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Research Article

The impact of educational strategies on primary school students' attitudes towards climate change: A comparison of three European countries

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ABSTRACT

Climate education is becoming a key educational issue of our time. This also brings with it increased demands for educational research in this area. One important question is how climate attitudes are constructed to support students' willingness to act towards climate change. In this paper, we explore how participatory, holistic and community-based learning approaches influence the construction of climate attitudes in school students from the Czech Republic, Portugal, and the UK (n=473; M=13.49 years). Students' perceptions of different educational strategies were nearly the same across countries. Girls perceive holistic, values-based teaching more strongly. Of the strategies studied, holistic education has the greatest influence on the formation of climate attitudes (β=0.34 for climate change beliefs, β=0.32 for climate change intentions), and community-based teaching has a partial influence (β=0.13 for climate change intentions). It is thus the use of holistic and community-based educational approaches that is key to the successful implementation of climate education.

Keywords: climate change attitudes, pluralistic education, holistic education, community-based education, climate change education

INTRODUCTION

Today's society is dealing with many new challenges that require new solutions at all levels. Whether it is the global pandemic of COVID-19, Russian aggression in Ukraine or the climate crisis, the world must respond to these challenges in a timely and appropriate manner. And at the same time prepare new generations for these challenges. The most powerful strategy to prepare the next generation to meet the challenges of the present and future world is education (Sund, 2015). In the case of the global problem addressed in this text, man-made climate change and its impacts, we are talking about climate change education (CCE), which is seen as an effective mitigation strategy due to its nature and the education of future generations (Lehnert et al., 2019). It is a relatively new field of education, the theoretical basis of which is being consolidated with the increasing results of research (Nepraš et al., 2022). These cover a wide range of topics, but there are still uncharted areas that should be addressed (Rousell & Cutter-Mackenzie-Knowles, 2019). We will try to describe one of these areas. Specifically, it concerns the climate attitudes of primary school students (ISCED 2) and the ways in which they are influenced by the perceived educational approaches implemented at school. Within these approaches we pursue modern strategies identified as meaningful in the implementation of environmental education–participatory, holistic, and community-based approaches (Činčera et al., 2022).

Climate Change Attitudes

Attitudes are one of the key topics in psychology and their research is very intensive (Bohner & Dickel, 2011). An attitude is generally defined as a relatively enduring evaluation of a topic, object or person (Bizer et al., 2006). Attitudes differ in their resistance to change and thus in their permanence. Research on attitudinal change is also crucial from an educational perspective because they significantly affect the teaching effect (Richardson, 1996).

Attitudes associated with perceptions of ongoing climate change are of interest to researchers, often as part of the broader concept of climate literacy (Azevedo & Marques, 2017). Their actual structure is perceived differently by different researchers. Most often, attitudes towards climate change are seen as a set of sub-attitudes such as belief in climate change, belief that it is man-made, political attitudes, hope and concern about climate change (Rode et al., 2021). The role of climate change concern is often highlighted as the strongest within attitudes towards climate change and this variable has been tracked by many researchers (e.g., Jakučionytė-Skodienė & Liobikienė, 2021; Kuthe et al., 2019; Milfont, 2012). Simpler conception of attitudes towards climate change was introduced by Christensen and Knezek (2015) when validating an instrument designed to measure these attitudes. This instrument uses fifteen items to ascertain Beliefs about climate change and Intentions associated with it. The instrument is designed for teenagers and is used in this research study.

A number of factors influence attitudes towards climate change. For the adult population, political affiliation is the most commonly cited (Ehret et al., 2016), with more skeptical attitudes expressed by supporters of conservative policies. Regarding interventions aimed at changing attitudes towards climate change, Rode et al. (2021) conducted a meta-analysis of 76 independent experiments and documented that the observed interventions generally have a small positive effect, but that the actual type of intervention does not play a role and that respondents' beliefs about climate change are more easily influenced than their political beliefs.

