



Evaluating Action Competence and Environmental Values Among Student Teachers: Impact of Training Programs Addressing Sustainable Development Goals

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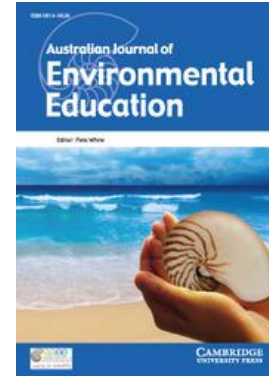
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Introduction and context

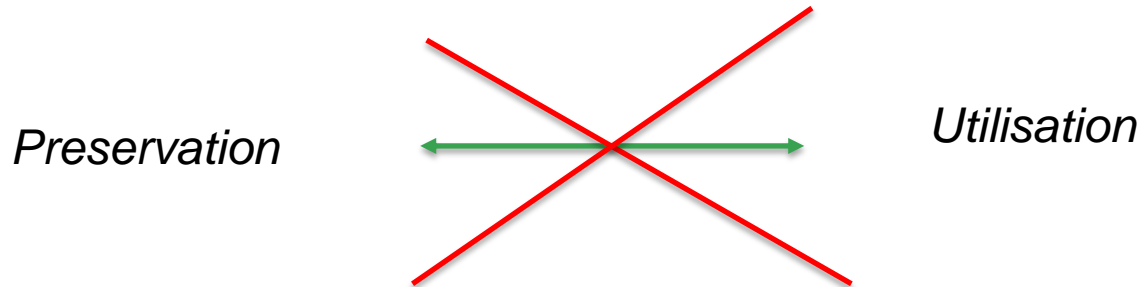
- Paper under review in *Australian Journal of Environmental Education*
- Starting point for a much more wider project : TEACOSSE (TEAcher COmpetence for Sustainability and Environmental Education) funding by UNI-T
- A group of researchers mainly from Aix-Marseille University
- Collaborative work with a colleague from Sweden Eva Nyberg University of Gothenburg (Action Competence)



State of the art and theoretical background

Environmental values, the 2-MEV Model (Bogner & Wiseman, 2006):

The 2-MEV (two Major Environmental values) model is based on two independent value-based dimensions (constructs validated empirically) representing anthropocentric (**Utilization: U**) and ecocentric-biocentric (**Preservation: P**) concerns (Bogner & Wiseman, 2006).



NEP model unidimensionnel: Dunlap et., 2000

State of the art and theoretical background

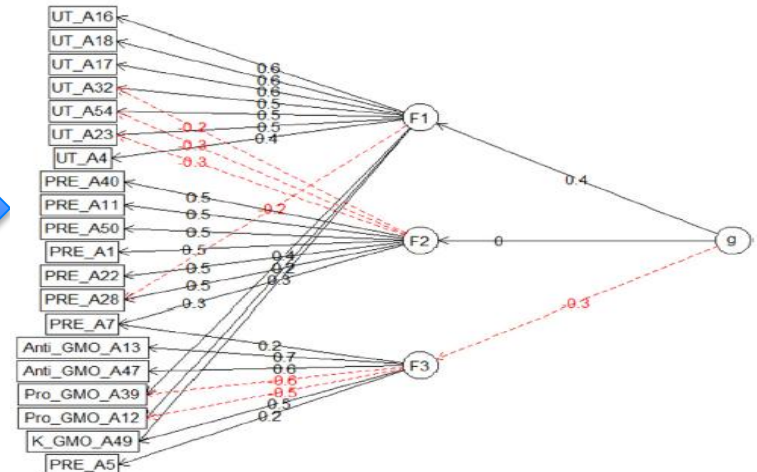
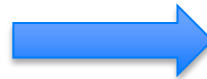
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→ *Pro-Preservation*

→ *Pro-Utilisation*

2 independent factors, 2-MEV : Bogner & Wiseman, 2006.



HFA: 2 basic orthogonal factors for the 2-MEV (N= 10651)
+ a factor about GMO (Castéra, Clément, Munoz & Bogner, 2018)

