

PRODUCTIVE STRUGGLE:

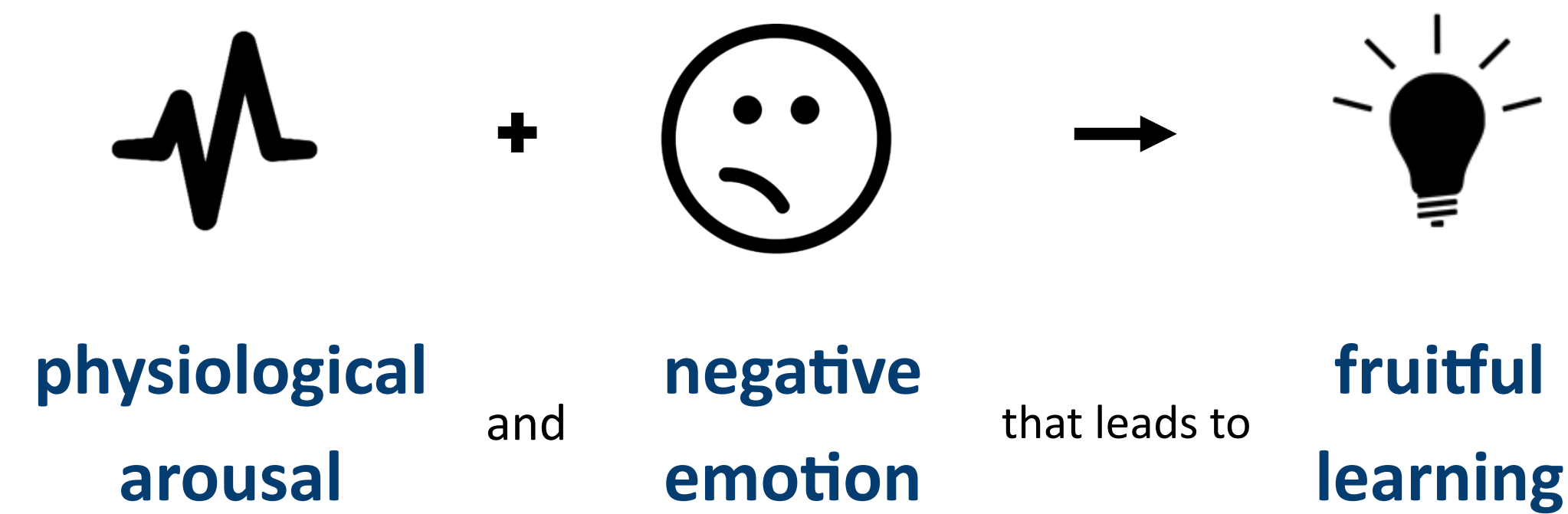
Measuring and Designing for Meaningful Challenge