Attitudes of primary and secondary school students have been monitored in several countries. In Finland, Hermans and Korhonen (2017) documented that students of the 9th grade perceive climate change as a risk that needs to be prevented by appropriate mitigation strategies. The more positive the students' attitudes towards climate change were, the higher the students' willingness to act was. In the Czech Republic, the topic was addressed by Kolenatý et al. (2022), who pointed out the significant impact of knowledge about climate change on primary school students' willingness to act. This relationship is moderated by attitudes towards climate change, specifically the concerns associated with it. Milfont (2012) reached a similar conclusion in his longitudinal study in New Zealand. Kuthe et al. (2019) divided Austrian and German 13-16 years old teenagers into four groups based on cognitive, affective, and conative aspects of climate change awareness. They named these four groups disengaged, paralyzed, charitables, and concerned activists, with the group names well implying the characteristics of their members. Devine-Wright et al. (2004) used an experiment to highlight the importance of cooperative learning in the UK 9-12 years old students, which led to an increase in perceived self-efficacy and climate change beliefs compared to a control group. In a review study involving multiple international studies, Corner et al. (2015) concluded that young people's climate change views are determined by their values and worldview and that the effectiveness of information-based interventions and message framing also play an important role.

Participatory, Holistic, and Community-Based Education

Participatory education is often seen as learning that takes place outside formal learning institutions (Castelloe & Watson, 1999; Francis & Carter, 2001). In school settings, we see it as a combination of pluralistic and emancipatory approaches that hand over some control over teaching to students and emphasize their views. Thus, the pluralist approach emphasizes different perspectives on problems and their solutions (Olsson et al., 2015). The second segment of participatory education is emancipative approaches in which students are given the space to choose the educational content together with the teacher and at the same time be co-creators of how the learning will take place (Wals et al., 2008).

Holistic education emphasizes the interconnectedness of the contemporary world, the equality of people from different regions of the world and all living organisms, and the temporal aspect where students view

learning also in terms of the past and the future. Holistic education focuses on the development of universalistic values (Schwartz, 1994), which must play a significant role in education (Gultekin et al., 2013). Holistic education also leads to a deepening of students' sustainable knowledge (Boeve-de Pauw et al., 2015), which is closely related to mitigation behavior.

Community-based education has its roots in place-based education (Coughlin & Kirch, 2010). It often takes place outdoors, at the school site, and addresses or helps to address school, city, and community issues. In solving these problems, students are not alone, but they connect with other stakeholders in their community. This brings education closer to their daily lives, which also increases their motivation (Rosser-Mims & Maloney, 2017).

These educational approaches are positive predictors of environmental literacy (Činčera et al., 2022), helping students to develop qualities that lead to responsible behavior. Their influence on attitudes towards climate change has not yet been investigated internationally. The main aim of our study is to find out how different educational approaches influence the construction of students' attitudes towards climate. Additional research aims are to identify differences in the perceived educational approaches of students in the three European countries and to determine whether these perceptions are influenced by the gender of the respondents.

Therefore, in this text we seek answers to the following questions:

1. What are the differences in the perception of the observed educational approaches between students from the Czech Republic, the UK, and Portugal?
2. What is the influence of the gender of the respondents on their perception of the educational approaches studied?
3. How do the observed educational approaches influence students' climate attitudes?

METHODOLOGY

Questionnaire

Learning strategies were measured by a total of fifteen items to which students expressed their level of agreement on a five-point Likert scale (agree–rather agree–do not know how to decide–rather disagree–disagree). The items were divided into three dimensions according to the strategies pursued: participatory (seven items, α=0.81), holistic (five items, α=0.79), and community (three items, α=0.69). The full scale can be found in **Appendix A**.

A 16-item research instrument developed by Christensen and Knezek (2015) was adapted to measure attitudes towards climate change. It consists of two scales, beliefs (nine items, α=0.86) and Intentions (seven items, α=0.71). The Intentions scale was partially modified after pilot testing. Respondents express their level of agreement for each item on the same five-point scale as for the educational strategies.

