

'Denk je zèlf!' A personalised mHealth virtual coach for obese emotional eaters *

Introduction/background

obesity = chronic disorder 12% = obese (BMI >30) / 50% = overweight
comorbidities: heart failure, diabetes, depression, low self esteem etc.
causes: bad eating habits, lack of physical activity, obesogenic environment, eating disorders, genetic, metabolic, medication.

Golden triangle in treatment



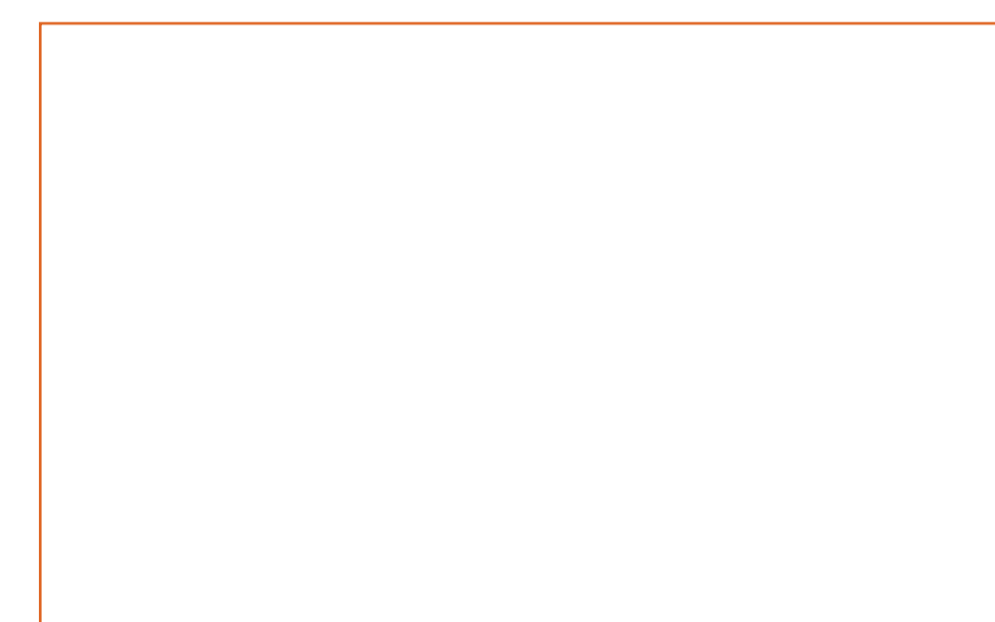
40% of obese - emotional eaters
 - eating in response to negative emotional states; food is comfort, stress relief;
 - emotional eaters don't benefit fully from existing treatment programs;
 - treatment do not focus on problems with emotion regulation.
 result: yoyo effect
 diets are not the answer!

Related work



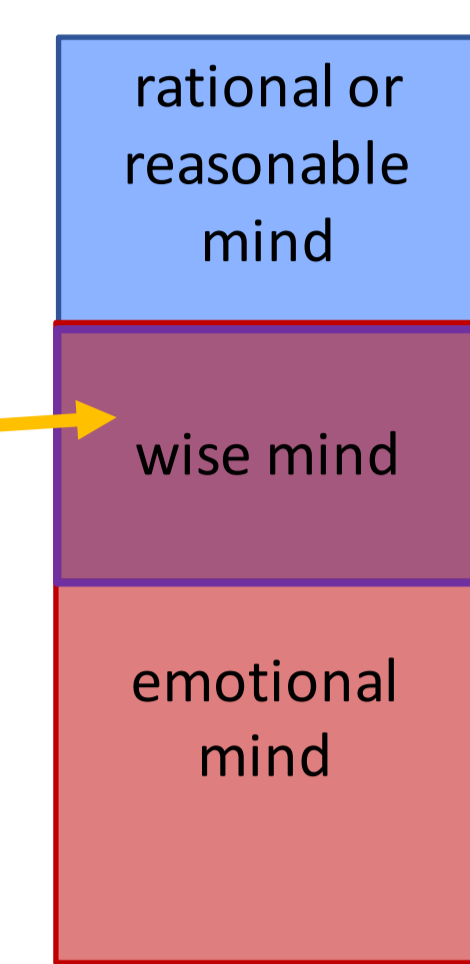
Why an app?

