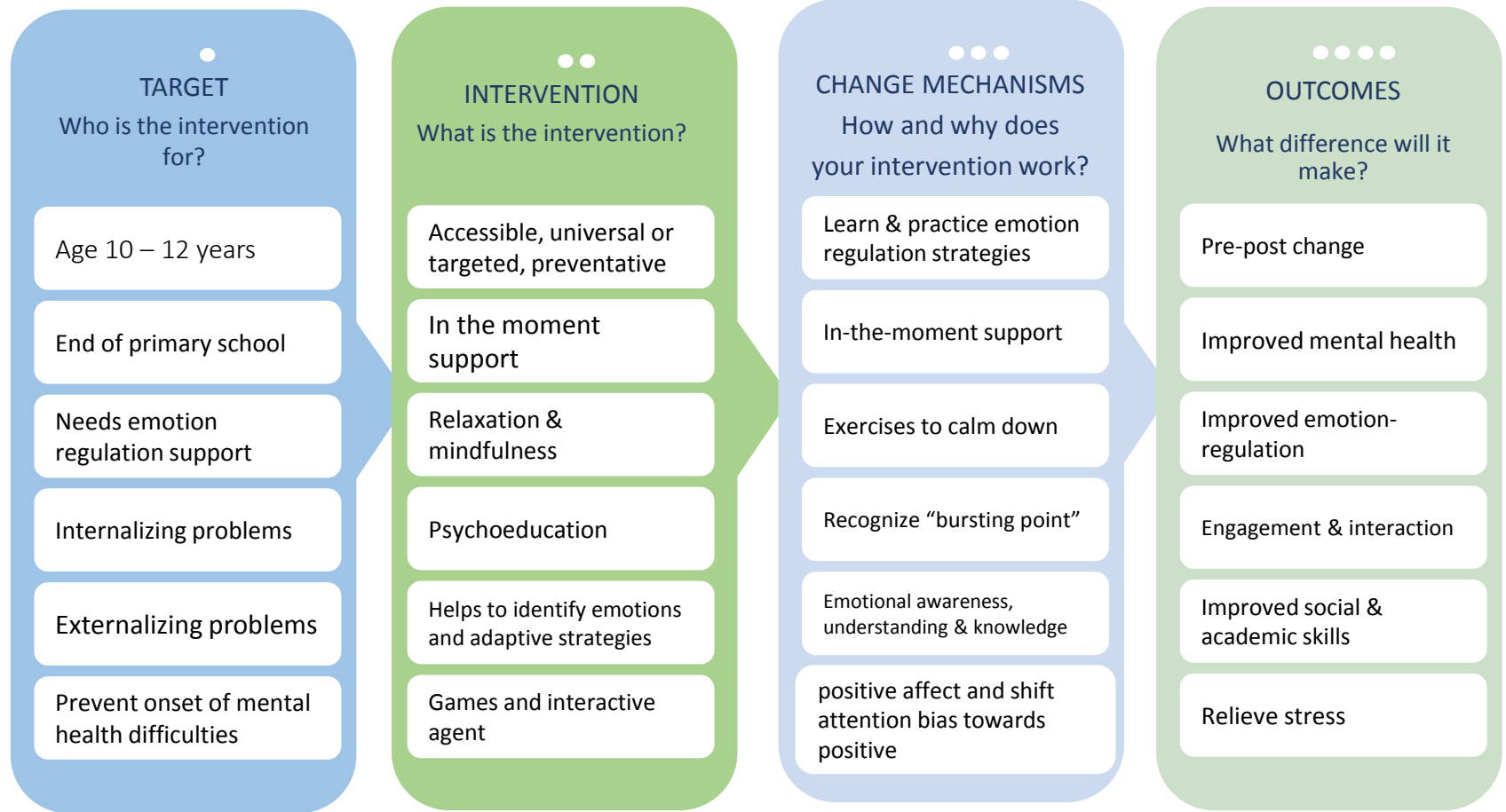
## Stage I: Theory

## Stage II: Modeling

## Stage III: Exploratory trial

Stage I: Theory			Stage II: Modeling		Stage III: Exploratory trial		
Objectives	<ul style="list-style-type: none"> <li>Understand problem and context</li> <li>Involve users in design process</li> <li>Identify existing evidence</li> <li>Identify key components of logic model</li> <li>Generate ideas for basic wireframes</li> </ul>		<ul style="list-style-type: none"> <li>Involve children and practitioners in design</li> <li>Accommodate different design goals</li> <li>Review and adjust wireframes</li> <li>Test, develop, adjust low- and high-tech prototype</li> </ul>		<ul style="list-style-type: none"> <li>Evaluate acceptability and usability</li> <li>Explore use in classroom context</li> <li>Improve and optimize app intervention</li> <li>Explore facilitators and barriers to evaluating app within classroom</li> </ul>		
Research team	Public engagement events		Systematic review and meta-analysis	Co-design workshops	Prototype testing	<ul style="list-style-type: none"> <li>Interviews</li> <li>Surveys</li> </ul>	
	Classroom observations	Organizing workshops	Combing and mediating feedback from stakeholders	Facilitating idea generation, adjustment, and iterative re-design	Combing and mediating feedback from stakeholders	Classroom observations	Interviews
Users	Public engagement events		Co-design workshops	Prototype testing	<ul style="list-style-type: none"> <li>Interviews</li> <li>Surveys</li> </ul>		
Clinicians	Workshops to gather feedback on content ideas		Workshops to gather feedback on content ideas				