Respondents

Respondents were students at primary schools (ISCED 2) from three European countries. Of the 473 respondents, 304 were from the Czech Republic, 125 from the UK, and 44 from Portugal. The age of the respondents ranged from 10 to 16 (M=13.49, standard deviation [SD]=1.34). It was a gender balanced group with 239 girls and 234 boys. Data collection took place in the winter period 2021/2022 during the COVID-19 pandemic and was thus done electronically, using Google Forms. The respondents included in the survey are based on the available sample given the limitations associated with the persistent COVID-19 pandemic. Respondents come from three countries in different geographical sub-regions of Europe–Western, Southern, and Central. This is linked to different personal experiences of the manifestations of climate change and the different nature of the social debate on the issue. The advantage of such a selection is that the results are to some extent transferable to a wider European context.

Data Analysis

Data were analyzed using IBM SPSS 28. T-test was used to compare two groups, one-way ANOVA followed by Scheffe's post-hoc test was used to compare multiple groups. Effect size for t-test was calculated using

Table 1. Perceptions of educational strategies (full set of respondents, n=473)

	Mean	Standard deviation	Median
Participatory	3.51	0.80	3.57
Holistic	3.59	0.89	3.60
Community	2.56	1.06	2.33

Table 2. Gender comparison (t-test)

	$Mean_{girls}$	Standard deviation	$Mean_{boys}$	Standard deviation	t	Cohens' d
Participatory	3.56	0.79	3.47	0.83	1.16	0.11
Holistic	3.70	0.84	3.49	0.93	2.56**	0.24
Community	2.54	1.03	2.57	1.09	-.034	-0.03

Note. **p<0.01

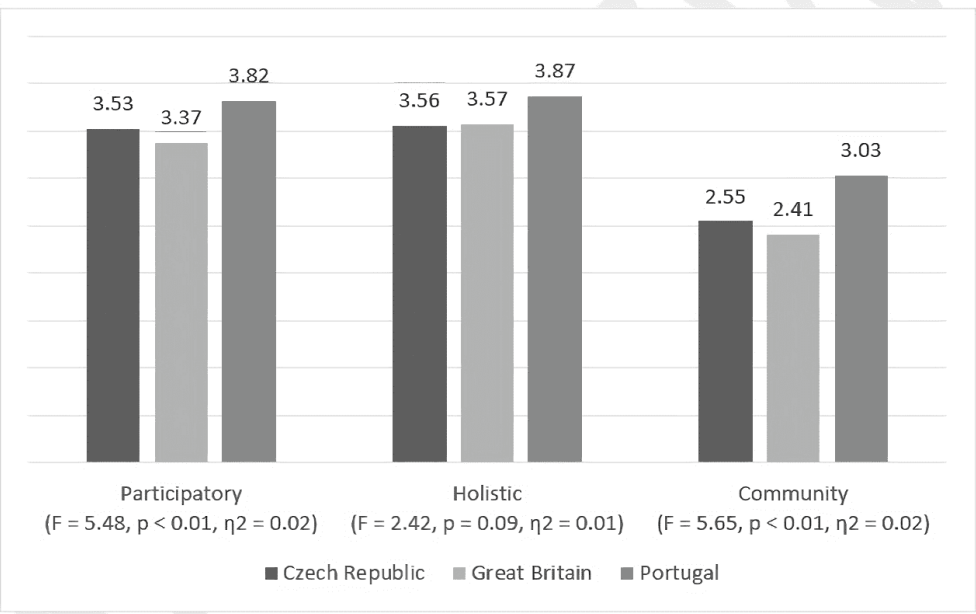

Figure 1. International comparison (one-way ANOVA) (Source: Authors)

Cohen's d (small effect=0.2, average effect=0.5, large effect>0.8), for ANOVA test using η2 (small effect=0.01, average effect=0.06, large effect>0.14). Effect size tells us how meaningful the observed differences are. The higher the effect size values, the more substantial the differences found. Correlations were investigated using Pearson's correlation coefficient, and linear regression was performed to investigate the effect of educational strategies on attitudes towards climate change.

