

Education for Sustainable Development in Teaching and Learning Settings:

Quantitative Study in the National Monitoring –
Survey of Young People

Executive Summary

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1 Context

As part of the national monitoring of the chair of the German Scientific Adviser of the UNESCO Global Action Programme “Education for Sustainable Development” (ESD), more than 3,000 people (2,564 young people, 14 – 24 years, and 525 teachers) were interviewed by means of a quantitative survey using an online access panel study. The survey was conducted in March and April 2018. It covered, amongst others, the status of ESD implementation in educational institutions and the ESD and sustainability attitudes, emotions, knowledge and behaviour of respondents. In the following, an overview of important study results of the target group young people is presented (For the results of teaching staff, see Brock & Grund 2019). Various aspects of the research results will be published in detailed form in national and international scientific articles; and summaries will be provided for a wider circle of addressees. Information on this can be found on the website of Institut Futur¹ or via the German ESD portal².

2 Insights into the state of research

Despite the great significance and legitimacy of ESD in society as a whole and for politics that is often emphasised (e.g. UNESCO 2012; RNE c/o GIZ 2018:60; CDU, CSU and SPD 2018), the state of research on more comprehensive empirical surveys on ESD implementation at an international level is very limited (see also Boeve-de Pauw et al. 2015). The importance of the focus on young people is not only a result of the general participatory claim that characterises ESD (cf. UNESCO 2014). It also derives from the fact that the lives of young people will be the most impacted and they will have to cope with the consequences of sustainability challenges for a longer period. Furthermore, they are often

particularly vulnerable to destructive changes (cf. Vallabh 2018:158 f.). At the same time, young people are very open for profound changes needed in systems and circumstances which are co-responsible for the current state of (un-)sustainability (ibid.). National study results regarding sustainability in general prove its high significance in the lives of young people and the interest and motivation to deal with it more intensively (Michelsen et al. 2015). It also becomes clear that a rather high general awareness of the importance of intact ecosystems for a good human life prevails, whilst at the same time a deterioration of ecological circumstances is expected (BMU 2018). The pattern of a clear interest of young people in stronger references to sustainability in their educational settings, as well as a still long way to a broad implementation of the topic can also be found at the international level, such as in Berglund et al. (2014), the National Union of Students (2015) or Boeve-de Pauw et al. (2015).

3 Description of the sample structure

This summary is based on the results of an online access panel study. In spring 2018, 2,564 young people (14 – 24 years, $M = 19.7$ years, $SD = 2.6$ years) were surveyed on sustainability and ESD-relevant dimensions using an online questionnaire (25 – 30 minutes processing time). The survey instruments mainly comprised validated items and scales for international and national research on ESD and sustainable development (SD). These were complemented by newly developed adapted and theory-based items. The sample comprises 809 pupils (32 %), 553 trainees (21 %) and 1,202 students (47 %). The main part of the pupils attended grammar schools (74 %), followed by middle schools (“Realschule”)

¹ <http://www.institutfutur.de>

² <https://www.bne-portal.de>

(11 %), comprehensive schools (8 %), "others" (5 %) and lower secondary schools ("Hauptschule") (2 %). The survey strategy ensured that young people from all 16 federal states are represented³. Within the target group of young people, the clear majority is female (74.7 % versus 24.8 % male and 0.5 % "other"), and gender differences were controlled for accordingly in the evaluation. The tendency towards socially desirable behaviour was captured by a validated scale (Winkler et al. 2006; cf. also BfN 2015) and controlled in calculations. Participants whose values showed deceptions of self and/or others were excluded from the analysis.

4 Results

4.1 Great interest in sustainability

How has the importance of sustainable development amongst young people in Germany over the last three years? The majority (54 %) reported an increase in importance. For only 8 %, the relevance of the issue has decreased. By extending this question to the assessment of classmates and teachers, these values fall: 35 % of the respondents attribute an increased significance of SD to their classmates and 26 % to the teachers, i.e. only half as compared to the increase in significance attributed to themselves. The teachers surveyed (see Brock & Grund 2019) also show the pattern of a higher increase in the importance of sustainable development for themselves in comparison with other people.

The most distinct points of contact of young people with sustainability are related to their use of the internet ($M = 3.28$,

$SD = 0.99$), with the average value of 3 indicating that they "sometimes" come into contact with sustainability⁴. This is followed by the fields school/training/occupation ($M = 3.05$), family, television, and books/newspapers (average approval between $M = 2.92 - 3.02$). According to the young people, the point of contact with sustainability is somewhat smaller in their own circle of friends ($M = 2.68$). Rather "rarely" do young people encounter sustainability in the context of their leisure activities ($M = 2.21$).

