

Action Competence in Sustainable Development (ACiSD)

Developing a measurement instrument in co-creation with children



Wanda Sass - Jelle Boeve-de Pauw - Sven De Maeyer

27 September 2019

Developing an ACiSD measurement instrument in co-creation with children
Action Competence: terminological issues



Defining Action Competence in Sustainable Development (ACiSD)

Developing a measurement instrument in co-creation with children: 3 steps

Developing an ACiSD measurement instrument in co-creation with children AC: terminological issues

Action Competence (AC)

Mogensen & Schnack (2010) on AC

An educational approach 'in a broad sense' (p. 60)

educational approach
e.g. Ellis & Weekes (2008)



Developing an ACiSD measurement instrument in co-creation with children AC: terminological issues

Action Competence (AC)

Mogensen & Schnack (2010) on AC

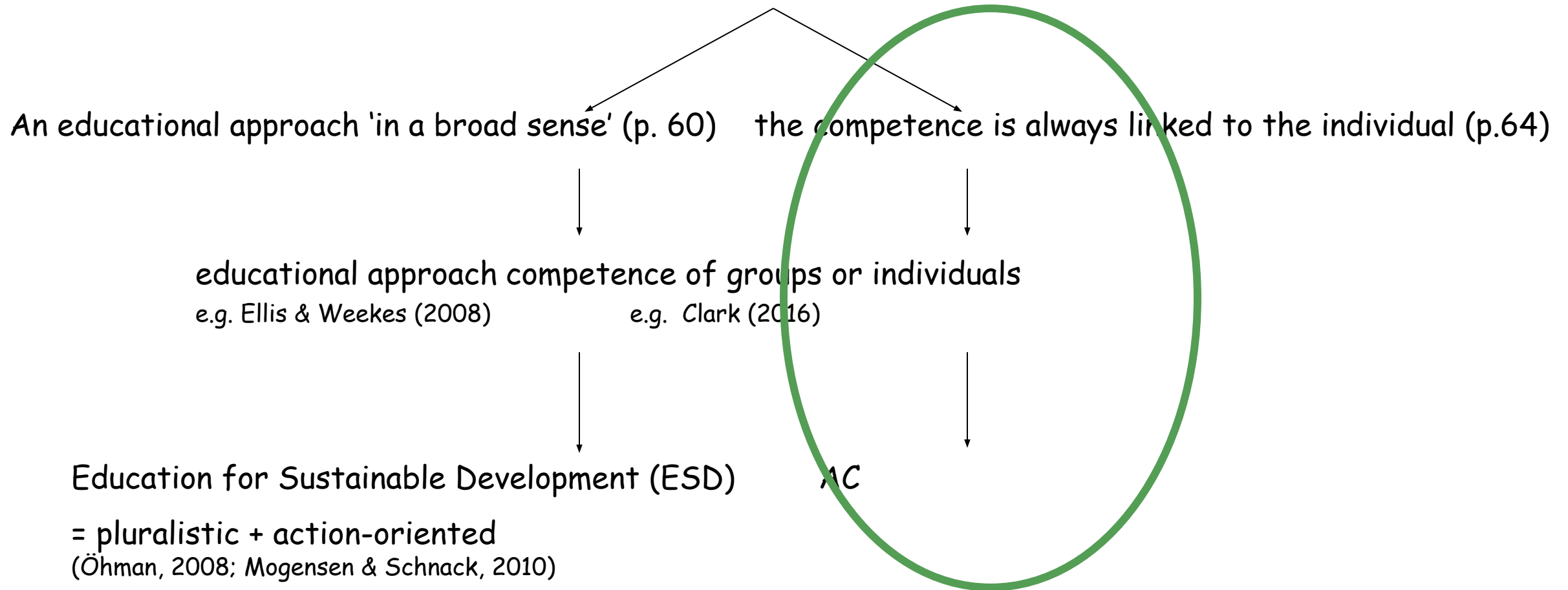


the competence is always linked to the individual (p.64)

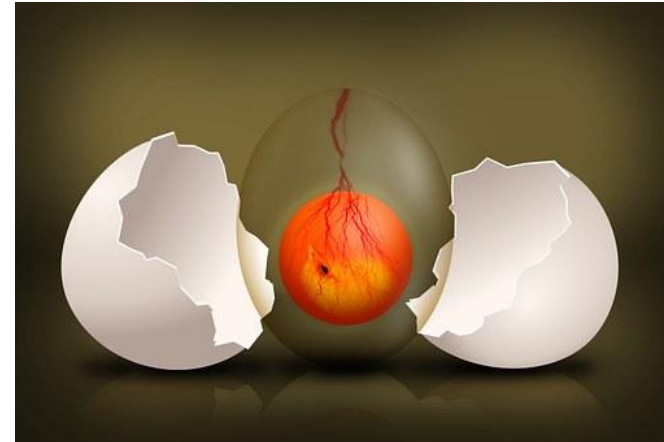
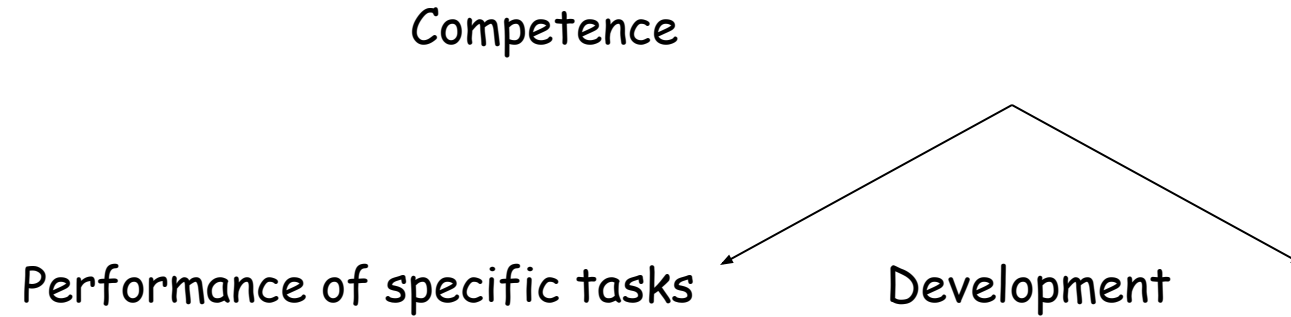
competence of groups or individuals
e.g. Clark (2016)

Action Competence (AC)

Mogensen & Schnack (2010) on AC



Competence

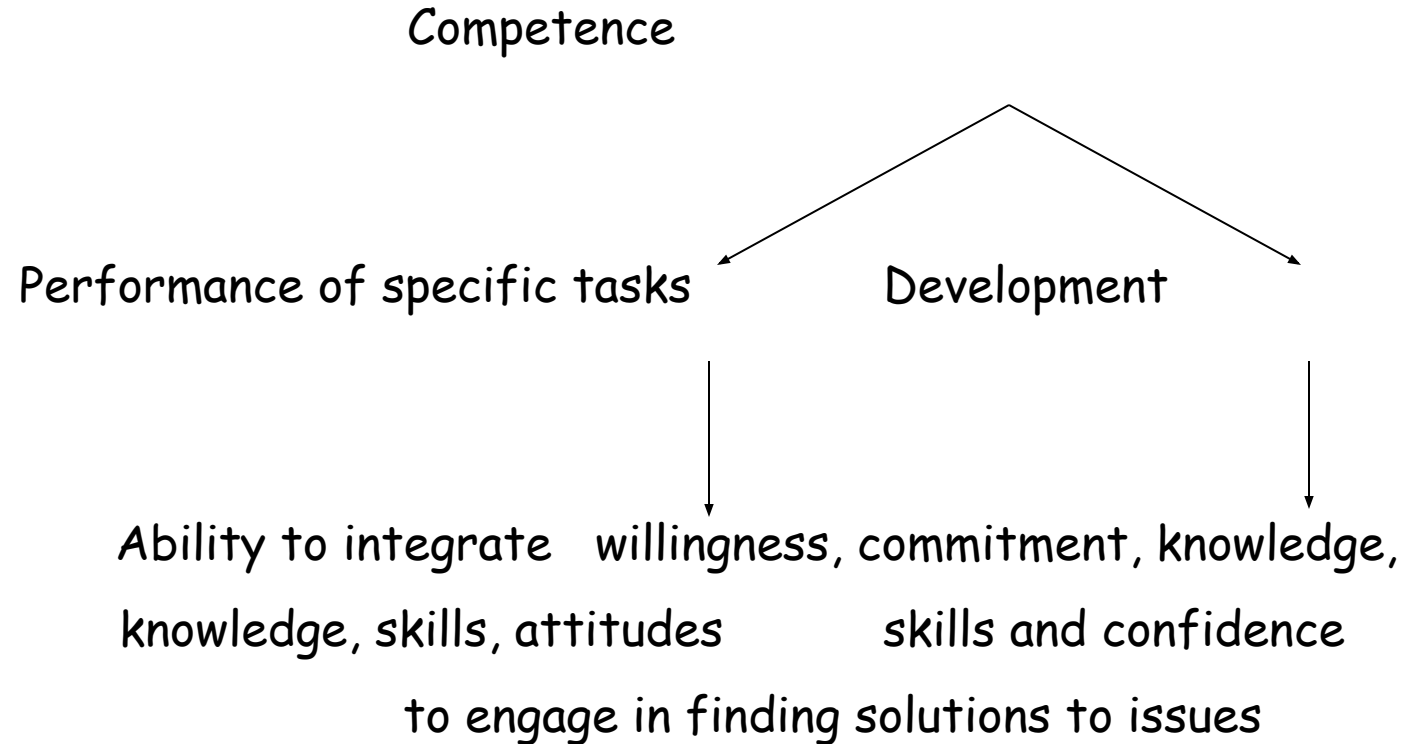


Breiting et al. (2009), Jensen and Schnack (2006),

e.g. Janssen-Noordman et al. (2006)