- ehealth is proven effective
- need for ehealth users
- emotional eaters need privacy
- only a few apps on the market for emotional eaters



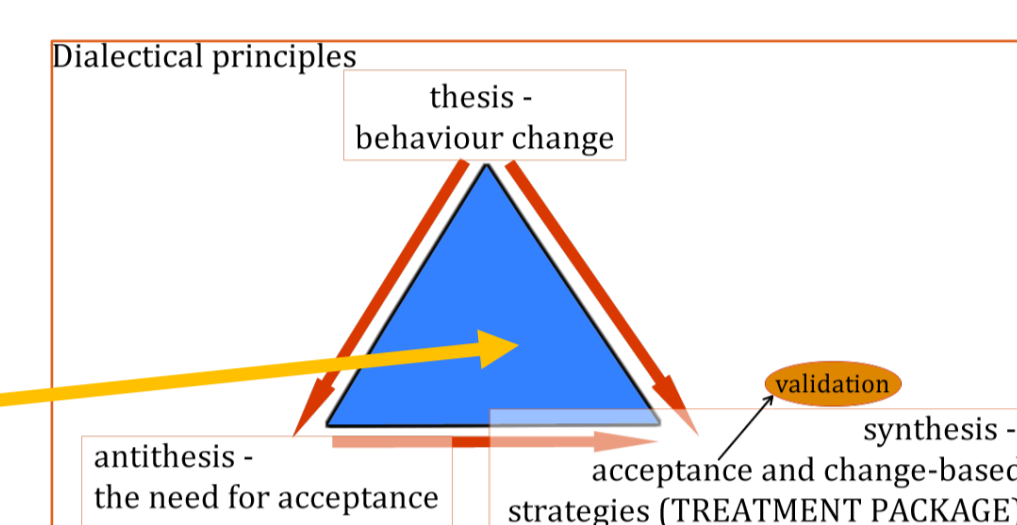
Dialectical Behaviour Therapy - succesful in treating eating disorders and emotional eating

- mindfulness**
 - awareness and acceptance
 - developing a wise mind
- emotion regulation**
 - observing and describing your emotions
 - controlling the chain *emotion <-> behaviour*
 - decreasing emotional vulnerability,
 - increasing amount of positive emotions



- stress tolerance**
 - dealing with pain
 - suffering = pain + no acceptance

- dialectical focus**
 - validation vs problem solving (change)



