BACKGROUND
- Environmental issues such as sustainability and climate change have become increasingly conspicuous in recent years.
- Garden-based learning (“GBL”) is interdisciplinary and can be used in a broad range of disciplines.
- This important teaching tool uses the garden as the foundation for personal, hands-on STEM-based education.
- Due to school closures, budget cuts, and other external factors, students no longer have access to hands-on STEM education such as garden-based learning.
- External organizations such as Oxbow Farm and Conservation Center have created their own digital GBL learning tools and materials which at-home educators can access remotely.

RESEARCH QUESTION
How and in what ways do students engage with garden-based learning during remote education?

RESPONSIBILITIES/METHODS
- I interned with Oxbow Farm and Conservation Center who were piloting their virtual garden-based lessons known as the Digital, Investigative, and Guided (“D.I.G.”) experience to students.
- Students answered written prompts before and after the lessons and anecdotal observations were recorded. Themes from the prompt responses were scored and tabulated based on a set of criteria either falling under “ecological literacy” or “positive attitudinal shifts.” From there, mean scores were calculated.

RESULTS

Ecoliteracy
- Students demonstrated improved ecoliteracy reflecting a better understanding of the environment and applied curiosity about the natural world (See Figure 1.) Improved ecoliteracy fosters potential for long-term environmental stewardship.

Attitudinal Shifts
- After participating in the lessons, students expressed interest in caring for their local environment and habitat, positively connecting them with the natural world in a deeper, more meaningful way (See Figure 2.)

Enthusiasm
- Students were enthusiastic about the GBL lessons despite the remote setting. The success of this accessible and experiential learning approach can be applied to other disciplines outside of STEM.

TAKEAWAYS

IMPLICATIONS
- Attention is required post-COVID to support students’ nature related needs and virtual GBL can fulfill this need.
- Many of the students who participated in the D.I.G. experience did not have access to hands-on STEM learning even before the pandemic.
- GBL provides the potential for accessible and flexible STEM learning for students from all socioeconomic backgrounds even during a pandemic and after.

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