Mogensen (1997), Mogensen and Schnack (2010)

Competence

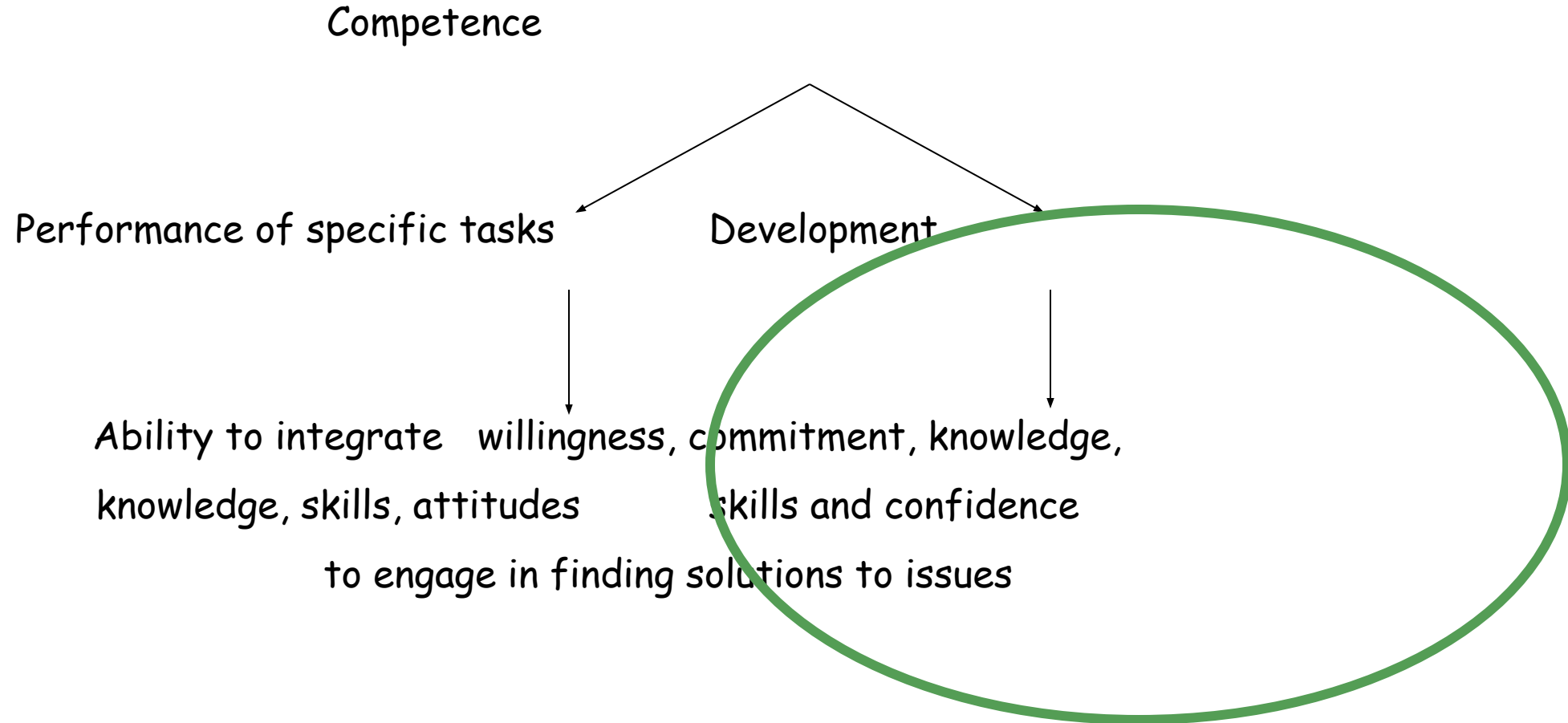


Breiting et al. (2009), Jensen and Schnack (2006),

e.g. Janssen-Noordman et al. (2006)

Mogensen (1997), Mogensen and Schnack (2010)

Competence



Breiting et al. (2009), Jensen and Schnack (2006),

e.g. Janssen-Noordman et al. (2006)

Mogensen (1997), Mogensen and Schnack (2010)

Action

- Purposive behaviour □ forethought and intentionality (cf. Bandura, 2001; 2005)
 - Voluntary (e.g. Jensen, 2000; Mogensen & Schnack, 2010)
 - Directed at solving an issue (e.g. Breiting et al., 2009; Hungerford & Volk, 1990; Jensen, 2000)
- controversy on solution (cf. pluralism; Rudsberg & Öhman, 2010)

Action for Sustainable Development

- Purposive behaviour □ forethought and intentionality (cf. Bandura, 2001; 2005)
- Voluntary (e.g. Jensen, 2000; Mogensen & Schnack, 2010)
- Directed at solving an issue (e.g. Breiting et al., 2009; Hungerford &

Volk, 1990; Jensen, 2000)



& Öhman, 2010)



Action for Sustainable Development

- Purposive behaviour □ forethought and intentionality (cf. Bandura, 2001; 2005)
- Voluntary (e.g. Jensen, 2000; Mogensen & Schnack, 2010)
- Directed at solving a SD issue (e.g. Breiting et al., 2009; Hungerford & Volk, 1990; Jensen, 2000)
controversy on solution (cf. pluralism; Rudsberg & Öhman, 2010)
- Direct and indirect action (Jensen & Schnack, 2006; cf. Bandura's proxy agency, 2001)
- Individual and collective action (Clark, 2016; cf. Levy & Zint's collective civic action, 2013)
- Private and public sphere (e.g. ENEC, 2018; Liobikiene and Simas Poskus, 2019; Melo-Escrihuela, 2008; Soler-i-Martí, 2015)

Competence in AC

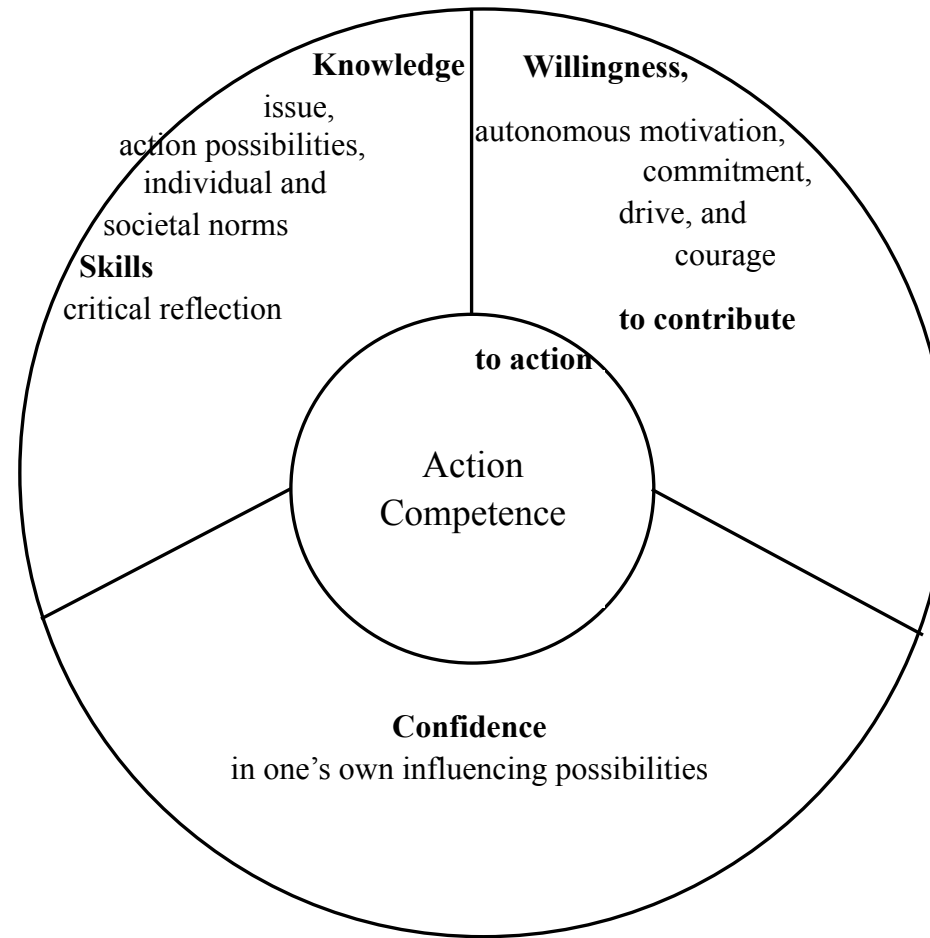


Figure 1 Core features of action competence based on Breiting et al. (2009), Jensen (2000), and Jensen & Schnack (2006)