When it comes to their own knowledge of SD, the interviewees rate this on average as "satisfactory" ($M = 2.98$), with 5 % of the young people stating that they do not know the term "sustainable development" (SD). This shows a self-attested potential for a more profound knowledge base in an area that is becoming increasingly important to young people. It was furthermore surveyed what possibilities young people see for effectively reducing global warming. It was found that reducing both meat consumption and air travel are considered to be the least effective of a total of eight measures and are therefore strongly underestimated in relation to other options, such as the proper disposal of waste, in its actual contribution to climate change.

4.2 Sustainability is still often not an issue

Against this background, what is the status of the implementation of ESD in educational institutions? Slightly less than half (46 %) of the respondents state that they have never encountered the issues of sustainability or sustainable development in their current educational institution, al-

³ By far the largest proportion of respondents came from North Rhine-Westphalia (19.5 %), followed by Bavaria (12.8 %), Baden-Wuerttemberg (12.4 %) and Lower Saxony (9.2 %). The lowest numbers of participants are found in Bremen (1.4 %), Mecklenburg-Western Pomerania (2.3 %) and Saarland (2.4 %). This is very similar to the overall distribution of the population across the federal states (cf. Statistisches Bundesamt 2018).

⁴ On the 5er-Likert scale used, 1 corresponds to "never", 2 to "rarely", 3 to "sometimes", 4 to "often" and 5 to "always" having encountered sustainable development in the respective area of life.

though differences depending on the educational institution are observable: A slight majority of trainees (51.3 %) and students (51 %) report that they did not encounter the topic of sustainability in the respective institutions, while about one third (35.2 %) of the pupils state such an absence of sustainability in school.

By comparing the young people who report on sustainability references in the educational institution with those who have so far not seen any points of contact with the topic, significant differences can be seen at several levels, but these only have small effect size⁵. The former not only show significantly more positive attitudes towards ESD⁶ ($d = 0.29^{***}$) and SD ($d = 0.26^{***}$) and a deeper knowledge of sustainability-related concepts and programmes ($d = 0.38^{***}$), they also report a more distinctive sustainability-related behaviour⁷ ($d = 0.40^{***}$).

4.3 Sustainability references should triple ideally

If encountering sustainability in educational contexts is concretised in the sense of “clear references to SD” in teaching time, the following picture emerges: According to the young people, the proportion of the total teaching or seminar time that has such clear references to SD is less than one tenth ($M = 9\%$, $SD = 15\%$). There exist only minor, yet still statistically significant differences between the educational institutions: Pupils report an average of 10 %, trainees 8.6 % and students 8.3 %^{***} of the teaching or study time with clear sustainability references.

These estimated actual values are particularly insightful in comparison to what

young people define as an ideal educational setting that fully meets their expectations: Such a setting would imply a rise of the clear references to SD from just under one tenth to more than one third (34 %) of the total teaching time, i.e. more than triple. In 35 %, respectively 34 %, of that time, pupils and students would like to see clear references to sustainability in teaching, slightly more than trainees (31 %). Here, too, a difference exists between the young people who have reported on references to SD in their educational institution and those who have not: On average, the first-mentioned would like to see more than ten percentage points more clear references to ESD than those who have not yet reported any sustainability references (39.2 % vs. 27.0 %, $d = 0.50^{***}$). Not only at the thematic level, but also at the methodological level, both the current and the desired future levels of ESD were surveyed for the German context using an internationally validated scale (see Boeve-de Pauw et al. 2015). At the thematic level, it became clear that young people would like to see significantly more connections between the past, present and future, between global and regional issues, and between the combination of ecological, social and economic dimensions. The methodological level of ESD implementation (e.g. participatory teaching settings, critical reading of texts, encouragement to forming one's own opinion), which was also surveyed, shows that young people wish for more methods characteristic for ESD than what they currently experience.

⁵ Here, * corresponds to a $p < .05$, ** corresponds to a $p < .01$, and *** corresponds to a $p < .001$.

⁶ Using d , the Cohen effect size measure: $d = .20 - .49$ corresponds to a small effect, $.50 - .79$ to a medium effect and from $.80$ upwards to a large effect (Cohen 1988).

⁷ However, for methodological reasons, no causal relationships between the individual dimensions are examined in the context of this study.