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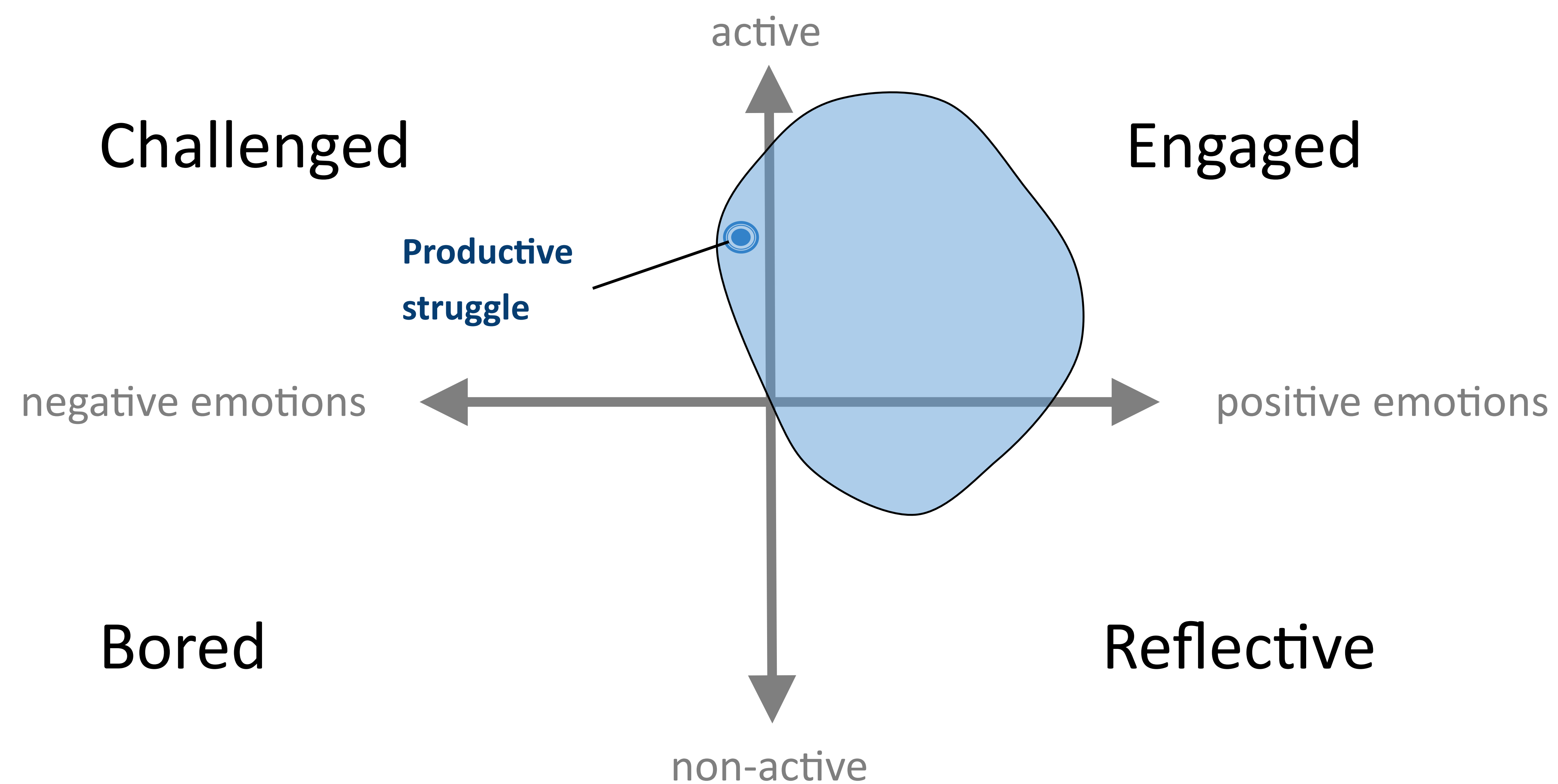
ABOUT

This work is based on an NSF-funded design-based research project (DRL-1612577) investigating productive struggle in the museum environment.

Productive struggle is...



MAPPING EMOTIONAL ENGAGEMENT



CONNECTIONS TO EXHIBIT DESIGN

The project will look at a number of exhibit strategies including:

