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Photo taken and submitted by Ginger Zastrow

Inclusiveness

Both SJS and 4-H celebrate the differences of all people and each has designed special proactive opportunities in their programming to ensure access to everyone. In addition to the benefit of inclusiveness for members with disabilities, members without disabilities benefit, because they see that everyone has strengths and weaknesses and unique abilities. They learn to be less prejudiced towards those who are different. Toward the goal of inclusiveness, the SJS program has developed special features for blind/low vision and deaf/hard of hearing youth. Both SJS and 4-H include leaders from diverse backgrounds to facilitate their programs.

Implementation

The creators of SJS set out to develop an online astronomy tool and training that enabled middle-school and high-school youth to use robotic optical and radio telescopes. SJS has prepared over 150 adult youth leaders, including 4-H adult leaders, museum educators, amateur astronomers and teachers to facilitate SJS activities. As of August 2015, 105 4-H youth leaders and leader supervisors from 24 states have completed professional development; many have formed SJS youth groups.

Within 4-H, the Skynet Junior Scholars program has been implemented as a:

- Community 4-H Club project
- Special Interest 4-H Club program
- Afterschool 4-H program
- Residential 4-H camp class



Photo taken and submitted by Jennifer Murray

Development of Thinking Skills

SJS created an inquiry-based curriculum that promotes critical thinking and scientific habits of mind. 4-H is the nation's largest positive youth development organization, empowering six million young people in the U.S. Since 1902, 4-H programs around the country have been helping youth "learn by doing" through trained volunteers and professionals facilitating guided learning activities in informal settings like 4-H clubs, camps, and afterschool programs. Nationally, 4-H curriculum and activities focus on three main mission mandates: science, healthy living, and citizenship. Currently, 4-H Science programs reach more than 5 million youth with hands-on learning experiences.

The Power of Experiential Learning



Adapted from D.A. Kolb, 1984.

Experiential Education

The Experiential Education Model puts the 4-H slogan "Learn By Doing" into action as part of the Skynet Junior Scholars Program. If your goal is to have the person understand the concept at a level that they can generalize and apply the understanding to new situations, or combine the understanding with other concepts they have learned, experiential learning is the best way to develop that level of mastery. When this model is used, youth both experience and process the activity. They learn from thoughts and ideas about the experience. Each step contributes to their learning. Students work through hands on activities as well as learning to manipulate the software through lessons that allow their creativity and exploration to thrive. SJS students then reflect on their work in their online notebook, with their instructor, or with others in Forum discussion.

Career Exploration

There is expected to be a future shortage of scientists in America. Therefore, in 2003 the National 4-H organization formed a strong commitment to STEM education. By building curiosity, excitement, and content knowledge in STEM activities, 4-H can increase engagement in STEM careers and address the need for more science and technology professionals in the generations to come. Skynet Junior Scholars participants in West Virginia have had the opportunity to interact with scientists at the National Radio Astronomy Observatory in Green Bank, WV through a capstone trip to the facility. In northern Wisconsin, time has been taken to assess what STEM skills are enhanced through the SJS activities as well as what is learned about astronomy-related careers. With second and third year Skynet project learners, more time can be spent connecting to researchers through the forum, going through the astronomy Career Brochure, and viewing Statistical Research Center's results on astronomy students' employment and salaries. Recognizing that many times Astronomy is taken as a concentration area for students with interests in computer science, physical science, physics, or math; the Skynet program is a way to gain early hands-on experience.