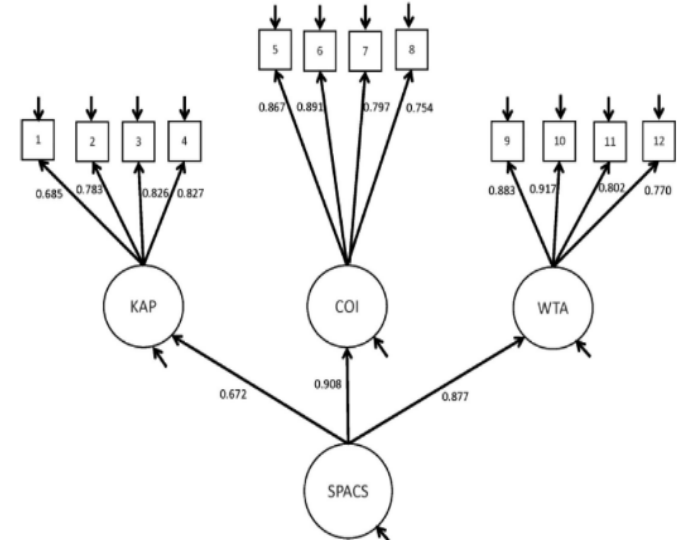
State of the art and theoretical background

Action competence (Olsson *et al.*, 2020, Sass *et al.*, 2020):

The overall will, confidence, and knowhow to bring about sustainability transformations

3 main components:

- Knowledge of Action Possibilities (KAP)
- Confidence in One's own Influence (COI)
- Willingness to act (WTA).



Self-Perceived Action Competence for Sustainability Model (SPACS)
Designed and validated with secondary school students

State of the art and theoretical background

Connections between Action competence and value?

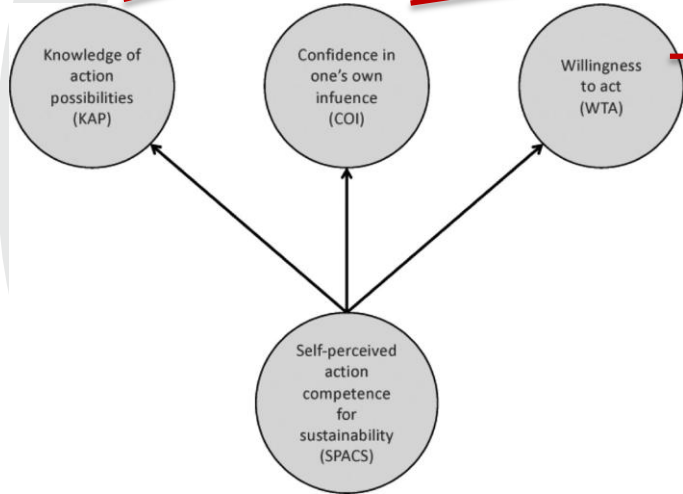
It has often been assumed that values are the basis for forming an action competent person (e.g., Chong & Cheah, 2009, Mauer & Bogner, 2020, etc.)

Research questions

- (1) To what extent can the SPACS-Q and the 2-MEV be used to analyse action competence and environmental values in a sample of French primary school student teachers?
- (2) What are the links between self-perceived action competence for sustainability and environmental values?
- (3) Does age and training in sustainability issues influence attitudes related to self perceived action competence?

methodology

Questionnaire (exemples of items)



SPACS: 12 items

I know how one should take action together with others in order to contribute to sustainable societal development.

I believe I can influence global sustainable development through my actions

I want to engage in changing society towards sustainable development.

2-MEV (15 items):

Preservation : Industrial smoke from chimneys makes me angry

Utilisation : Our planet has unlimited natural resources

methodology

Participants:

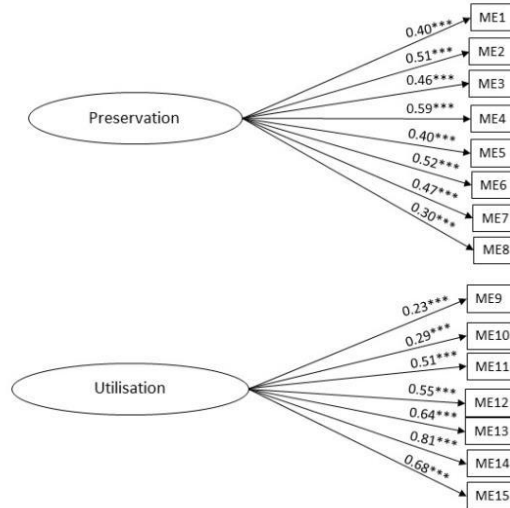
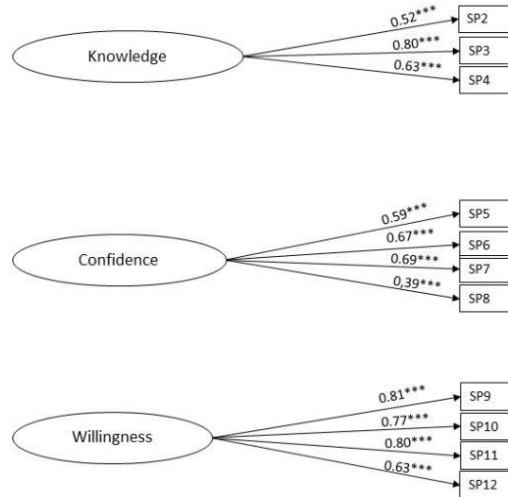
- 236 primary school student teachers in the last year of their master's degree studies
- Data were collected anonymously between April 2022 and June 2022 using Sphinx Software

