Elementary students’ use of their bird monitoring research to make socio-ecological decisions on their school campus and beyond.

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Project Summary & Research questions: We conducted a 9-month ethnographic study on how 4th and 5th grade students used their bird monitoring experiences and expertise to make environmental decisions and take action on their school campus. We asked RQ 1: How do youth use their data for decision making & action? RQ 2: What knowledge, values and justifications do young people use to make environmental decisions?

Results

RQ1:
- **Took ownership**: Students frequently evaluated and ensured accuracy of their data (most participants provided factual statistics on species abundance and diversity.)
- **Contextualized the issue**: All students contextualized data within first-hand experiences (i.e. data collection & interpretation); local place (i.e. season, time of day, human impact, school campus infrastructure), and content knowledge (i.e. species’ preferred food, migration patterns, bird behavior & adaptations to habitats). They rarely used the term “data”.

RQ2:
- **Identified multiple CCS project goals**: Students framed the project purpose as 1) to do more bird research; 2) teach others about birds; 3) get other schools involved. Goals varied & overlapped for individual students; all students connected these goals to “helping the birds”.
- **Same goals, different decisions**: Relational (e.g. based on in-depth knowledge of bird needs & behaviors + local place); Binary (e.g. concern for “who belongs”, fear-based, misinformed); Empathic (e.g. preferences towards prey birds); and Uncertain (e.g. IDK, identifying the need for more information/research before decisions could be made).

Conclusions

- Youth decisions are informed in part by how they frame CCS project goals: (Issue 2) & their experiences engaging in and taking ownership of the data lifecycle (Issue 1).
- Continued engagement in the data lifecycle (Issue 1) supported students when they did not know what action to take (Issue 2).

Implications

- Engage youth in data lifecycle to 1) contextualize socio-environmental issues & 2) support youth in decision making.
- Cultivate youth empathy for all living things by developing relational knowing of species’ needs and behaviors plus community needs.

Participants & context

- Afterschool Ornithology Club for 4th and 5th graders at a comprehensive public school in the Sacramento Valley, CA.
- Club led by elementary science specialist teacher.
- 9-month youth-focused CCS project aimed at 1) documenting bird species diversity and abundance on their school campus & 2) making a school garden for the birds (funded by BirdSleuth K-12).
- Students submitted their bird data to Cornell Laboratory of Ornithology’s eBird project, presented their findings to a kindergarten ELL class and the School District board, and used their data to make habitat restoration decisions on their campus.

Methods

Data collection
- Pre-post interviews with ten focal students & teacher post-interview
- Weekly 1/2 hour class observations & lesson debrief with teacher

Analysis
- Analysis of teacher interview informed iterative inductive coding of student post-interviews and field observations.
- Main themes from teacher interview included goals for students to 1) “make sense of the world around them” (e.g. science content knowledge; data) and 2) see that “they can make an impact” (e.g. decisions made; CCS project purpose).

References


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