RESULTS

Firstly, we will present how each of the observed educational strategies is perceived by primary school students. Then we examine whether there are differences in the perception of these strategies between genders and between countries. In the last section of this chapter, we describe how perceived strategies influence attitudes towards climate change.

Students' perception of the selected educational strategies is relatively high. Students perceive the participatory and holistic approach as above average in their schools, and the community approach as average (**Table 1**).

Gender differences are found only in the case of the holistic approach, but the observed effect is relatively small. For the other two approaches, there is no significant difference in perception between girls and boys (**Table 2**).

Comparing the three educational strategies studied based on the nationality of the respondents, we find that statistically significant differences exist only in the case of participatory and community-based approaches (**Figure 1**).

Table 3. Correlation matrix for educational strategies & climate change attitudes (Pearson)

	Participatory	Holistic	Community	CC believes
Participatory				
Holistic	0.66**			
Community	0.47**	0.36**		
CC believes	0.24**	0.35**	0.07	
CC intentions	0.22**	0.31**	0.02	0.70**

Note. **p<0.01

Table 4. Regression analyses for effect of educational strategies on CC attitudes

	R^2	Participatory (β)	Holistic (β)	Community (β)
Believes	0.12	0.05	0.34**	-0.07
Intentions	0.11	0.07	0.32**	0.13*

Note. *p<0.05; **p<0.01; R^2: Proportion of variance of dependent variable explained by the independent one; & β: Degree of change in the outcome variable for every unit of change in the predictor

Subsequent post-hoc analysis shows that there is a significant difference between the UK and Portugal in the case of the participatory approach (p=.01). Then, in the case of the community-based approach, there are differences between Portugal and the Czech Republic (p=.02) and Portugal and the UK (p<.01).

Correlation analysis showed low to moderate correlations between the participatory approach and both dimensions of attitudes towards climate change. The same statement applies to the holistic approach. The results of the community-based approach do not correlate with climate attitudes at all (**Table 3**).

The observed educational strategies explain the relatively small proportion of climate attitudes. As can be seen from **Table 4**, holistic education has a significant impact on both climate change beliefs and climate change intentions. The Intentions dimension is then also significantly influenced by community-based educational approaches.

DISCUSSION

The research investigated students' perceptions of three educational strategies and their influence on climate attitudes. In the general, participatory, and holistic learning achieved the highest values, where their perceived perceptions were above average. Then, for community-based learning, the results were only average. This is probably due to the demanding nature of these educational approaches for teachers. While emancipatory, pluralistic, and holistic approaches can be implemented relatively easily during regular classroom instruction, community-based approaches are less common and require more demanding preparation, collaboration with other stakeholders and in most cases leaving the classroom environment (Činčera et al., 2016).

In the gender comparison, girls scored significantly higher on perceptions of holistic learning. This is consistent with other research in the field of environmental education (Goodale, 2021; Tuncer Teksoz et al., 2013), where girls repeatedly show themselves to be more sensitive to their own values and attitudes.

If we make an international comparison between students from the Czech Republic, the UK, and Portugal, we find that the results are not very different. In the area of participatory approach, Portugal scores significantly higher than the UK, and in the case of community-based learning, Portugal scores significantly higher than the other two countries. However, the effect size of these statistically significant differences is small. Thus, it is evident that although some differences were found, the three countries studied are quite close to each other in terms of implementing pluralistic, holistic, and community-based learning. This is probably due to similar socio-cultural backgrounds and shared values that lead to a liberal conception of education (Kelly, 2020).

