

„Unserem Essen auf der Spur“ – Pedagogical City-Walk Tour for School Classes on Planetary Health and Food Culture

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Background and Goals

Aligned with the United Nations Sustainable Development Goals (SDG) 4.7, prioritizing education's role in fostering sustainable development and health globally and locally is imperative. This education should encompass cognitive and non-cognitive aspects, nurturing knowledge, skills, values, and attitudes necessary for individuals to lead productive lives, make informed decisions, and actively engage in addressing global challenges. The Lancet's Commission on Planetary Health underscored the urgency of addressing food systems, highlighting their pivotal role in achieving the SDGs. The UN Environment Programme also emphasized the significance of food systems in attaining sustainability goals, urging a focus on health and environmental sustainability to tackle present health challenges like obesity and malnutrition, alongside future global issues. The City Walks experiment, facilitated through the digital tool Actionbound, aimed to integrate science communication into education in a dynamic manner beyond traditional classroom settings. By employing an app-guided scavenger hunt approach, the experiment sought to foster media competencies among young learners while engaging them in meaningful interaction with technical equipment (see figure 1). The overarching objective was to determine if these novel communication methods could effectively impart knowledge about food systems and planetary health. The experiment aimed to enhance knowledge and awareness of food systems among students while considering cultural influences on planetary health communication to instigate attitude changes. It sought to stimulate discussions on consumption and planetary health within students' school and social circles, leading to increased awareness, action-seeking behaviors, and integration of planetary health considerations into decision-making processes. With a focus on students from diverse backgrounds and educational levels, including grades three/four and seven/eight in the Bavarian State school system, the experiment aimed to catalyze critical thinking and reflection on the relationship between food consumption and planetary health. Additionally, it aimed to influence teachers' perceptions of the effectiveness and potential of innovative educational formats like City Walks compared to traditional methods.

SciComm Format and Evaluation

Three classrooms participated in the experiment with materials addressing the Bavarian school curriculum. Evaluation methods included pre-and post-surveys, oral and written feedback from teachers, participatory observation, and physical feedback sessions with students. The format employed Actionbound, an app-guided tour, comprising four stations addressing various aspects of food culture and planetary health (see figure 2). Each station aimed to stimulate critical thinking and foster awareness regarding the interplay between food consumption and planetary health. The City Walk format facilitated interactive learning experiences, encouraging students to question and reflect on the relationship between food and planetary health. Through sensory engagement and guided exploration, participants gained insights into the complexities of food systems and their environmental and societal impacts. The incorporation of digital media, social interaction, and outdoor exploration provided a holistic learning experience, promoting active engagement and knowledge retention.

The City Walk curriculum targeted diverse subjects, including Geography, Biology, Mathematics, German, Religion, and Ethics, spanning grades three to nine.

By integrating relevant topics into existing curricula, the initiative aimed to maximize educational impact and facilitate cross-disciplinary learning opportunities. The hypothesis underlying the City Walk initiative posited that the format would effectively convey knowledge and raise awareness through critical thinking and questioning. Specific objectives included providing concrete examples of the interconnectedness between food and the environment, stimulating discussions on planetary health within school and social circles, and encouraging proactive engagement in sustainable practices. The evaluation process encompassed multiple stakeholders, including students, teachers, and educators leading the City Walk tours. Quantitative and qualitative data were collected through surveys, interviews, and observational methods. While challenges such as technical difficulties and communication errors were encountered, efforts were made to gather comprehensive feedback to assess the initiative's effectiveness. Despite limitations such as small sample sizes and the absence of a control group, the evaluation sought to elucidate the City Walk's impact on participants' attitudes and behaviors towards food consumption and planetary health. Through iterative refinement and adaptation, the initiative aimed to enhance its efficacy and scalability for broader implementation in educational settings.

Results and Discussion

The analysis of the students' questionnaires from four different cohorts ($n = 85$) did not reveal a significant change in attitude, failing to confirm the initial hypothesis. The expectation that students would throw away less food and eat more healthily after the City Walk was not met. These constraints indicate that the survey data do not support the initial hypothesis. In addition to the surveys, interviews were conducted with teachers from different school types and grades ($n = 4$) immediately after the City Walk. A questionnaire with both closed and open questions was administered, and in-depth participant observation was carried out with educators who led the Walk ($n = 5$). Observations and discussions with students and teachers indicated that the secondary goal of creating an innovative methodology for this content was well received. Following two workshops with teachers and teachers in training conducted by elmundo, 18 teachers requested the City Walk package, intending to use it towards the end of the school year. The four teachers involved in the initial experiment provided positive feedback, confirming the goal of crafting an innovative and useful format for teaching this content. Teachers who used the City Walk in their classrooms highlighted several positive aspects, including increased motivation among students, the format's versatility, and the opportunities it provided for exploration and hands-on learning outside the classroom. The format generated interest without overwhelming students with information, allowed for flexible implementation by the teachers, and facilitated engaging learning experiences. Suggestions for improvement included greater flexibility in the order of stations, integration of additional topics like food labeling, and better adaptation to the interests of younger students. Challenges such as technology limitations and logistical planning were noted, indicating areas for refinement in future iterations.

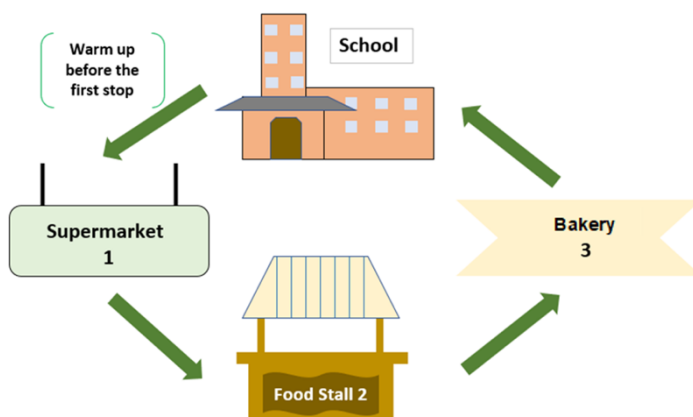
The evaluation process overall provided valuable insights into the City Walk format's effectiveness and feasibility for science communication and planetary health education. Despite some challenges and limitations, the overwhelmingly positive feedback from both students and teachers highlights the initiative's potential to facilitate meaningful learning experiences and engage students with sustainability issues. Effective collaboration with partners enhanced the versatility and variety of the City Walk.

Positive feedback from students and teachers indicates the initiative's impact and relevance, while increased interest from teachers suggests the initiative's potential for scalability and broader dissemination. Technical limitations and subscription constraints pose obstacles to long-term sustainability. Improving clarity and guidance in evaluation communication with educators is necessary for future research endeavors. Future refinement of the format and adaptation to diverse educational contexts are crucial to maximize its effectiveness and engagement. Suggestions for improvement include setting transparent learning objectives and using user-friendly apps to enhance the learning experience. Involving students in the creation process can foster a sense of ownership and relevance. Providing practical tips for teachers can facilitate smooth implementation and address potential challenges proactively. In conclusion, while there are areas for improvement, the City Walk format demonstrates promise as an innovative and participatory approach to science communication and sustainability education in schools. By addressing feedback and iteratively refining the format, future implementations can maximize its potential to engage students and promote meaningful learning experiences.

Figure 1: Photo of students using the Action Bound app with guiding questions during the City Walk tour



Figure 2: Overview of the City Walk stops



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