4.4 ESD mainly emanates from motivated individuals and single subjects

Where ESD is already being implemented, however, the respondents report that it is characterised by two strong trends: Despite the aim of a broad and structural anchoring, ESD is still primarily realised by committed individuals – and primarily within individual subjects: The concentration on some teachers is underlined by the mean value of 4.1 ($SD = 2.2$), where 1 corresponds to an educational setting in which only one committed teacher implements sustainability issues, and 10 to an institution in which all teachers do so. An even stronger concentration on certain subjects is reflected in the mean value of 3.5 ($SD = 2.2$), where 1 corresponds to a discussion of sustainability within one single subject, and 10 indicates that this is the case in all subjects.

Differences between subject groups could be analysed for trainees and students: Within the group of students categorised as studying mathematics and sciences, it is evident that students here are significantly more likely to encounter the topic of sustainability than in the remaining subjects (54.1 % from this subject group vs. 46.7 %***). Among the different occupational fields in vocational education, there exists a statistically relevant difference regarding the implementation of ESD*: trainees in the area of "teaching and education" wish for more ESD as compared to other professions, although there is only a rather small effect size here.

4.5 Comparisons between pupils, trainees and students

Comparing the different fields of education reveals further differences: Students report more positive attitudes towards SD and ESD as compared to pupils and trainees. However, the extent of the effects is rather small (e. g., ESD-related attitude of students towards pupils: $d = 0.296^{***}$, to-

wards trainees: $d = 0.287^{***}$). Furthermore, students show a stronger sustainability-related behaviour***, stronger sustainability-related emotions*** and more responsibility for sustainability*** as compared to trainees and pupils.

The comparison between different types of schools (lower secondary schools, comprehensive schools, middle schools and grammar schools) revealed significant differences on several levels, which shows similarities to Berglund (2014). Overall, a pattern emerges in which sustainability on average plays a more influential role for pupils of comprehensive schools and grammar schools, as compared to pupils in lower secondary schools. This applies, e. g., to the implementation of ESD, the manifestations of sustainability-related attitudes and emotions, perceived hurdles towards more sustainability, the willingness to assume responsibility, and the self-reported sustainability-related behaviour.

Slight differences were also observed in the comparison of young men and women. A stronger expression of self-reported sustainability-related emotions ($d = .39^{***}$) becomes apparent amongst young women. In terms of knowledge, young men show slightly higher values ($d = .15^{***}$).

4.6 Large gaps between realistic and desirable future scenarios

The overall clear interest in and desire to deal more intensely with sustainability is very much in line with the young people's idea of what will shape the world in 50 years' time: In total, in a selection of six future scenarios (one positive and one negative in the areas: digitisation/technology, social justice, climate change), negative futures are considered as more likely ($M = 6.3$, on a scale of 10; 1 = "extremely unlikely", 10 = "highly likely", $SD = 1.4$) than positive ones ($M = 5.2$, $SD = 1.5$) ($d = 0.75^{***}$). Furthermore, large gaps become obvious between expected and desired futures: On the one hand, it is regarded as the

most likely of the six scenarios that climate change cannot be mitigated in time, which will lead to massive negative ecological, economic and social consequences (an average of 6.7 on the above-mentioned scale of 10). On the other hand, the young people regard it as the by far most desirable outlook amongst the six scenarios (8.1 on a scale of 10; 1 = "not at all desirable", 10 = "highly desirable") that the limitation of climate change has been recognised in its importance by all sectors of society and acknowledged as the highest priority, which is why the earth system could be kept stable.

5 Conclusion

These insights from the large-scale empirical study confirm and expand various aspects of the scientific and practical discourses on ESD: The enormous gap between the desired and actual implementation of ESD is confirmed by the perspective of the educational addressees. The underlining of what can be called a "realisation deficit" of ESD by the perspective of the young people can be understood as an additional legitimisation and intensification of the mandate to effectively upscale ESD

in various educational settings, as intended by the National Action Plan on Education for Sustainable Development (2017). The relevance of ESD is also striking given the immense differences between expected and desirable futures of young people. In this way, one of the essential characteristics of ESD, namely its future-creating orientation, is brought to the centre. Here, its mission to counteract passive-resigning tendencies by effectively promoting individual agency of young people as private and as political actors is underlined. The fact that the study shows positive correlations between ESD implementation and further dimensions, such as sustainability-related emotions and behaviour, points to the importance of the educational concept for just this shaping of sustainability issues in the real world.

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