Climate attitudes were divided into two segments in the research, Believes and Intentions. Regression analysis showed that both dimensions are positively affected by a holistic approach to education. A holistic approach to education emphasizes the interconnectedness of the individual elements and looking at the world as a whole. Given the complexity of ongoing climate change, then, this education is arguably a key approach that helps to explain complex systems while being underpinned by universal values.

A greater emphasis on holistic education thus leads to the development of climate attitudes that can ultimately foster students' willingness to act (Hermans & Korhonen, 2017). Similar positive, albeit relatively low, impacts of a holistic approach have also been documented for the topic of sustainability in general (Boeve-de Pauw et al., 2015; Olsson et al., 2015).

In the case of Intentions, i.e., attitudes leading directly to action, community-based learning also played a significant role. This may be related to the fact that community and place-based learning deals with real-world problem solving and when successfully implemented, it increases the self-efficacy and locus of control of learners who are thus "unafraid" of further activities (Ceaser, 2012, Činčera et al., 2022). The importance of participatory (i.e., pluralistic, and emancipatory) learning could not be demonstrated in this regard, which may be related to its lower interconnectedness with the holistic approach (Boeve-de Pauw et al., 2015), although the correlations we found between the educational approaches were strong.

CONCLUSION

Climate education is becoming a key educational issue of our time. Along with it, the importance of pedagogical research in the field of climate education is increasing. One aspect that is worthy of research is how students' climate attitudes are formed in school. In this paper, we provide evidence of the importance of holistic and community-oriented approaches to teaching for the formation of such attitudes. These are similarly influenced by the mentioned educational strategies across Europe, specifically in three countries, the Czech Republic, the UK, and Portugal.

Limitations and Recommendations for Future Research

In some aspects, this study has the character of an initial research, which should be followed up in the future by other studies that will put even more emphasis on the international aspect. A limitation of the research is in the number of respondents and the sample selection, which was based on the authors' capabilities and COVID-19 situation. Second limitation may be the research instruments used, which may not capture the educational approaches under study in their full complexity.

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Declaration of interest: Authors declare no competing interest.

Data availability: Data generated or analyzed during this study are available from the authors on request.

REFERENCES

Azevedo, J., & Marques, M. (2017). Climate literacy: A systematic review and model integration. *International Journal of Global Warming, 12*(3/4), 414. https://doi.org/10.1504/IJGW.2017.084789

Bizer, G. Y., Barden, J. C., & Petty, R. E. (2006). Attitudes. *Encyclopedia of Cognitive Science*. https://doi.org/10.1002/0470018860.s00483

Boeve-de Pauw, J., Gericke, N., Olsson, D., & Berglund, T. (2015). The Effectiveness of education for sustainable development. *Sustainability, 7*(11), 15693-15717. https://doi.org/10.3390/su71115693

Bohner, G., & Dickel, N. (2011). Attitudes and attitude change. *Annual Review of Psychology, 62*(1), 391-417. https://doi.org/10.1146/annurev.psych.121208.131609

Castelloe, P., & Watson, T. (1999). Participatory education as a community practice method. *Journal of Community Practice, 6*(1), 71-89. https://doi.org/10.1300/j125v06n01_06

Ceaser, D. (2012). Our school at Blair grocery: A case study in promoting environmental action through critical environmental education. *The Journal of Environmental Education, 43*(4), 209-226. https://doi.org/10.1080/00958964.2011.637094

Christensen, R., & Knezek, G. (2015). The climate change attitude survey: Measuring middle school student beliefs and intentions to enact positive environmental change. *International Journal of Environmental and Science Education, 10*(5), 773-788.

Činčera, J., & Kroufek, R. (2021). *Metodika pro výzkum environmentální gramotnosti* [*The guidelines for environmental literacy assessment*]. Ministry of Environment of the Czech Republic.