Teacher/School	Classroom observations		Co-design workshops	Prototype testing	Classroom observations	Interviews	
App developer/Designer	Idea generation workshop		Idea generation, adjustments, and iterative redesign				
Outcomes	<ul style="list-style-type: none"> <li>Young preferences for MH app</li> <li>Logic model (draft)</li> <li>Systematic review and meta-analysis</li> </ul>	<ul style="list-style-type: none"> <li>Ideas for games and modules</li> <li>Content of animation videos</li> <li>Wireframes</li> </ul>	<ul style="list-style-type: none"> <li>Finalizing animations</li> <li>Decision on low-tech prototype content</li> <li>Development of high-tech prototype</li> </ul>	<ul style="list-style-type: none"> <li>Testing of high-tech prototype</li> <li>Adjustments</li> <li>Trial ready prototype</li> </ul>	<ul style="list-style-type: none"> <li>Exploratory trial outcomes and learnings</li> </ul>		
Participants	<ul style="list-style-type: none"> <li>Young people (n=21) and Teachers</li> <li>Psychologists (n=7, male 1, female 6)</li> <li>Parents (n=4)</li> <li>App developer (n=1, male) and Designer (n=2, female)</li> <li>Researchers (n=7, male 1, female 6)</li> </ul>		<ul style="list-style-type: none"> <li>Children (n=48) and Teachers (n=4, female)</li> <li>Psychologists (n=7, male 1, female 6)</li> <li>App developer (n=1, male) and Designer (n=1, female)</li> <li>Emotion regulation researchers (n = 5)</li> </ul>		<ul style="list-style-type: none"> <li>Children interviews (n=19)</li> <li>Children surveys (n=132)</li> <li>Teachers (n=6)</li> <li>Researcher (n=2)</li> </ul>		

