

Establishing a 4-H Facilitator Guide to Teaching Youth About Sustainability

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Introduction/Need for Innovation or Idea

4-H helps young people develop life skills through positive youth-adult partnerships and projects that focus on subject areas such as STEM, leadership, arts and communication, and healthy living (National 4-H Council, 2019). Nationally, 4-H does not have a curriculum that is focused on sustainability nor does it provide an adult guide on how to teach youth about this subject area. The U.N. (2019) Sustainable Development Goals Report established that young people are a driving force for development – but only if they are provided with the skills and opportunities needed to reach their potential, support development, and contribute to peace and security (Billioria, 2019). It is important that adults teach youth about sustainability in order to provide the knowledge and skills future generations will need to ensure the longevity of natural resources. The importance of these types of education is reflected in the priority question posed in the *American Association for Agricultural Education National Research Agenda 2016-2020*, “How can formal and nonformal curriculum in Agriculture and Natural Resources address emerging, complex issues” (Andenoro, Baker, Stedman, & Weeks, 2016, p. 59). A 4-H facilitator guide to teaching youth about sustainability is being developed to help to answer this question and improve awareness of sustainability.

How it Works/Methodology/Program Phases/Steps

This curriculum will help bridge the gap between generations and nurture a better way for youth and adults to connect on global issues surrounding society, economics, and the environment. Through this guide, adults will be able to give youth the tools and skills needed to effect real change on a local or even global level. Youth will benefit by learning about sustainability and improve their life skills in areas such as critical thinking, learning to learn, communication and sharing, contributions to group effort, responsible citizenship, teamwork, and self-responsibility. Youth need to understand that food, energy, and water are all interconnected.

A logic model was used to develop the long-term goals of the curriculum and to create a blueprint for building this program. The curriculum includes information about 4-H like Targeting Life Skills Model (Hendricks, 1998), basic background information on sustainability, list of materials needed, and eight complete lessons. Each lesson consisted of learning objectives, targeted life skills, suggested time, supply list, before lesson preparation, introduction activity, the main lesson, reflection, and an application lesson. The lessons are each roughly 60 minutes each and it is recommended to conduct one lesson per week for a total of eight weeks. The lessons are

- Lesson 1: What is sustainability
- Lesson 2: Global food system
- Lesson 3: Water conservation
- Lesson 4: Renewable energy & conservation
- Lesson 5: Consumerism & waste management
- Lesson 6: Waste reduction, composting, & recycling
- Lesson 7: Tying it all together– Food, energy, and water

- Lesson 8: Community/civic engagement—Making changes.

A pilot of the activities was conducted at a local elementary school with an afterschool group of 4th graders ($n = 37$). The activities were evaluated through open discussion with the students and the teacher. The team also made observations during the program itself to document the youths' thought process and whether they were making connections in sustainability. Qualitative feedback from both the adults and youth informed a holistic approach to designing a resource guide and program evaluation.

An expert panel at the University of Florida was asked to review the curriculum and provide feedback on the design of the curriculum, appropriateness of the activities for the target age group, and ease of use for classroom or other 4-H delivery mode; and refinements were made accordingly.

Results to Date/Implications

80% of youth who participated in the program changed some behavior that related to water conservation, energy conservation, or waste management. As an example, all youth stated that because of the lesson on energy conservation they all turn off lights when leaving a room which they did not do previously. As another example, one youth reported that because of the take home compost bin activity, his or her parents started a compost bin at home. The pilot project has provided data that shows there is a need for a curriculum that adults can use to teach youth about sustainability from a systematic approach. This approach would provide the conceptual framework for the understanding of the interconnectedness of food, water, and energy. This curriculum also has the potential to inspire youth to pursue careers in disciplines relating to sustainability.

Future Plans/Advice to Others

Members from the expert review panel have expressed interest in piloting the curriculum in their respective counties in various delivery modes in 2020. Since this curriculum is intended to be used on the state level, the next steps will be to integrate state level 4-H resources, develop a comprehensive evaluation, conduct multiple peer reviews, and submit the materials for approval and publication at the statewide level.

For the future goals of this curriculum, plans are in place to gather data and develop a strategy to document long-term behavior change. A follow-up parent survey may be developed to capture youth behavior change a few months after the program. All the surveys and pre/post tests will be included in the curriculum in order to obtain continuity.

Costs/Resources Needed

Once the curriculum is approved by the state 4-H office, it will be available for free to anyone via the University of Florida website. The materials list contains items that teachers and/or volunteers may already have at their disposal. The estimated total cost is \$250-\$300. In addition to the cost, internet access is needed for some lessons and a volunteer's or teacher's time needs to be dedicated over eight to ten weeks.

References

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