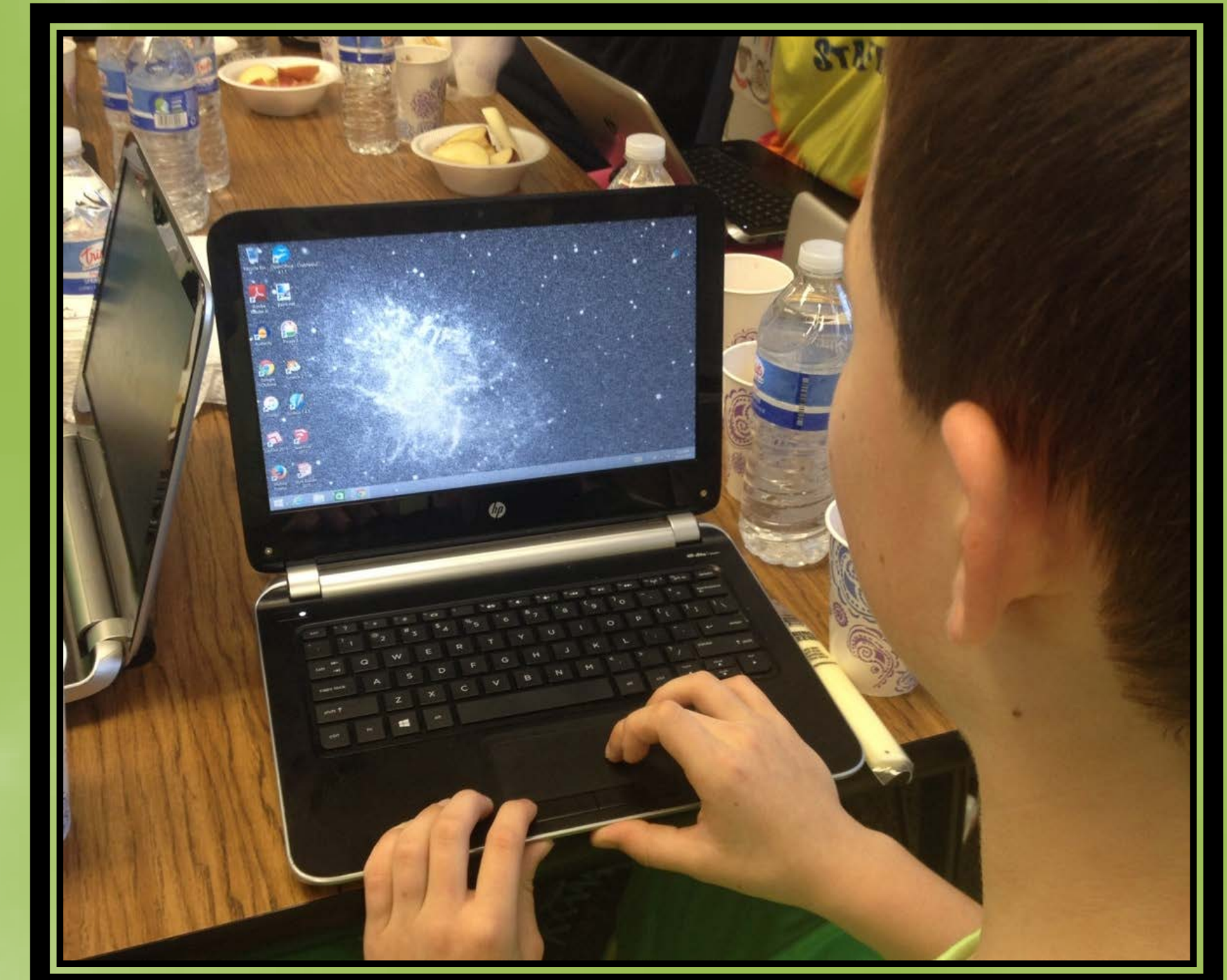


Photo taken and submitted by Ginger Zastrow

Leadership Development

4-H programming lends itself naturally to leadership development as older youth help younger ones, and youth demonstrate to others the methods they used to complete projects, the value of their work, and their goals for future work. An evaluation of growth using the Skynet Junior Scholars Program has been completed in Wisconsin in these particular leadership life skills: cooperation, self-direction, respect, communication, critical thinking, and innovation. Youth have described growth in innovation and self-direction with respect to decision-making in what filters and exposure times to use. Cooperation and communication were highlighted as youth described helping each other problem-solve during the activities. Respect was mentioned in relation to recognition of the various speeds with which fellow students learn, and critical thinking was mentioned in determining why some SJS images turned out and others didn't.



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SJS is a partnership between



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