# Logic model



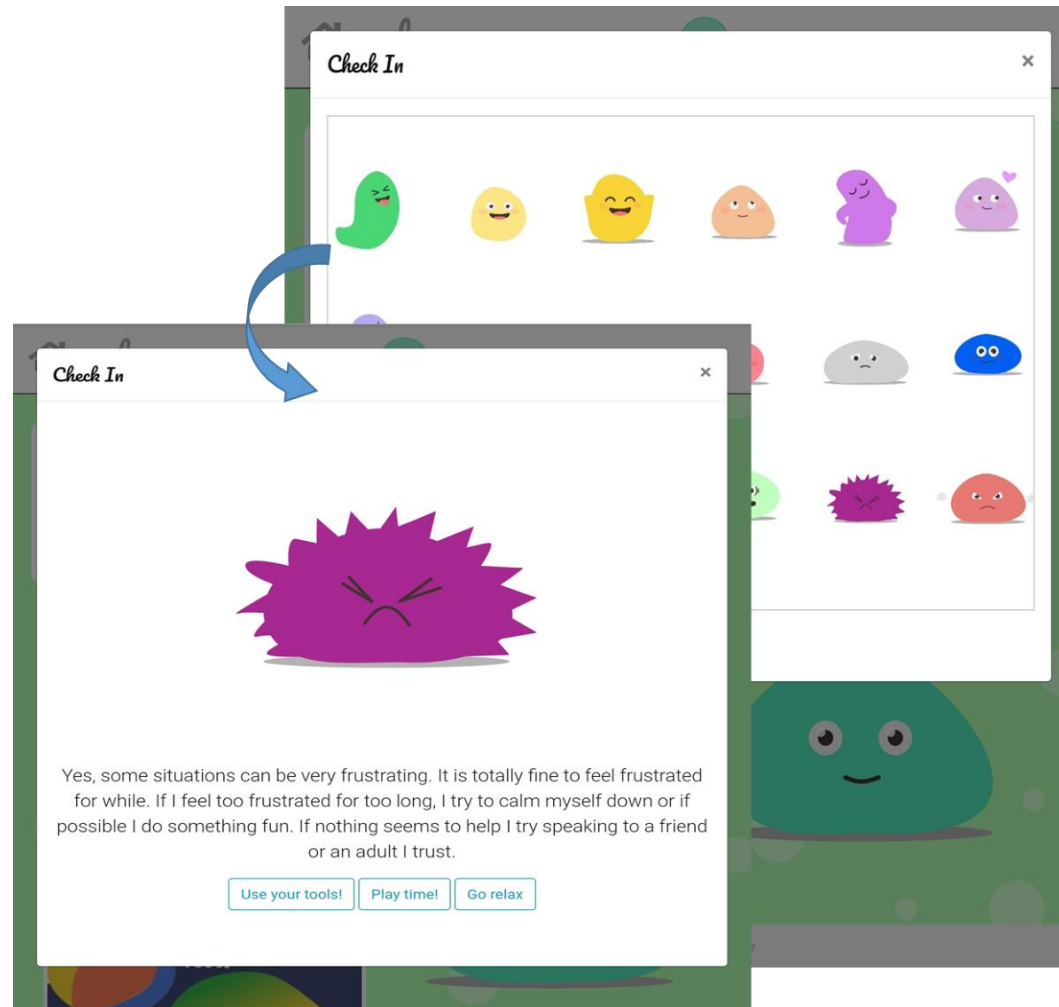


Young voices

What?	DO's	DON'Ts
<b>Accessible</b>	Across devices, financially, make it available offline	advertisement, in-app purchases, wifi/data needed
<b>Engagement</b>	Interactive, community, updates, tracking, games, give feedback	push notifications, dead website
<b>Design</b>	Customizable, age appropriate (incl. language, style), intuitive	childish, clunky, copy others
<b>Data/Technology</b>	Cloud, control your own data, security	too much data required, no control over data collected, crashes, too slow
<b>Mental health</b>	Teach and encourage skills Community	Information only
<b>Modules</b>	Relax (music, mindfulness, painting), distract (games)	Information only
<b>Other</b>	Sign-posting: Where can I get help? Suggest activities Editable	



# Eda app examples



Eda app  
examples



Breathe in  
**1**  
Seconds

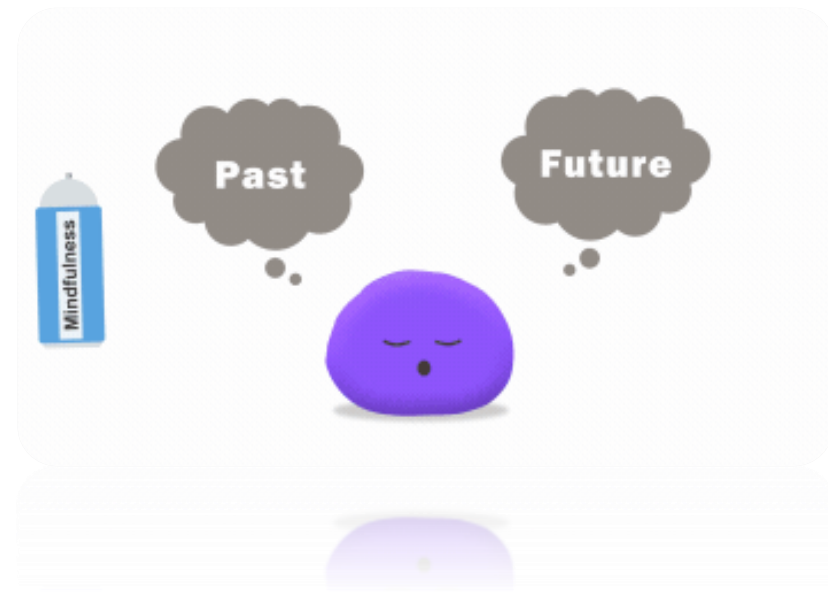




Evaluation

# Exploratory trial in UK primary schools

- 4 UK primary schools (N=145)
- 12 weeks
- Class room observations
- Interviews
- Questionnaires



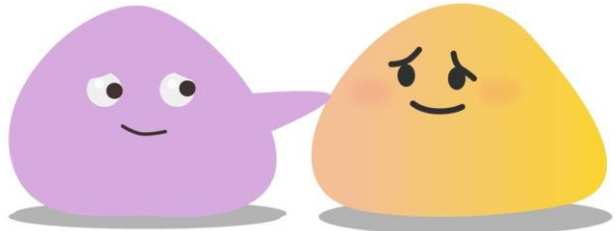
# Findings & Learnings

I liked eda because it helps you to relax and be mindful of others

It makes me feel relaxed and on the Happy Song game it helped me to notice.