Approach and methods

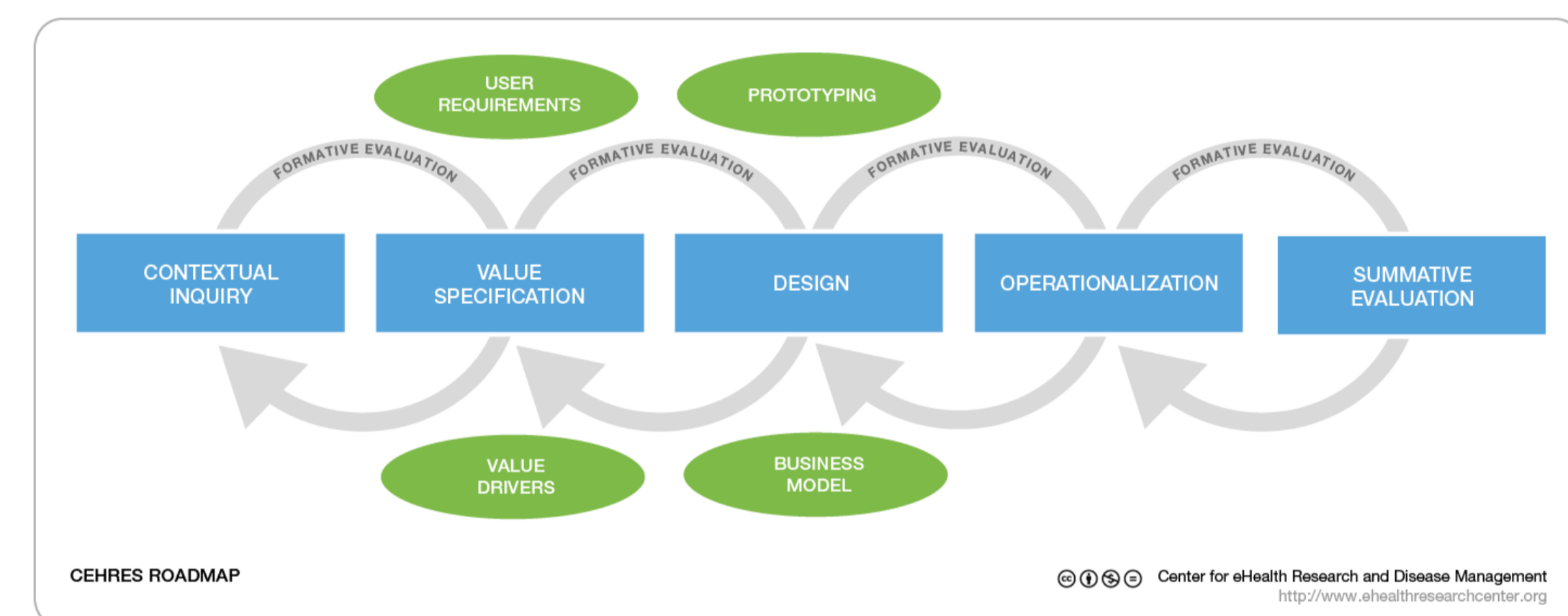
Objective

Develop a personalised self-management intervention based on Dialectical Behaviour Therapy for young adult emotional eaters (from moderate to obesity).

data gathering: literature review, interviews and questionnaires developing personas (leRouge)

user profile / persona: healthcare specifics, demographic info Internet (technical skills)

Method:
 the CeHRes roadmap (Center for eHealth Research University of Twente)