- Social interaction
- Time pressure
- Competition
- Scaffolding

LESSONS LEARNED

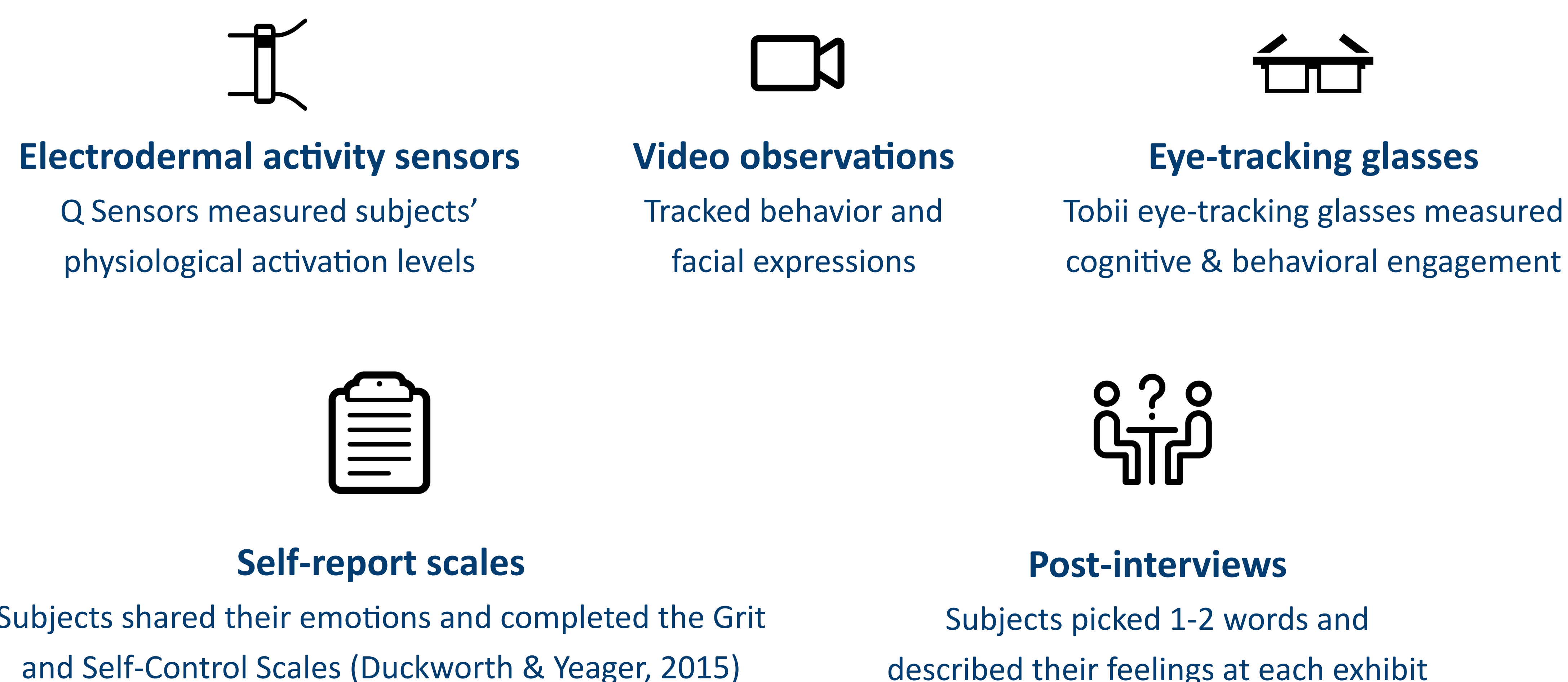
- ◆ People experience **many emotions at once**
- ◆ It can be **difficult to observe** arousal level
- ◆ **Data sources can contradict each other**
 - ⇒ Recall ≠ immediate self-report
 - ⇒ Self-report ≠ physiological data

OPERATIONALIZING PRODUCTIVE STRUGGLE

Our preliminary definition of productive struggle has 4 criteria:

- 1. High activation:** A peak in electrodermal activity, measured by Q Sensor skin conductance data.
- 2. Self-reported productivity:** On the survey or interview, the visitor indicates that she or he experienced pride, accomplishment, or a similar indication of self-defined success.
- 3. Self-reported struggle:** On the survey or interview, the visitor shares that she or he felt confusion, difficulty, or frustration during the activity.
- 4. Progress towards a goal:** During the observation or interview, the visitor demonstrates that she or he was working towards a goal.

MEASURING EMOTIONAL ENGAGEMENT



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- Images: Face by Dev Patel; Activity by Gregor Cresnar; Idea by Botho Willer; Wristband by Leonardo Schneider; Video by Jivan; Glasses by Hea Poh Lin; Clipboard by Nick Bluth; Interview by Gregory Cresnar; Chat by Logan; Time by Kidiladon; Ladder by Jae Deasigner; & Cup by Bezier Master from the Noun Project.