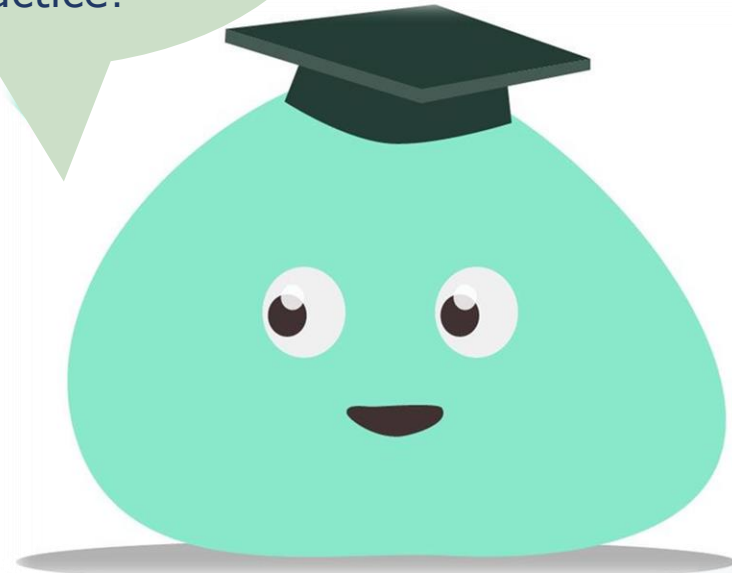
Show the timer on happy faces some where in the app.  
On tools - behaviour tools, write down how you're feeling some things disappear

I couldn't find the app!



Eda told them about strategies & gave them a chance to practice!

more songs and exercises to choose from & exercises to activate children!



# Findings & Learnings

## App development

- Get user insights
- UX design as important as content
- Implementation context important
- Meet - Tweak - Repeat

## Implementation

- Be flexible: Every teacher is busy and works in a different way
- Implement before you implement
- Stay in touch with the teachers
- Most web-pages/apps need school approval
- Schools work from a range of devices



## Engagement & Implementation & Sustainability

Recent estimates suggest approximately 10,000 to 22,750 mental health apps exist

Majority of downloaded apps not used after 2 weeks

Worldwide, the top 3 mood tracking apps are responsible for 79% of active users

# Taxonomy of implementation outcomes

**Sustainability**  
(maintenance or integration)

**Penetration**  
(spread or “reach” of the technology)

**Adoption**  
(technology uptake and utilization)

**Cost**  
(financial impact of technology implementation)

**Engagement**  
(attendance, adherence and dropout).

**Fidelity**  
(implementation as intended)

**Co-production**  
(user involvement development/evaluation)

**Feasibility**  
extent to which technology successfully used

**Appropriateness**  
(fitness for purpose)

**Acceptability**  
(satisfaction with a technology)





## Key questions from audience

- Are mental health apps effective?
- Where is the untapped potential?
- What solutions are there to tackle existing challenges?

# Research and Presenters

## References:

- Moltrecht, B., Patalay, P., Bear, H. A., Deighton, J., & Edbrooke-Childs, J. (2022). A Transdiagnostic, Emotion Regulation App (Eda) for Children: Design, Development, and Lessons Learned. *JMIR Formative Research*, 6(1), e28300.
- Moltrecht, B., Patalay, P., Deighton, J., & Edbrooke-Childs, J. (2021). A school-based mobile app intervention for enhancing emotion regulation in children: exploratory trial. *JMIR mHealth and uHealth*, 9(7), e21837.
- Moltrecht, B., Deighton, J., Patalay, P., & Edbrooke-Childs, J. (2021). Effectiveness of current psychological interventions to improve emotion regulation in youth: a meta-analysis. *European child & adolescent psychiatry*, 30(6), 829-848.
- Wolpert, M., Sharpe, H., Humphrey, N., Patalay, P., & Deighton, J. (2016). EBPU Logic Model. *Child and Adolescent Mental Health Services*, 2021-02.
- Bear, H.A, Ayala-Nunes, L., DeJesus, J., Liverpool, S., Moltrecht, B., Neelakantan, L., Harriss, E., Watkins, E., Fazel, M. (accepted). Determining markers of successful implementation: a systematic review of mental health apps for young people.

# Research and Presenters

Please contact the presenters if you have any questions or would like to talk with them about their work:

Dr Bettina Moltrecht

Email: [b.moltrecht@ucl.ac.uk](mailto:b.moltrecht@ucl.ac.uk)

Twitter: @bmoltrecht

Dr Holly Bear

Email: [holly.bear@psych.ox.ac.uk](mailto:holly.bear@psych.ox.ac.uk)

Twitter: @DrHollyBear

## Thank you...

- Animator : Mair Perkins ([//mairperkins.co.uk/](http://mairperkins.co.uk/))
- App developer: Chris Quinn
- Schools, teachers, parents, children
- Anna Freud National Centre ([www.annafreud.org](http://www.annafreud.org))
- National Children's Bureau
- University College London
- EU Horizon 2020 & Marie Skłodowska Curie