Činčera, J., Jančaříková, K., Matějček, T., Šimonová, P., Bartoš, J., Lupač, M., & Broukalová, L. (2016). *Environmentální výchova z pohledu učitelů* [*Environmental education from the perspective of teachers*]. BEZK, Agentura Koniklec a Masarykova Univerzita [BEZK, Agency Koniklec and Masaryk University].

Činčera, J., Kroufek, R., & Bogner, F. X. (2022). The perceived effect of environmental and sustainability education on environmental literacy of Czech teenagers. *Environmental Education Research*. https://doi.org/10.1080/13504622.2022.2107618

Corner, A., Roberts, O., Chiari, S., Völler, S., Mayrhuber, E. S., Mandl, S., & Monson, K. (2015). How do young people engage with climate change? The role of knowledge, values, message framing, and trusted communicators. *WIREs Climate Change, 6*(5), 523-534. https://doi.org/10.1002/wcc.353

Coughlin, C. A., & Kirch, S. A. (2010). Place-based education: A transformative activist stance. *Cultural Studies of Science Education, 5*(4), 911-921. https://doi.org/10.1007/s11422-010-9290-6

Devine-Wright, P., Devine-Wright, H., & Fleming, P. (2004). Situational influences upon children's beliefs about global warming and energy. *Environmental Education Research, 10*(4), 493-506. https://doi.org/10.1080/1350462042000291029

Ehret, P. J., Sparks, A. C., & Sherman, D. K. (2016). Support for environmental protection: An integration of ideological-consistency and information-deficit models. *Environmental Politics, 26*(2), 253-277. https://doi.org/10.1080/09644016.2016.1256960

Francis, C. A., & Carter, H. C. (2001). Participatory education for sustainable agriculture: Everyone a teacher, everyone a learner. *Journal of Sustainable Agriculture, 18*(1), 71-83.https://doi.org/10.1300/j064v18n01_06

Goodale, T. (2020). Impact of gender and college major on student levels of environmental concern and knowledge. *International Electronic Journal of Environmental Education, 11*(1), 1-12. https://doi.org/10.18497/iejeegreen.713165

Gultekin, M., Cigerci, F. M., & Merc, A. (2013). Holistic education. *Journal of Education and Future, 3*, 53-60.

Hermans, M., & Korhonen, J. (2017). Ninth graders and climate change: Attitudes towards consequences, views on mitigation, and predictors of willingness to act. *International Research in Geographical and Environmental Education, 26*(3), 223-239. https://doi.org/10.1080/10382046.2017.1330035

Jakučionytė-Skodienė, M., & Liobikienė, G. (2021). Climate change concern, personal responsibility and actions related to climate change mitigation in EU countries: Cross-cultural analysis. *Journal of Cleaner Production, 281*, 125189. https://doi.org/10.1016/j.jclepro.2020.125189

Kelly, P. (2020). Liberal education in turbulent times: Policy, pedagogy and their effects in European comparison. *London Review of Education, 18*(1), 35-49. https://doi.org/10.18546/lre.18.1.03

Kolenatý, M., Kroufek, R., & Činčera, J. (2022). What triggers climate action: The impact of a climate change education program on students' climate literacy and their willingness to act. *Sustainability, 14*(16), 10365. https://doi.org/10.3390/su141610365

Kuthe, A., Keller, L., Körfgen, A., Stötter, H., Oberrauch, A., & Höferl, K. M. (2019a). How many young generations are there?–A typology of teenagers' climate change awareness in Germany and Austria. *The Journal of Environmental Education, 50*(3), 172-182. https://doi.org/10.1080/00958964.2019.1598927

Lehnert, M., Fiedor, D., Frajer, J., Hercik, J., & Jurek, M. (2019). Czech students and mitigation of global warming: Beliefs and willingness to take action. *Environmental Education Research, 26*(6), 864-889. https://doi.org/10.1080/13504622.2019.1694140

Milfont, T. L. (2012). The interplay between knowledge, perceived efficacy, and concern about global warming and climate change: A one-year longitudinal study. *Risk Analysis, 32*(6), 1003-1020. https://doi.org/10.1111/j.1539-6924.2012.01800.x