Competence in AC

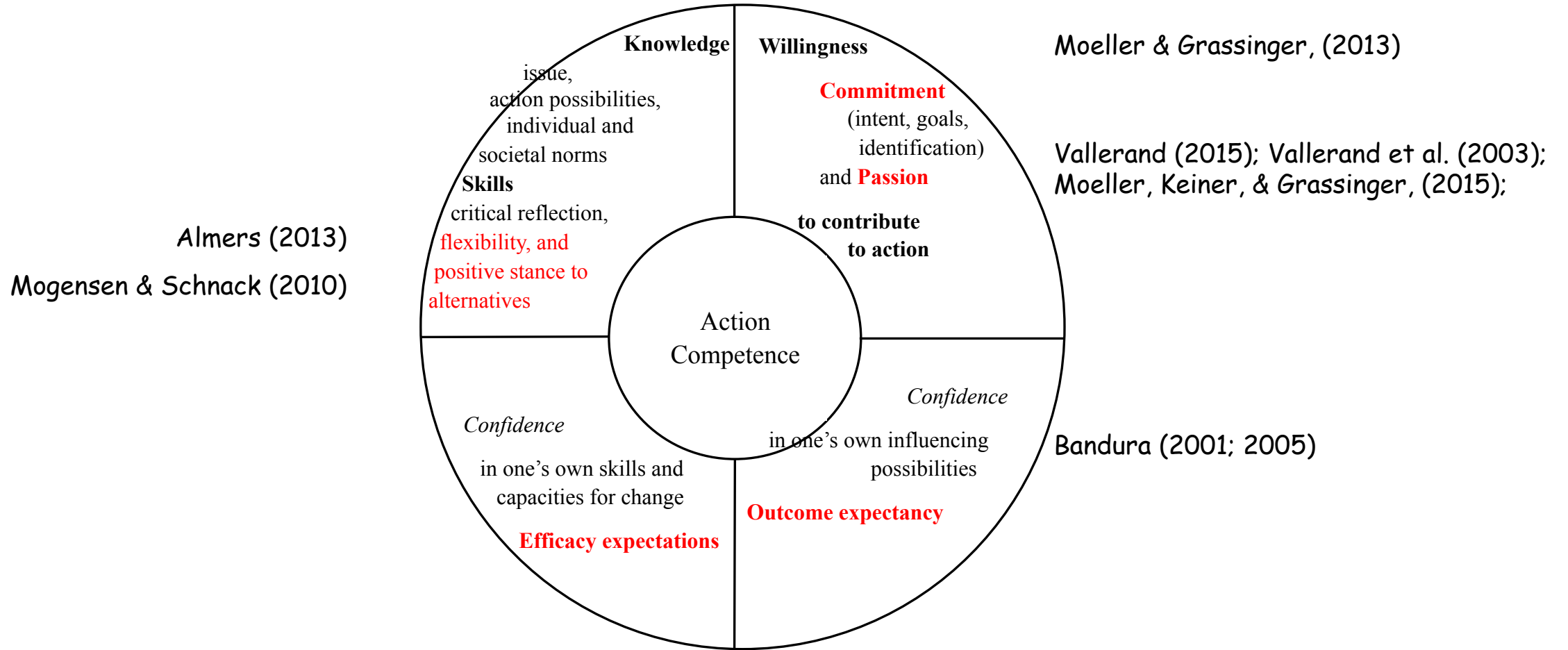


Figure 2 Core features of action competence as further conceptualized

Developing an ACiSD measurement instrument in co-creation with children

3-step Development of ACiSD

in co-creation with children

Development of ACiSD: mixed-method approach

- Our focus:

- early adolescents (10 to 13) (Smetana, Campione-Barr, & Metzger, 2006)
- own perspectives on viable actions for SD (qualitative)
- Measuring SD in all its complexity: interconnected Planet, People, Prosperity, Peace, Partnership (quant.)



Developing an ACiSD measurement instrument in co-creation with children

3-step Development of ACiSD

Development of ACiSD: step 1

in co-creation with children

- Qualitative pre-study: central research question, follow up questions, and participants

How do early adolescents suggest they can contribute to SD?

- What (in)direct actions do 10 to 13-year-olds propose?
- What individual and collective actions do early adolescents propose?
- In what sphere, private or public, are these actions set?

Developing an ACiSD measurement instrument in co-creation with children

3-step Development of ACiSD

Development of ACiSD: step 1

in co-creation with children

- Qualitative pre-study: central research question, follow up questions, and participants

How do early adolescents suggest they can contribute to SD?

- What (in)direct actions do 10 to 13-year-olds propose?
- What individual and collective actions do early adolescents propose?
- In what sphere, private or public, are these actions set?

Participants respected as co-researchers

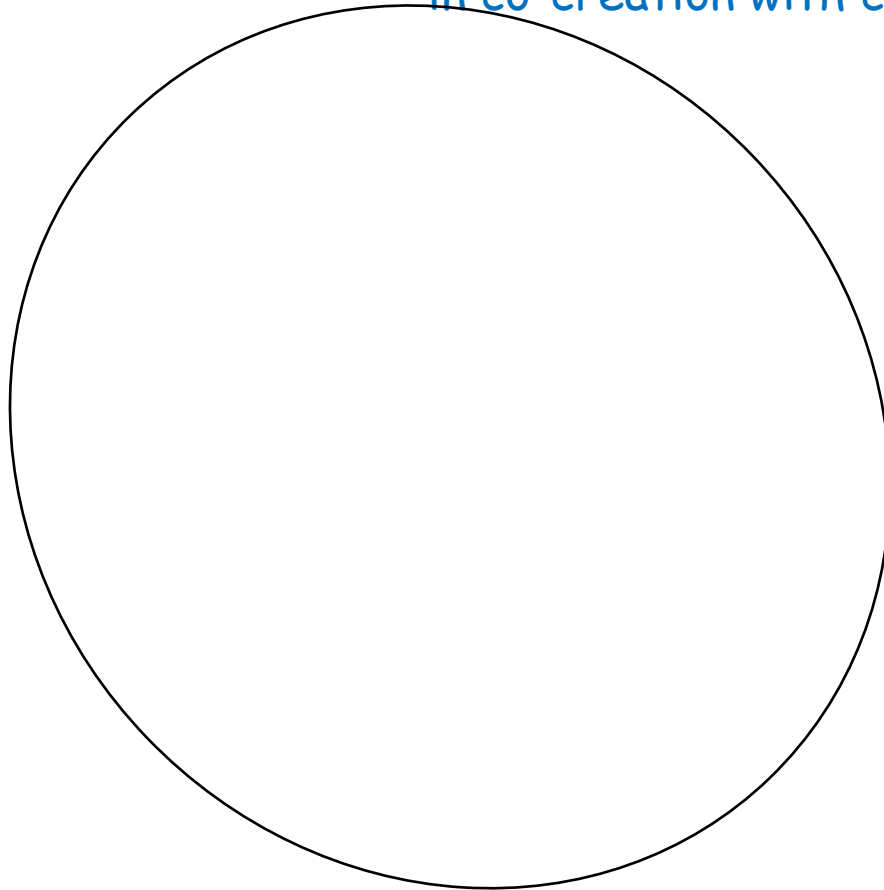
- 76 participants in grades 5 to 7, i.e. 10- to 13-year-olds
- 4 class groups: 2 grades 5, 1 grade 6, 1 grade 7
- 3 schools: 2 primary schools (traditional, Freinet), one secondary (performing arts) school
- Flanders (Dutch-speaking part of Belgium)

Developing an ACiSD measurement instrument in co-creation with children
in co-creation with children