Results

Personas

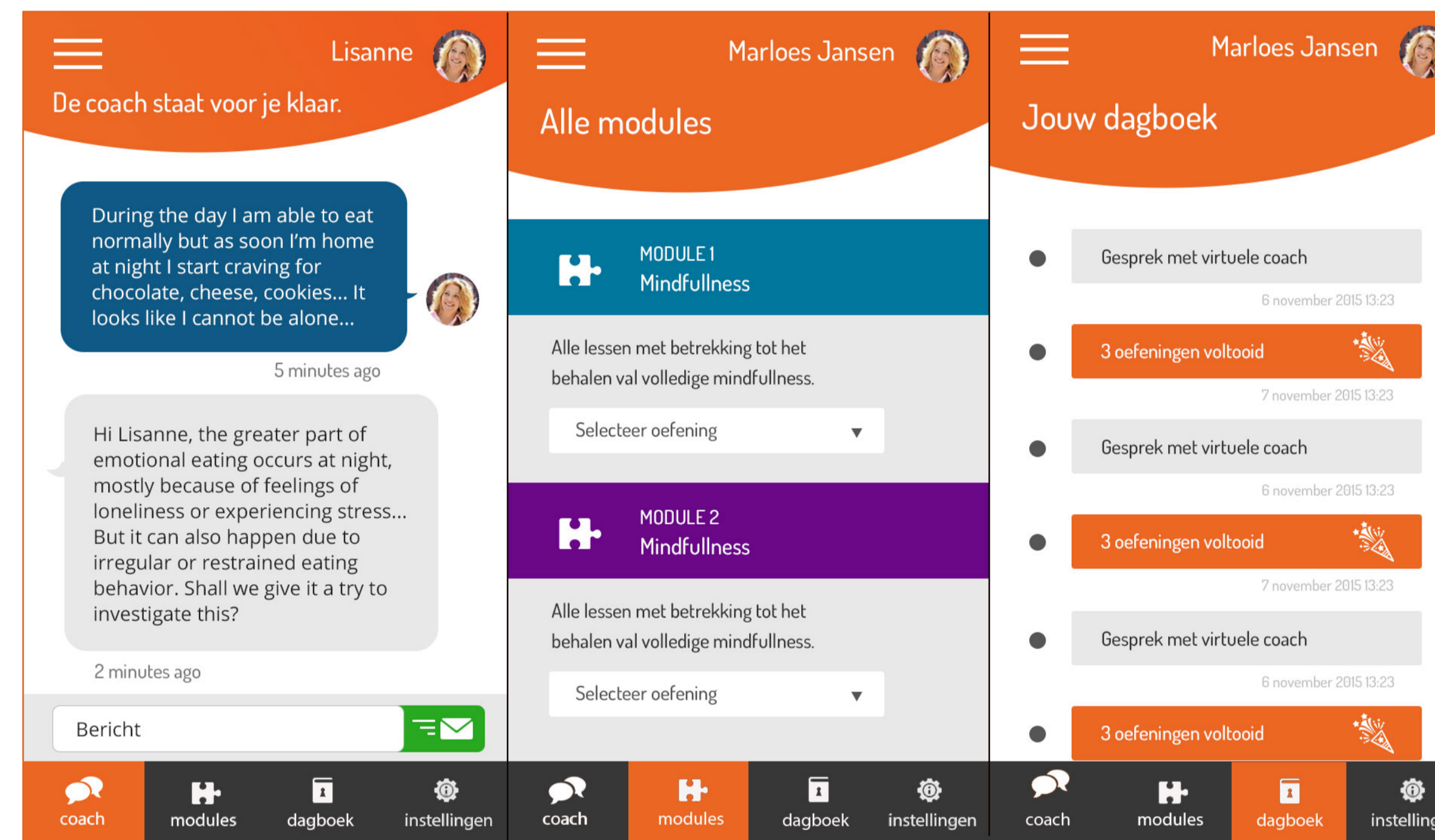


Lisanne:
 "I wish that I was more confident about myself..."
 Lisanne feels insecure about her body / Is not able to sense the difference between hunger, appetite or Fears / Fears to experience what she really feels.

Anita:
 "When I am stressed out I start snatching the cookie tin"