Nepraš, K., Strejčková, T., & Kroufek, R. (2022). Climate change education in primary and lower secondary education: Systematic review results. *Sustainability, 14*(22), 14913. https://doi.org/10.3390/su142214913

Olsson, D., Gericke, N., & Chang Rundgren, S. N. (2015). The effect of implementation of education for sustainable development in Swedish compulsory schools–assessing pupils' sustainability consciousness. *Environmental Education Research, 22*(2), 176-202. https://doi.org/10.1080/13504622.2015.1005057

Richardson, V. (1996). The role of attitudes and beliefs in learning to teach. In J. Sikula (Ed.) *Handbook of research on teacher education* (pp. 102-119). Macmillan.

Rode, J. B., Dent, A. L., Benedict, C. N., Brosnahan, D. B., Martinez, R. L., & Ditto, P. H. (2021). Influencing climate change attitudes in the United States: A systematic review and meta-analysis. *Journal of Environmental Psychology, 76*, 101623. https://doi.org/10.1016/j.jenvp.2021.101623

Rosser-Mims, D., & Maloney, J. (2017). The historical and contemporary relevance of the interconnectivity of community, community-based education, and transformative education. *International Journal of Adult Vocational Education and Technology, 8*(1), 47-56. https://doi.org/10.4018/ijavet.2017010105

Rousell, D., & Cutter-Mackenzie-Knowles, A. (2019). A systematic review of climate change education: Giving children and young people a 'voice' and a 'hand' in redressing climate change. *Children's Geographies, 18*(2), 191-208. https://doi.org/10.1080/14733285.2019.1614532

Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human values? *Journal of Social Issues, 50*(4), 19-45. https://doi.org/10.1111/j.1540-4560.1994.tb01196.x

Sund, L. (2015). Facing global sustainability issues: Teachers' experiences of their own practices in environmental and sustainability education. *Environmental Education Research, 22*(6), 788-805. https://doi.org/10.1080/13504622.2015.1110744

Tuncer Teksoz, G., Boone, J., Tuzun, O. Y., & Oztekin, C. (2013). An evaluation of the environmental literacy of preservice teachers in Turkey through Rasch analysis. *Environmental Education Research, 20*(2), 202-227. https://doi.org/10.1080/13504622.2013.768604

Wals, A. E. J., Geerling-Eijff, F., Hubeek, F., van der Kroon, S., & Vader, J. (2008). All mixed up? Instrumental and emancipatory learning toward a more sustainable world: Considerations for EE policymakers. *Applied Environmental Education & Communication, 7*(3), 55-65. https://doi.org/10.1080/15330150802473027

APPENDIX A

Learning Strategies Scale

Participatory approach

1. As students, we can suggest to our teachers what environmental topics we could learn about*.
2. Within the school, we can get involved in different projects where we ourselves can contribute to improving the environment*.
3. When we do an environmental project at school, we can choose the course of action we think is best*.
4. I think I can influence what and how we learn about the environment at school by my decisions*.
5. When we learn about environmental issues, we always examine them from different perspectives*.
6. When we read about the environment at school, we usually discuss it afterwards*.
7. When we talk about the environment at school, everyone has the right to say their own opinion*.

Holistic approach

8. When we learn about the environment, we often discuss what it will be like in the future*.
9. We learn that the plants and animals in nature that we like are just as important as those we might not like.
10. When we learn about the world's environmental problems, we are always learning about how they might relate to us and our country*.
11. When we learn about environmental problems, we show how they affect the lives of ordinary people*.
12. At school we often talk about how the way we live in our country affects people in Africa or Asia.

Community approach

13. I have been involved in a project at school where we helped to improve something in our community*.
14. We often go outdoors around the school when we are in class*.
15. We are involved in a project to help other people or nature*.

* Adapted from Činčera and Kroufek (2021).