3-step Development of ACiSD

Results

Collective actions



Developing an ACiSD measurement instrument in co-creation with children

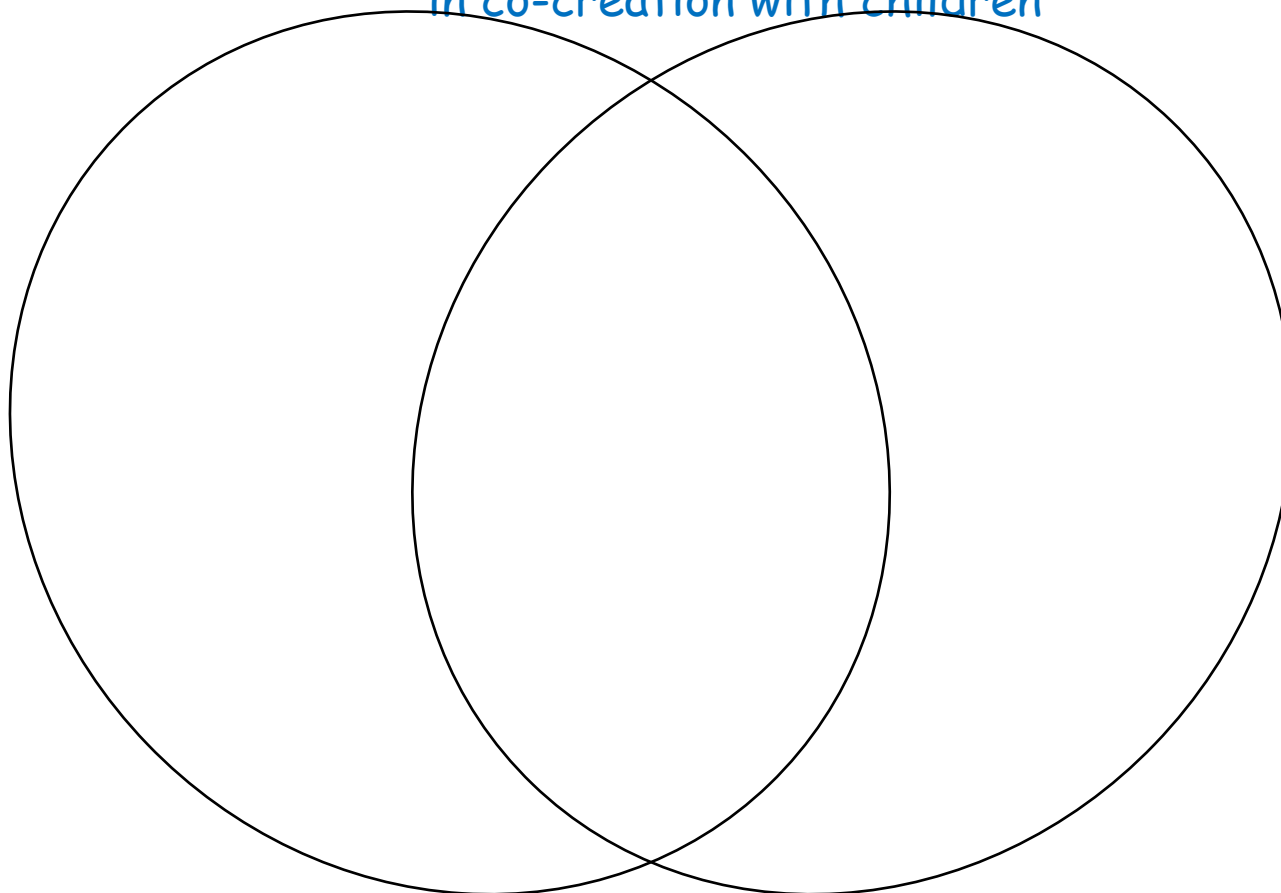
3-step Development of ACiSD

Results

in co-creation with children

Collective actions

Indirect actions



Developing an ACiSD measurement instrument in co-creation with children

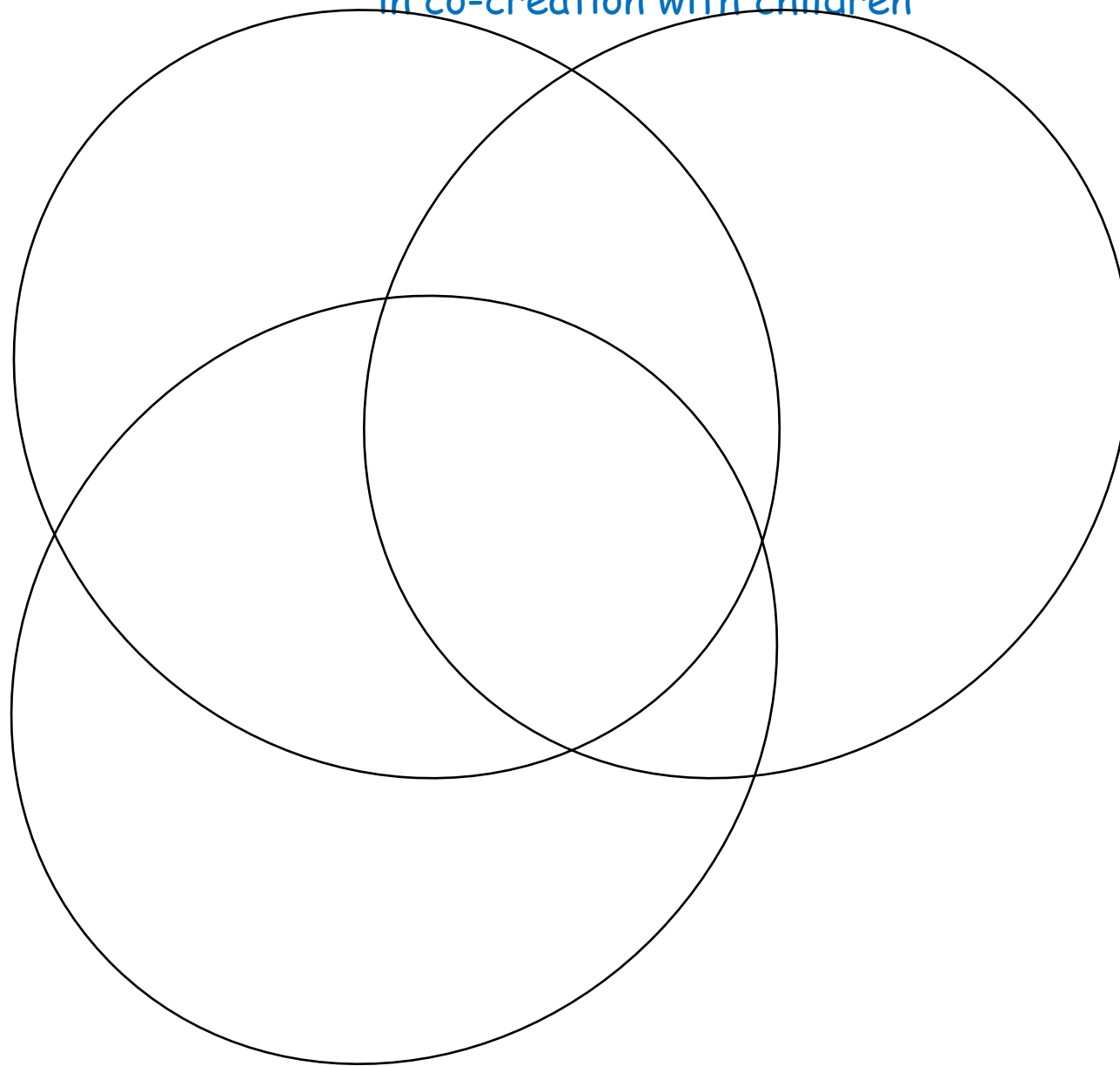
3-step Development of ACiSD

Results

in co-creation with children

Collective actions

Indirect actions



Direct actions

Developing an ACiSD measurement instrument in co-creation with children

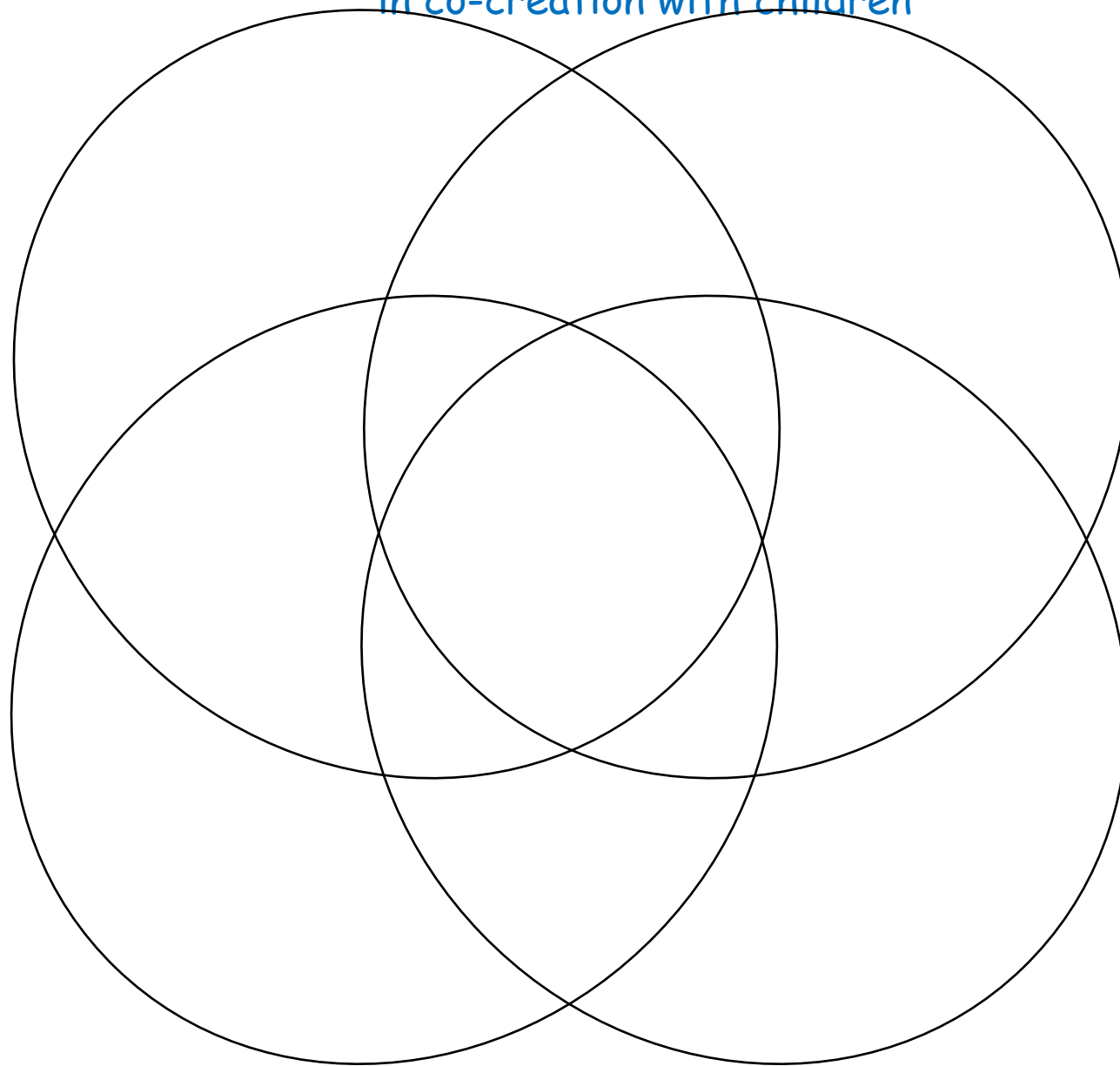
3-step Development of ACiSD

Results

in co-creation with children

Collective actions

Indirect actions