 Anita is worried about putting on more weight / Suffers from stress and finds a sweet tooth / Has a patronized (authorities).



User interface concept design

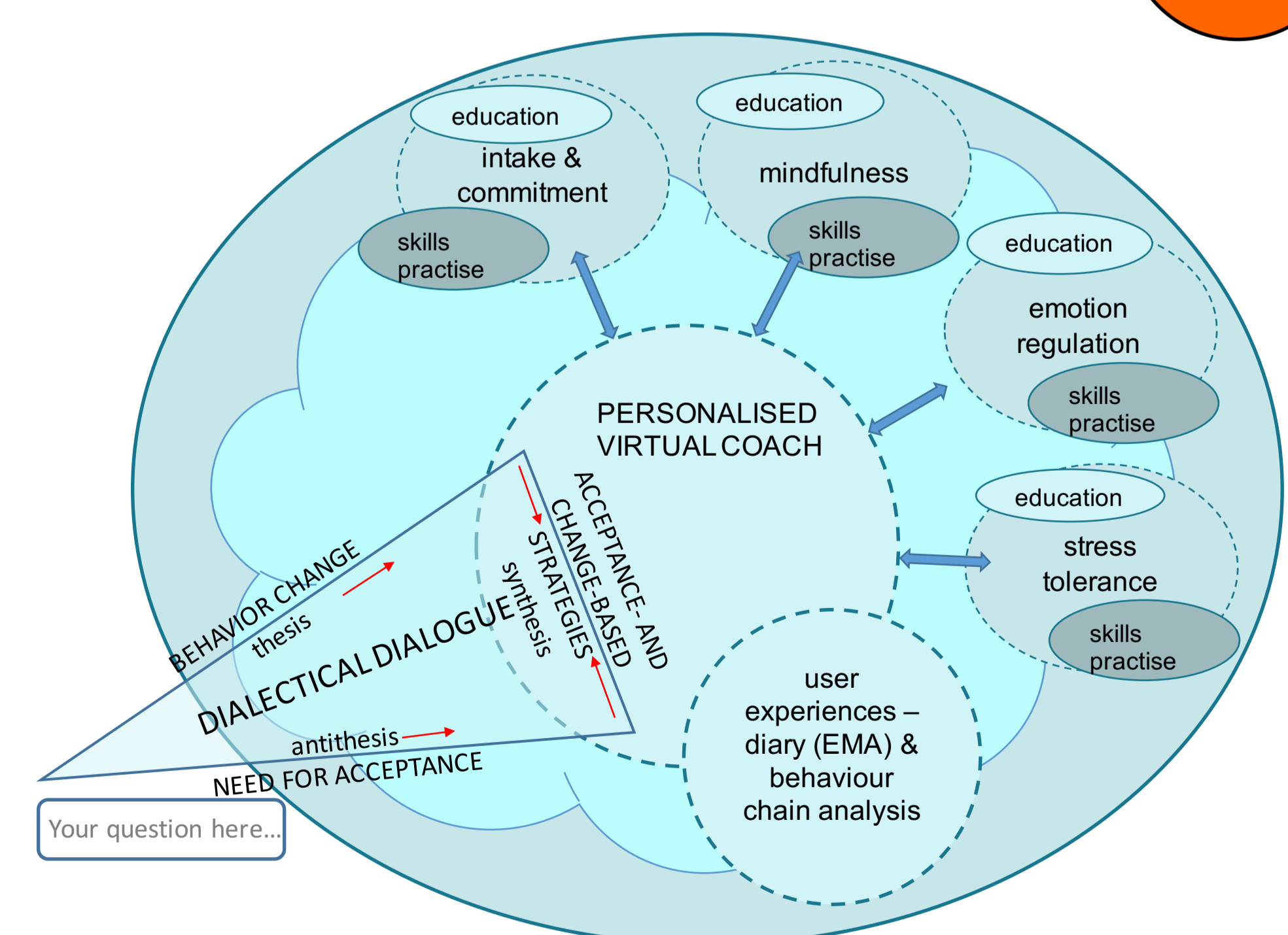


next steps user interface
 test results from eye tracking lab and expert interviews