Analyses (Lavaan and Psych packages in R software):

Confirmatory factor analysis -> fitting of the model (RQ1)

Structural equation model -> links between values and action competence (RQ2) & influence of age and training in Sustainability (RQ3)

Results & discussion



CFA

Relationship between observed variables and their latent constructs = confirmation of 5-factor model (RQ1)

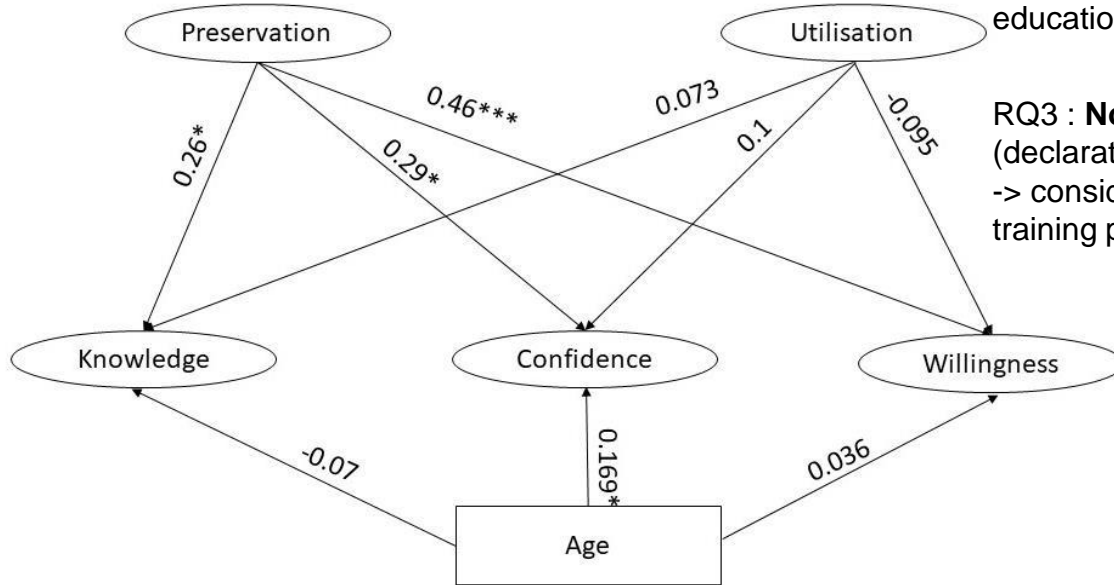
Chi sq	DF	p-Value	RMESA	SRMR	CFI
546.832	289.000	<0.001	0.0615	0.0746	0.831

Results & discussion

RQ2: Confirmation of **relationships** but **only** regarding the **factor Preservation** in the environmental values

-> promoting action competence would be most efficient if educational content focused on supporting preservation of the environment rather than promoting abstaining from exploitative use of the environment (education for “Hope” better than education by fear).

RQ3 : **No impact of training in sustainable program followed** (declarative basis) and small impact of age (more confident)
-> consider action competence in not sufficient in teacher training programs



Implications

Funded by the UNI-T project (ERASMUS+) new analyses are engaged:



- Using a much more appropriate tool for the evaluation of professional action competence of teachers (Sass, 2022: PACesd)
- Test the impact of training programs in ESD (pre-post and control group)
- In different contexts : France, Italy, Greece.

Thank you for your attention



ECONOMY

Building on the biosphere and society, the economic goals direct attention towards industry, innovation and infrastructure; reduced inequalities; responsible consumption and production; and decent work and economic growth that is decoupled from environmental degradation.



SOCIETY

The goals addressing societal issues, call for the eradication of poverty, and the improvement of social justice, peace and good health. Social development depends upon a protected biosphere. In addition, the goals on clean energy, no poverty, zero hunger, peace and justice, sustainable cities, education, gender equality and good health are the foundation for the goals related to the economy.



BIOSPHERE

Protecting the biosphere is an essential precondition for social justice and economic development. If we do not achieve the goals related to clean water and sanitation, life below water, life on land, and climate action, the world will fail to achieve the remaining goals.