Direct actions

Individual actions

Developing an ACiSD measurement instrument in co-creation with children

3-step Development of ACiSD

Results

in co-creation with children

Collective actions

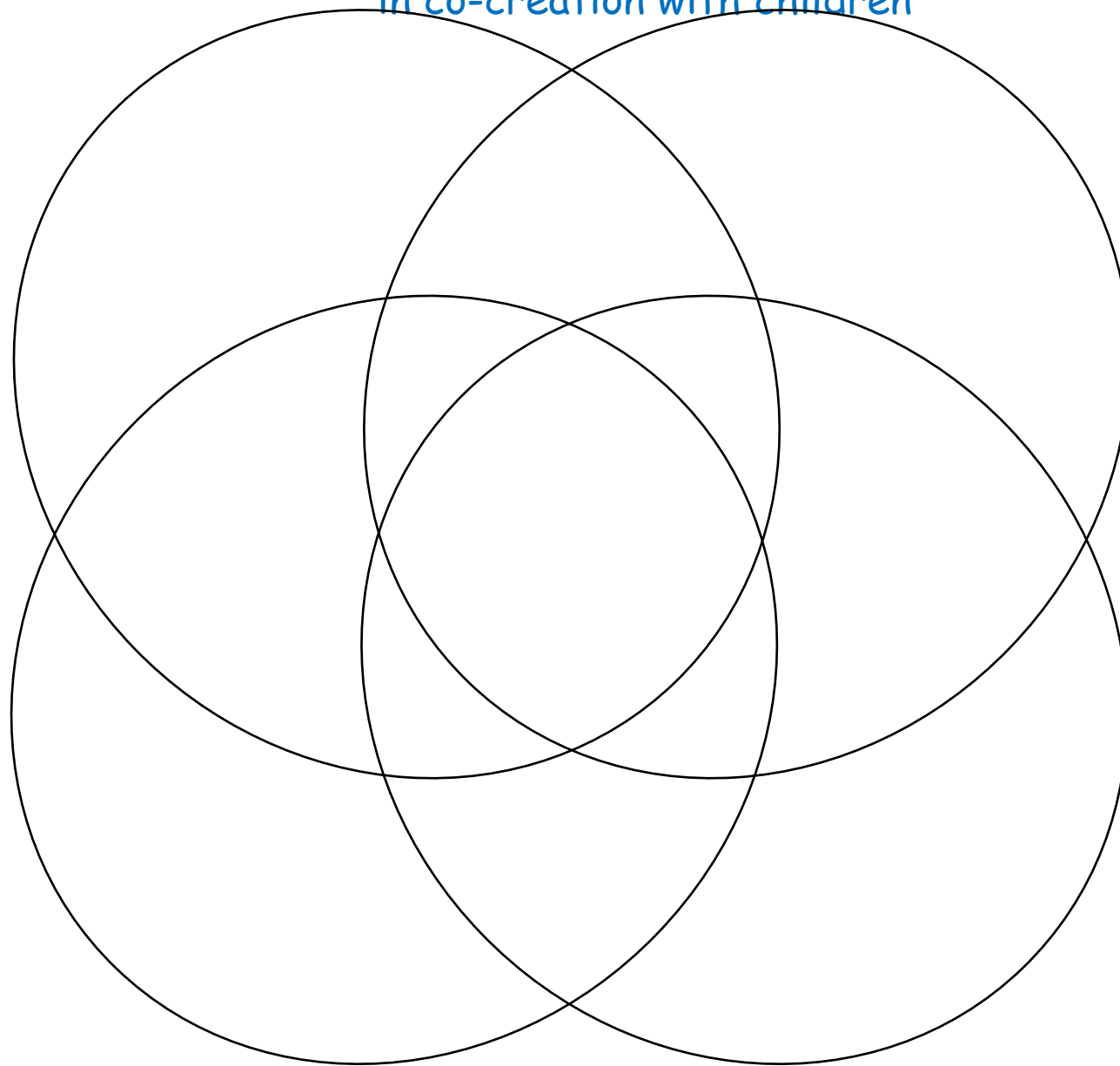
Indirect actions

Private sphere

Public sphere

Direct actions

Individual actions



Developing an ACiSD measurement instrument in co-creation with children

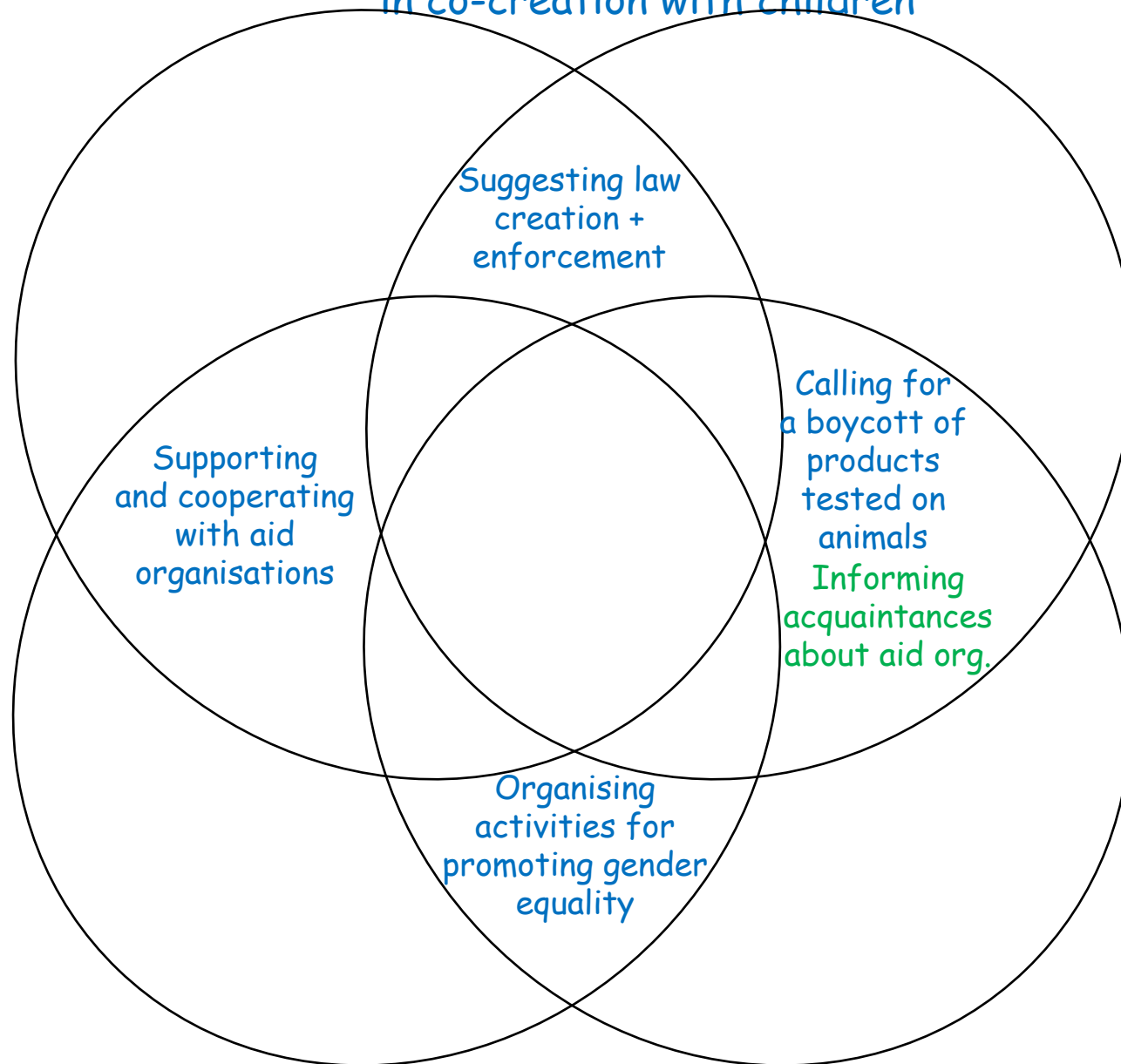
3-step Development of ACiSD

Results

in co-creation with children

Collective actions

Indirect actions



Supporting
and cooperating
with aid
organisations

Suggesting law
creation +
enforcement

Calling for
a boycott of
products
tested on
animals
Informing
acquaintances
about aid org.