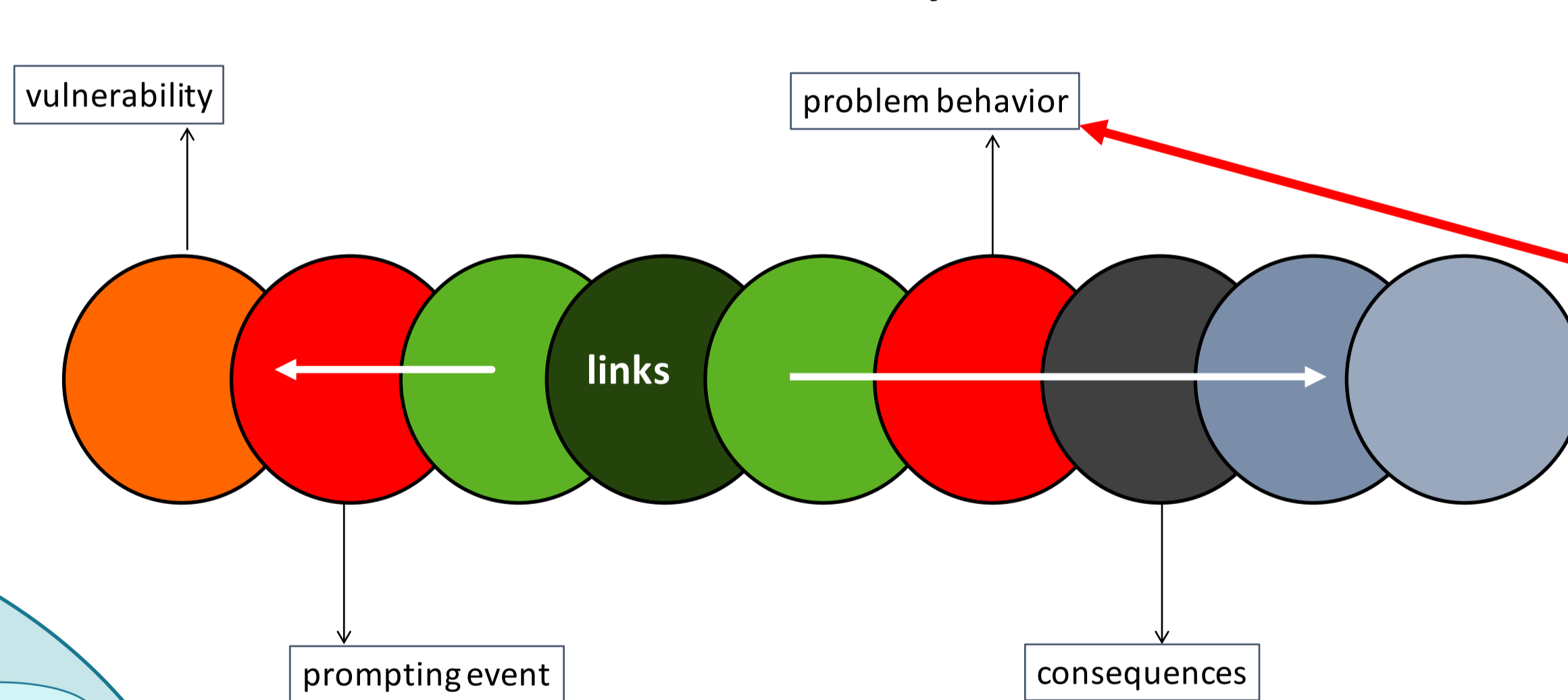
Future work

Architecture

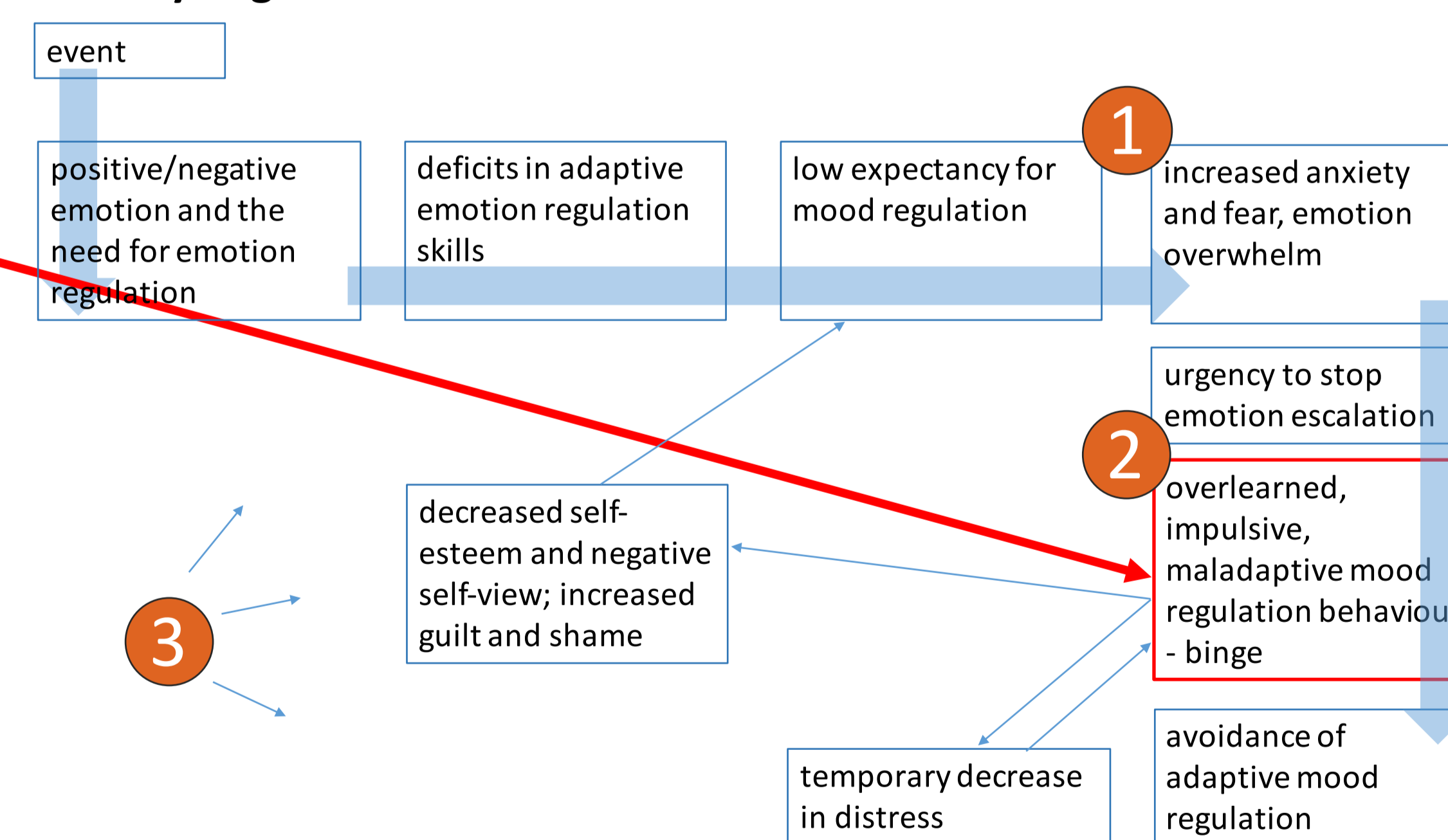
- **personalised virtual coach** – dialectical dialogues (validation and problem solving, developing a wise mind),
- virtual coach is **personalised** by input from EMA's (diary) and **behaviour chain analysis**
- **intake** and commitment module
- **skills modules** on mindfulness, emotion regulation and stress tolerance



Behaviour Chain Analysis



Emotion Dysregulation Model



- moments of intervention, developed with Persuasive Design Model:**
- a: connecting the user to the app, to seek advice and support just before or right after problem behaviour has taken place.
- b: by:
1. Dialectical strategies (validating vs. problem solving (change) to encourage the user to make the right choices before problem behaviour occurs,
 2. Behaviour Chain Analysis,
 3. Ecological Momentary Assessments (at random) to get a picture on problem behaviour patterns.

* 'Denk je zèlf!' : develop a wise mind and counsel yourself



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