Organising
activities for
promoting gender
equality

Private sphere
Public sphere

Direct actions

Individual actions

Developing an ACiSD measurement instrument in co-creation with children

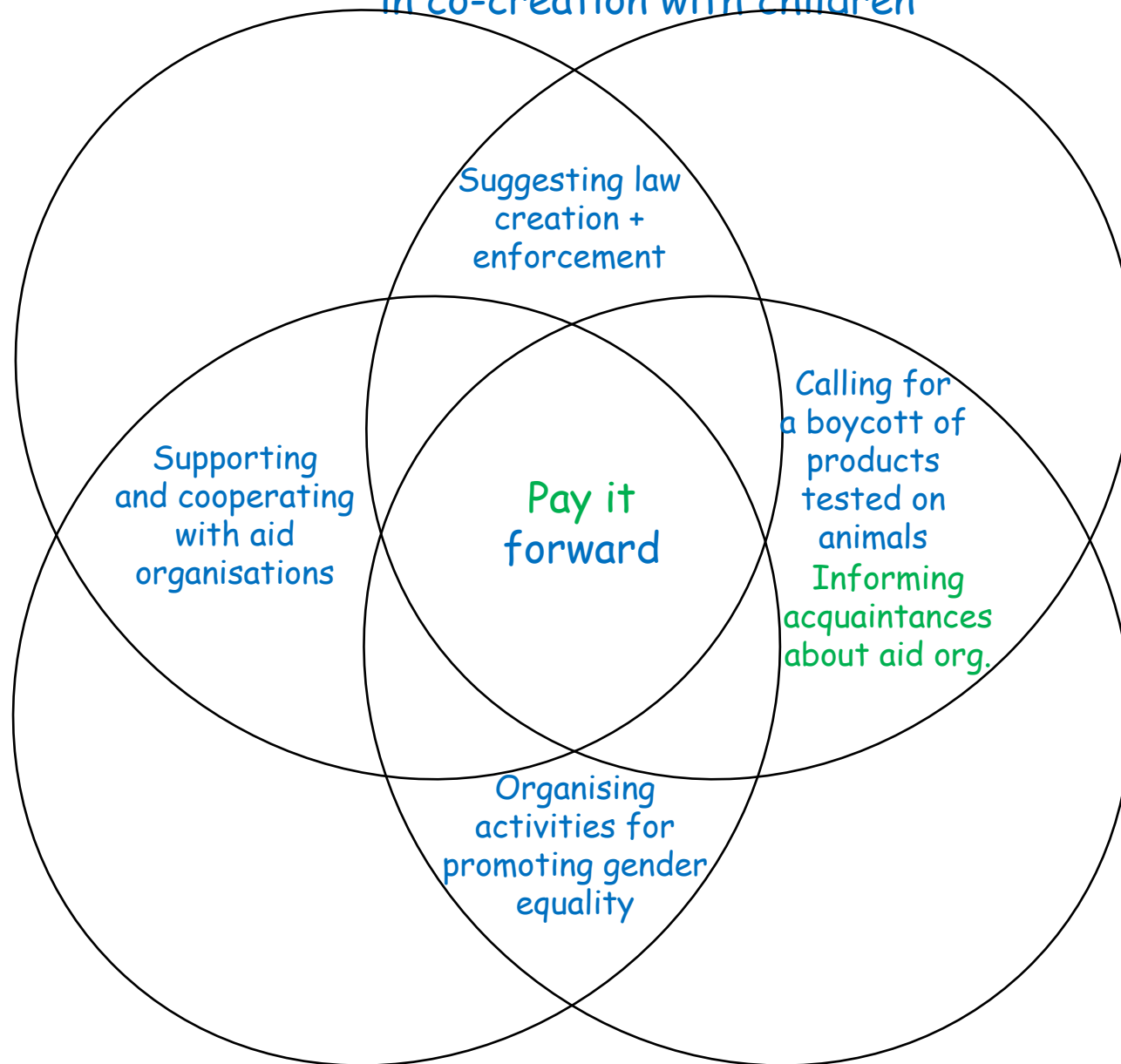
3-step Development of ACiSD

Results

in co-creation with children

Collective actions

Indirect actions



Direct actions

Individual actions

Private sphere
Public sphere

Developing an ACiSD measurement instrument in co-creation with children

3-step Development of ACiSD

in co-creation with children

Results

Private sphere

Public sphere

| Action | Direct | Indirect | Individual | Collective |
|---|--------|----------|------------|------------|
| Starting an aid organisation | X | | | X |
| Suggesting law creation + enforcement | | X | | X |
| Boycotting products tested on animals | X | | X | |
| Informing acquaintances about aid organisations | | X | X | |

Developing an ACiSD measurement instrument in co-creation with children

3-step Development of ACiSD

in co-creation with children

Results

Private sphere

Public sphere

| Action | Direct | Indirect | Individual | Collective |
|------------------------------------|--------|----------|------------|------------|
| Calling for action on social media | X | X | X | X |
| Collecting litter from streets | X | | X | X |
| Pay it forward | X | X | X | X |

Developing an ACiSD measurement instrument in co-creation with children

3-step Development of ACiSD

Development of ACiSD: step 2

in co-creation with children

- 11 items covering SD categories Planet, People, and Peace
 - 4 questions tapping into AC categories (Ac)Knowledge(ment), Willingness, Capacity expectation, and Outcome expectancy
 - feedback round on age-appropriateness of phrasing + (SD) content by
 - Teachers
 - ESD specialists
 - Researchers/SD experts
 - Pre-test:
 - 2 10-year-old children
 - Think aloud
- Adaptation of the ACiSD (phrasing + layout) □ pilot study ($n = 403$; grades 5 to 8)

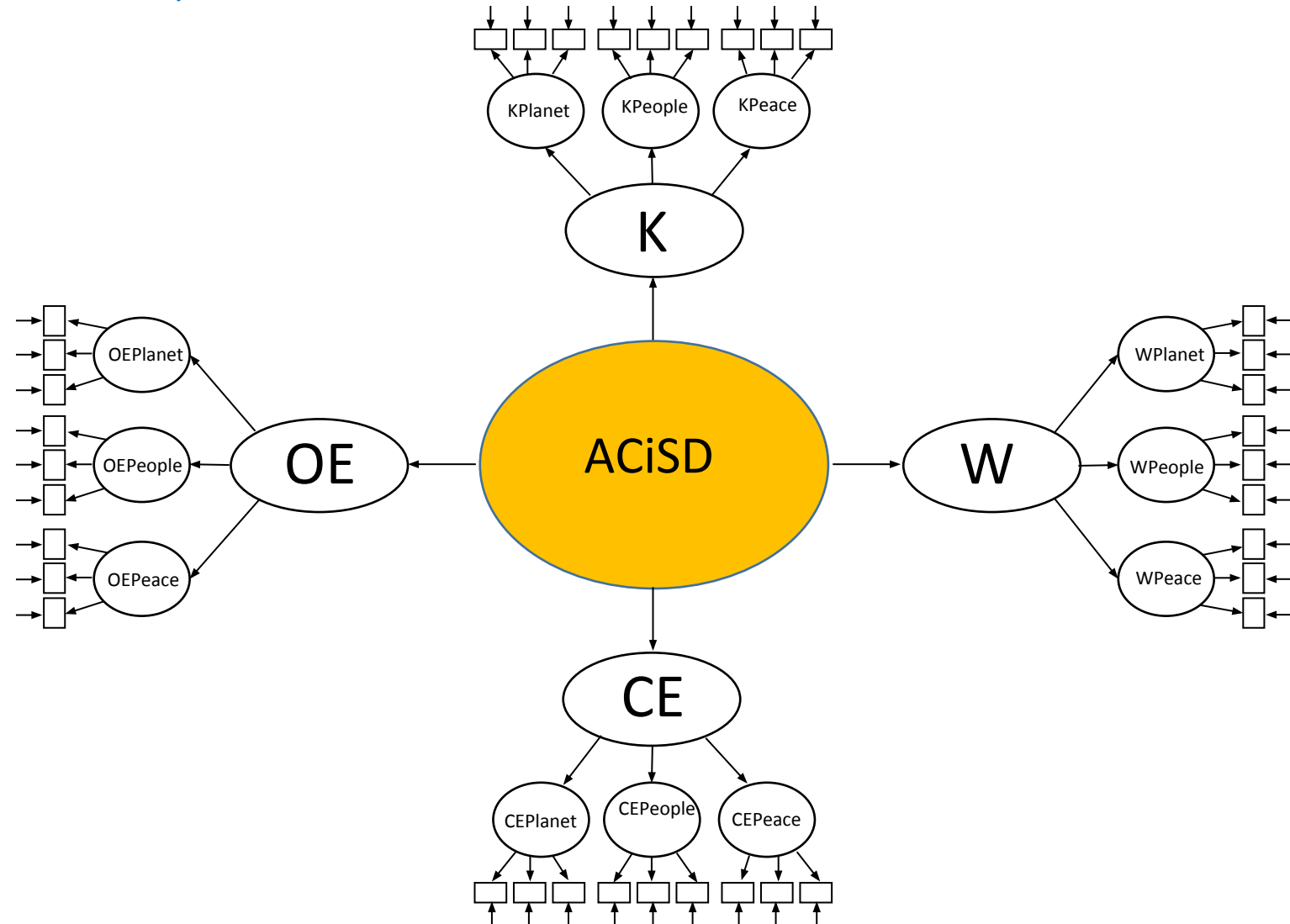
Developing an ACiSD measurement instrument in co-creation with children 3-step Development of ACiSD
in co-creation with children

Development of ACiSD: step 3

- Adaptations based on results of robust CFA → new version administered ($n = 730$; grades 5 to 8)
- SD expert's perspective on the 11 items + results of Robust CFA yielded a model

Developing an ACiSD measurement instrument in co-creation with children ACiSD Model

ACiSD Model to be further explored



Developing an ACiSD measurement instrument in co-creation with children ACiSD Model

ACiSD Model to be further explored

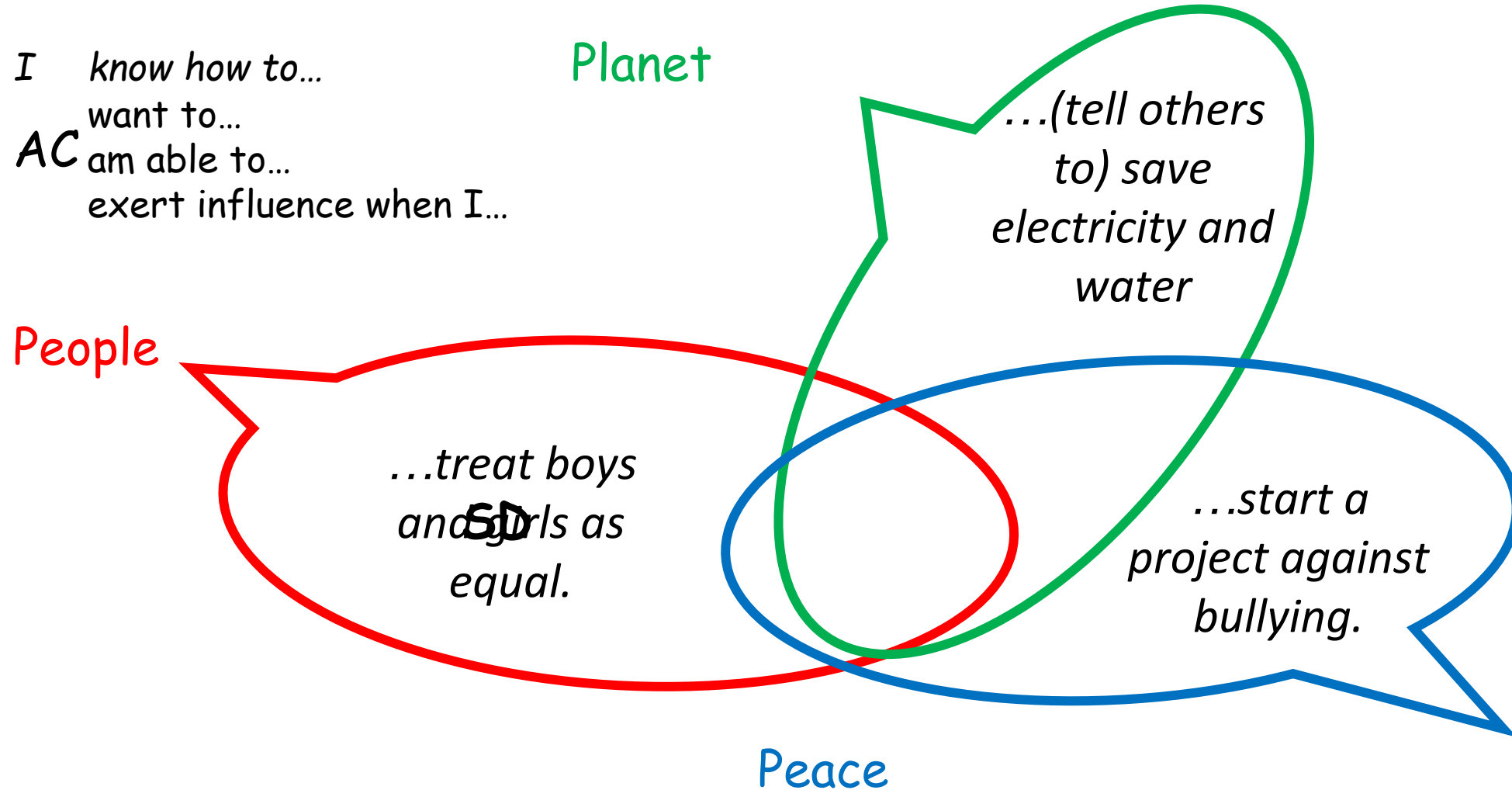
I know how to...

want to...

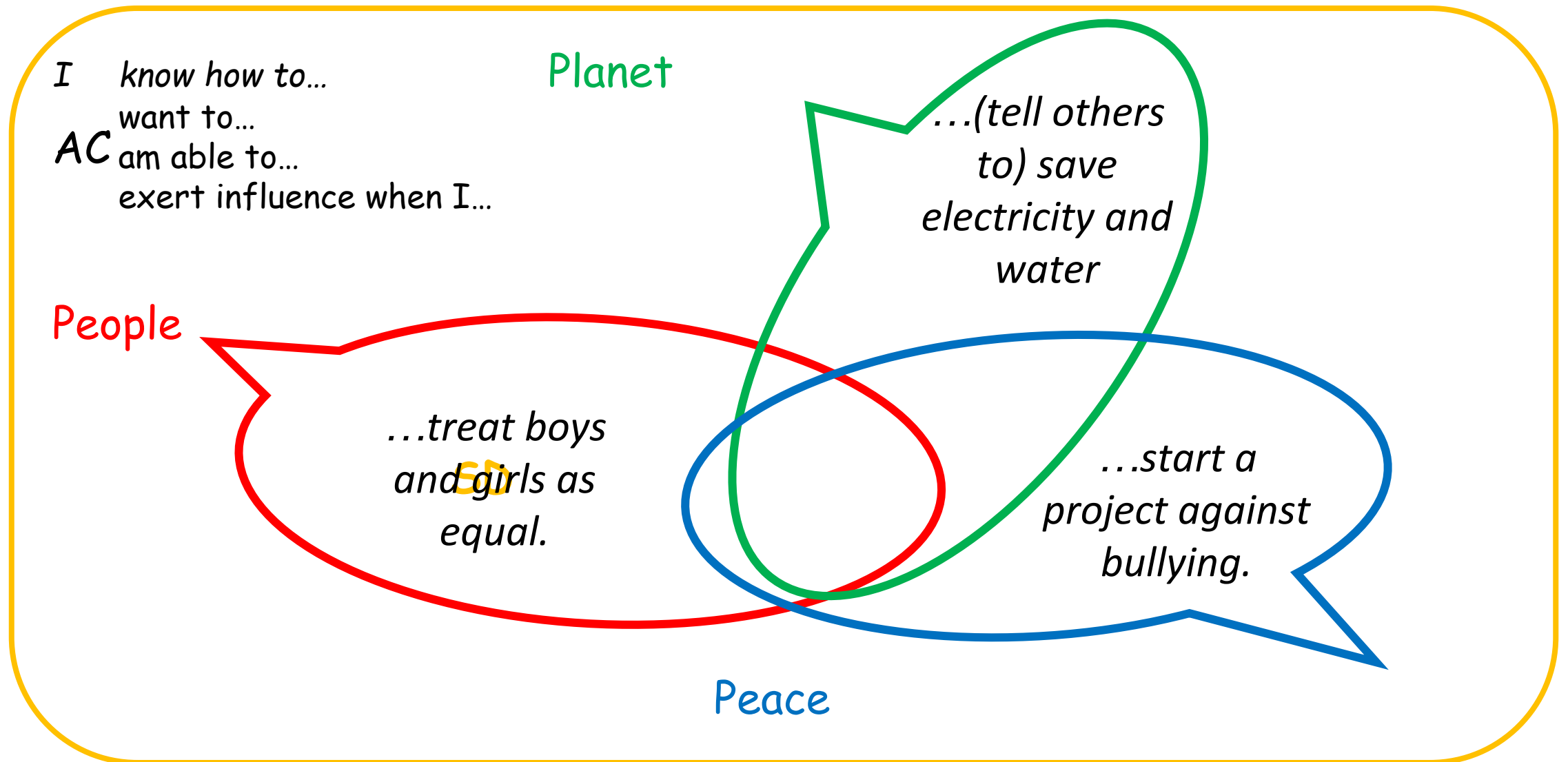
AC am able to...

exert influence when I...

ACiSD Model to be further explored



ACiSD Model to be further explored ACiSD



ACiSD Model to be further explored

| Questions (AC) | | Items (SD) | |
|--|--------------------------------------|---|-----------|
| A. <i>People contribute to a good life for everyone without damaging the planet if they...</i> | A. Knowledge of action possibilities | 1. ... <i>use only products from brands that don't experiment on animals.</i> | 1. Planet |
| B. <i>I want to...</i> | B. Willingness | 2. ... <i>treat boys and girls as equal.</i> | 2. People |
| C. <i>I can...</i> | C. Capacity expectations | 3. ... <i>use social media (such as YouTube) to convey a message for peace.</i> | 3. Peace |
| D. <i>I contribute to a good life for everyone without damaging the planet if I...</i> | D. Outcome expectations | | |

Developing an ACiSD measurement instrument in co-creation with children
Action Competence: terminological issues



Defining Action Competence in Sustainable Development (ACiSD)

Developing a measurement instrument in co-creation with children: 3 steps

Developing an ACiSD measurement instrument in co-creation with children

To be continued...



Developing an ACiSD measurement instrument in co-creation with children



References

- Almers, E. (2013). Pathways to action competence for sustainability—Six themes. *The Journal of Environmental Education*, 44(2), 116-127. doi: 10.1080/00958964.2012.719939
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26.
- Bandura, A., (2005). Adolescent development from an agentic perspective. In F. Pajares, & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (pp. 1-43). Information Age Publishing, Greenwich, CT.
- Breiting, S., Hedegaard, K., Mogensen, F., Nielsen, K., & Schnack, K. (2009). Action competence, conflicting interests and environmental education - the MUVIN programme. *Research Programme for Environmental and Health Education*, DPU (Danish School of Education).
- Clark, C.R. (2016). Collective action competence: an asset to campus sustainability. *International Journal of Sustainability in Higher Education*, 17(4), 559-578.
- Ellis, G., & Weekes, T. (2008) Making sustainability 'real': using group-enquiry to promote education for sustainable development. *Environmental Education Research*, 14(4), 482-500. doi: 10.1080/13504620802308287
- European Network for Environmental Citizenship - ENEC (2018). *Defining "Environmental Citizenship"*. Retrieved from <http://enec-cost.eu/our-approach/enec-environmental-citizenship/>.
- Janssen-Noordman, A.M.B., Merriënboer, J.J.G., van der Vleuten, C.P.M., & Scherpbier, A.J.J.A. (2006). Design of integrated practice for learning professional competences. *Medical Teacher*, 28(5), 447-452. doi: 10.1080/01421590600825276
- Hungerford, H.R. & Volk, T.L. (1990). Changing learner behaviour through environmental education. *Journal of Environmental Education*, 21(3), 8-21.
- Jensen, B.B. (2000). Health knowledge and health education in the democratic health-promoting school. *Health Education*, 100(4), 146-154.
- Jensen, B.B., & Schnack, K. (2006). The action competence approach in environmental education. *Environmental Education Research*, 12(3-4), 471-486.
- Levy, B.L.M., & Zint, M.T. (2013). Toward fostering environmental political participation: framing an agenda for environmental education research. *Environmental Education Research*, 19(5), 553-576. doi: 10.1080/13504622.2012.717218
- Liobikiene, G., & Simas Poskus, M. (2019). The Importance of Environmental Knowledge for Private and Public Sphere Pro-Environmental Behavior: Modifying the Value-Belief-Norm Theory. *Sustainability*, 11, 3324. doi: 10.3390/su11123324

Developing an ACiSD measurement instrument in co-creation with children

References

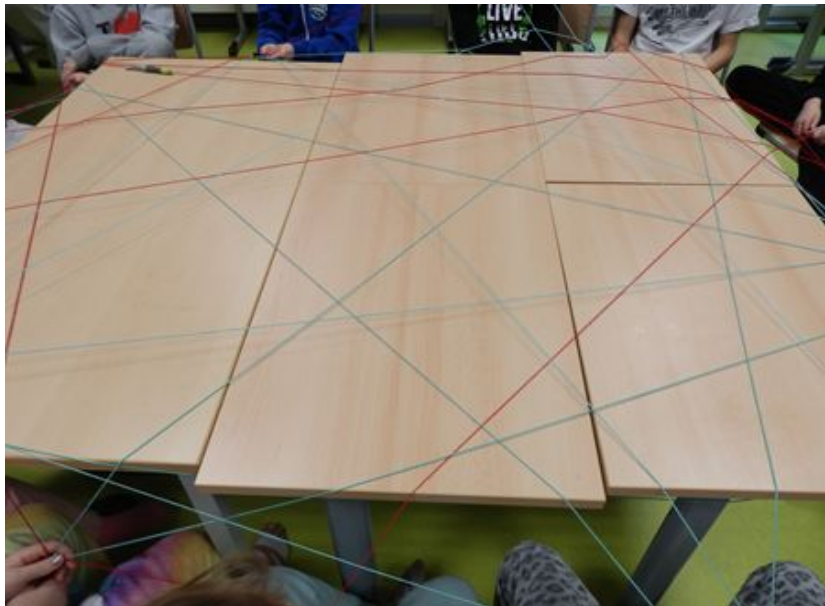
- Melo-Escrihuela, C. (2008). Promoting Ecological Citizenship: Rights, Duties and Political Agency. *ACME: An International E-Journal for Critical Geographies*, 7 (2), 113-134.
- Moeller, J., & Grassinger, R. (2013). A review of passion concepts and their overlaps with commitment: Opening a can of worms. (Doctoral dissertation). Retrieved from <http://www.db-thueringen.de/servlets/DerivateServlet/Derivate-29036/DissJuliaMoeller.pdf>
- Moeller, J., Keiner, M., & Grassinger, R. (2015). Two sides of the same coin: Do the dual 'types' of passion describe distinct subgroups of individuals? *Journal for Person-oriented Research*, 1(3), 131-150. doi: 10.17505/jpor.2015.15
- Mogensen, F. (1997). Critical thinking: a central element in developing action competence in health and environmental education. *Health Education Research*, 12(4), 429-436.
- Mogensen, F., & Schnack, K. (2010). The action competence approach and the 'new' discourses of education for sustainable development, competence and quality criteria. *Environmental Education Research*, 16(1), 59-74. doi: 10.1080/13504620903504032
- Öhman, J. (2008). Environmental ethics and democratic responsibility - A pluralistic approach to ESD. In J. Öhman (Ed.), *Values and democracy in education for sustainable development: Contributions from Swedish research* (pp. 17-32). Malmö: Liber.
- Rudsberg, K., & Öhman, J. (2010). Pluralism in practice - experiences from Swedish evaluation, school development and research. *Environmental Education Research*, 16(1), 95-111. doi: 10.1080/13504620903504073
- Sass, W., Boeve-de Pauw, J., Olsson, D., Gericke, N., De Maeyer, S., & Van Petegem, P. (submitted). Defining action competence: The case of sustainable development.
- Smetana, J. G., Campione-Barr, N., & Metzger, A. (2006). Adolescent development in interpersonal and societal contexts. *Annual Review of Psychology*, 57, 255-284.
- Soler-i- Martí, R. (2015). Youth political involvement update: measuring the role of cause-oriented political interest in young people's activism. *Journal of Youth Studies*, 18(3), 396-416. doi: 10.1080/13676261.2014.963538
- UN (2015). *Transforming our world: the 2030 Agenda for Sustainable Development*. New York: United Nations.
- Vallerand, R.J. (2015). *The psychology of passion. A dualistic model*. Oxford: Oxford University Press.
- Vallerand, R.J., Mageau, G.A., Ratelle, C., Léonard, M., Blanchard, C., Koestner, R., & Gagné, M. (2003). Les passions de l'âme: On obsessive and harmonious passion. *Journal of Personality and Social Psychology*, 85(4), 756-767.

Methods + implications

Intervention: 3 sessions (ca. 2 lesson periods of 50 minutes each)

- Session 1

creating atmosphere of trust; introduction of research in social sciences,
concepts of pluralism and SD/17 SDGs, and central research question no records



SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD



Methods + implications

Intervention: 3 sessions (ca. 2 lesson periods of 50 minutes each)

- Session 1
creating atmosphere of trust; introduction of research in social sciences,
concepts of pluralism and SD/17 SDGs, and central research question no records
- Session 2
participants determined focus point + action first individually,
then either individually or in groups up to 4;
elaboration of the actions (free choice of means of expression) field notes

Methods + implications

Intervention: 3 sessions (ca. 2 lesson periods of 50 minutes each)

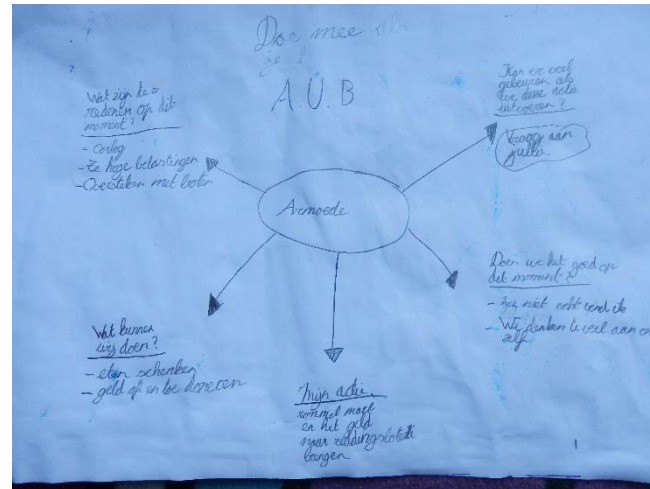
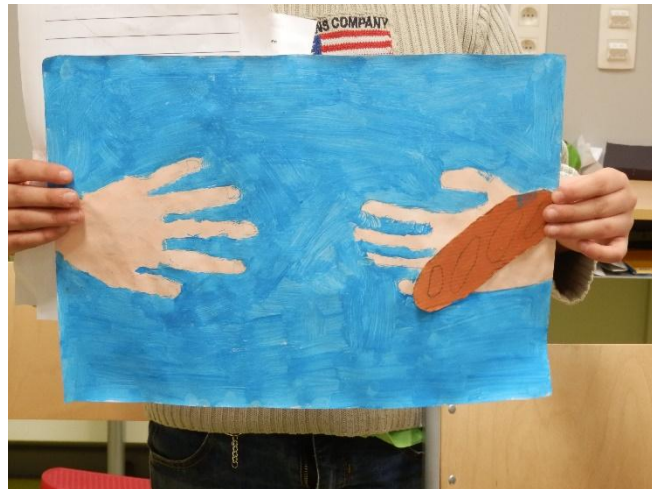
- Session 1
creating atmosphere of trust; introduction of research in social sciences,
concepts of pluralism and SD/17 SDGs, and central research question no records
- Session 2
participants determined focus point + action first individually,
then either individually or in groups up to 4;
elaboration of the actions (free choice of means of expression) field notes
- Session 3 audio and
presentation of actions for SD video recorded
only if parents and participants consented
(verbatim transcriptions)

Developing an ACiSD measurement instrument in co-creation with children Qualitative study

Methods + implications

Multiple methods of data collection:

- observations during sessions
 - Video and audio recordings
 - Short interviews, drama
 - Drawings, mind maps, and art work
- field notes
 - verbatim transcriptions of oral presentations
 - verbatim transcriptions
 - described in transcriptions of presentations



Methods + implications

Analyses:

- Informed by conceptualizations of
 - SD: 17 SDGs + Planet, People, Prosperity, Peace, Partnership (UN, 2015);
 - Action: free choice of who acts + targeted at solving a controversial issue (change)
- 2 researchers coded first together, then individually, and fine tuned interpretations until acceptable consensus was obtained
- 1 researcher continued analyses (horizontally: per code; vertically: per action suggested)

Central Research Question and follow up questions

How do early adolescents suggest they can contribute to SD?

- What (in)direct actions do 10 to 13-year-olds propose?
- What individual and collective actions do early adolescents propose?
- In what sphere, private or public, are these actions set?

Questions that emerged during data gathering and analyses

- What means do early adolescents propose to use in order to achieve SD goals?
- What is the scope of actions for SD that early adolescents propose?
- Where do early adolescents get inspiration for the SD actions they suggest?

Results

- What **means** do early adolescents propose to use in order to achieve SD goals?

Communication: on- and offline, written and spoken, textual and visual (e.g. charts, mind maps)

Commercial activities: fund raising through selling or asking for money,
donating funds, goods, and offering services

Physical activities: collecting litter, taking homeless to shelter, organizing jumble sales,...

- What is the **scope** of actions for SD that early adolescents propose?

ranging from small acts to elaborate, well-thought through projects
both local and global

- Where do early adolescents get **inspiration** for the SD actions they suggest?

feature films, documentaries, role models on YouTube

experiences: own, family, and friends

school

Results pilot version ACiSD

Pilot study (n = 403)

Fit indices robust CFA

- CFI = 0.829
- TLI = 0.819
- RMSEA = 0.05