

Group #9

Group Member names: Payton, Tamira, Alexandra

Project title:

Annotated Bibliography

Answer the following questions below for each of the 10 sources of evidence you gather.

Research Question:

Review Paper 1

- Team member evaluation: Alexandra
- Citation for the article

Ardoyn, N. M., & Bowers, A. W. (2020). Early childhood environmental education: A systematic review of the research literature. *Educational Research Review*, 31, 100353.

<https://doi.org/10.1016/j.edurev.2020.100353>

- 1-paragraph summary:
The article presents research on teaching young children aged 0-8, aiming to understand how it aids their environmental and natural knowledge. Through their study, they found that nature has a significant impact on kids' lives when they spend time outside. They also found that different approaches to teaching in programs that are more fun and interactive help kids learn better and make it easier for teachers to manage the classroom. The organization conducted research across 66 studies to gain a deeper understanding of effective methods for teaching young children about environmental education. Overall, they conducted extensive research on classroom programs that were more teacher-led and student-focused. They found a positive impact from programs in many areas, such as environmental literacy, social and emotional growth, and physical development.
- What information does this source contribute to your research question?
The program's research revealed numerous benefits to early age education, including improved language and literacy skills, as well as more environmentally responsible behavior in the future.
- How does the source relate to other sources in your bibliography?
Many of the sources I have found indicate a positive impact from incorporating environmental education in schools or after-school programs. They also highlight the benefits for the environment's future and explain why teaching them at a young age can significantly impact the world's well-being.
- What are the strengths and weaknesses of the source?
The article had excellent sources, but it had some limitations. Specifically, it focused more on certain aspects, which meant other topics were not explored as thoroughly. Additionally, some of the sources were of limited age. The article focuses on their research in the age range of 4-6, although it also discusses infants aged 8 years old.
- How does the source fit into your research topic? Why is it useful?

This source fits into our research topic because it also looks into different ways in teaching young kids about the environment and why it has so many future impacts on their lives and all of the world, from building habits and growing their language and communication to problem-solving.

Review Paper 2

- Team member evaluation: Payton
- Citation for the article:
 - Kumar, Ashok. "Promoting Youth Involvement in Environmental Sustainability for a Sustainable Future." *Edumania-an International Multidisciplinary Journal*, vol. 01, no. 03, 5 Oct. 2023, pp. 261–278, <https://doi.org/10.59231/edumania/9012>.
- 1-paragraph summary:
 - The purpose of this article is to examine how the youth can engage in their community regarding environmental sustainability. There are arguments made that challenge whether or not the youth is most engaged via empathy and critical thinking skills. The authors note many sources to back up their claim that the youth is our future and need to be educated on environmental sustainability. Social media is one way to promote education in this area. There are several action plans that the authors list. These include early education, raising awareness, finding solutions, reaching out to their community, leadership opportunities, and the barriers of their actions. They then encourage the youth to look into a set of activities that can promote further education. They conclude this review paper with the benefits that this gives the youth such as empowerment, energy, creativity, and passion.
- What information does this source contribute to your research question?
 - This source contributes to our research question because it backs up our hypothesis that the youth needs environmental education to increase passion for urgent problems in their communities.
- How does the source relate to other sources in your bibliography?
 - This source is related to other sources in our bibliography because it gathers many opinions, whereas some of the other sources focus on raw data and scores. We can incorporate both opinions and raw data to draw conclusions that ultimately support our hypothesis.
- What are the strengths and weaknesses of the source?
 - This source does a great job of outlining benefits and goals for the youth regarding environmental sustainability education however it lacks data. We want numbers to definitively establish that environmental education makes a difference. I feel empowered after just reading this source and it encourages programs such as the CODES program. I wish it would touch on how exactly to get the youth involved instead of outlining the benefits.

- How does the source fit into your research topic? Why is it useful?
 - This source fits into our research topic because it credits many sources that agree with their claims. It is useful because we can gather all of these listed benefits as data. It supports our hypothesis.

Research Paper 1

- Team member evaluation: Payton
- Citation for the article:
 - Trott, Carlie D, et al. "Civic Science Education for Youth-Driven Water Security: A Behavioral Development Approach to Strengthening Climate Resilience." *International Journal of Behavioral Development*, vol. 48, no. 2, 29 July 2023, pp. 145–155, <https://doi.org/10.1177/01650254231188661>.
- 1-paragraph summary:
 - Climate change along with poverty are big issues in Haiti. Studies have shown that young people are especially distressed about this issue. One group of students took an integrated art-science educational programming course, where students ages 8-18 "used water testing and digital photography to collect, analyze, and share local information on water quality, pollution, and deforestation, while advocating for change through community events and short documentary films to disseminate findings and raise community awareness (Trott et al., 2020a)". After the program, interviews showed that this program empowered the kids. This program teaches kids how to be engaged in their community while learning about climate change.
- What information does this source contribute to your research question?
 - This source contributes to our research question by showing that there are curricula that can help kids want to make a difference in their community. These students relate a wicked problem back to their community, like we are doing in the CODES program. In theory, this will raise the new generation to be passionate about activism and drive society in an exponential direction.
- How does the source relate to other sources in your bibliography?
 - This source relates to other sources in our bibliography because it supports our hypothesis that if students receive environmental education from an early age, it will impact their involvement in their community.
- What are the strengths and weaknesses of the source?
 - This source is strong in data and methods. Their methods were clearly outlined and conclusions were clearly drawn. The weaknesses in this source for our use is the fact that this study took place in Haiti. We would need to alter their community issues to ones similar in our community.
- How does the source fit into your research topic? Why is it useful?
 - This source fits into our research topic and is useful because it is very similar to what we are doing in the CODES program. Instead of CODES being introduced

in college, kids ages 8-18 are exposed to this curriculum. They even share their results on digital platforms like we do.

Research Paper 2

- Team member evaluation: Payton
- Citation for the article:
 - Goldfeld, Sharon, et al. "Findings from the Kids in Communities Study (KiCS): A Mixed Methods Study Examining Community-Level Influences on Early Childhood Development." *PLOS ONE*, vol. 16, no. 9, 1 Sept. 2021, p. e0256431, <https://doi.org/10.1371/journal.pone.0256431>.
- 1-paragraph summary:
 - This article talks about a curriculum: "Kids in Communities Study (KiCS)" where they interview, survey, and analyze the community. They talk about how different demographics of children can have different levels of involvement in their communities. They also examine how different communities contribute to the willingness to be involved in their communities. They conclude by addressing that early life experiences are essential to kids' development.
- What information does this source contribute to your research question?
 - This contributes to our research question because it shows how kids can engage in their community and ultimately make a difference. This supports our research question because it acknowledges that kids need to be taught how to be involved in their community rather than it being something they can just pick up.
- How does the source relate to other sources in your bibliography?
 - This source relates to other sources in our bibliography because it analyses communities that are implementing community education in their youth.
- What are the strengths and weaknesses of the source?
 - This source is strong in their methods. They use mixed methods to get an overall feel of the question they were asking. Another strength of this article is their use of figures and tables. They present their data in a way that is easy for readers to digest. This source will need to be further analyzed because it takes place in Australia, so their sense of community is different from ours here. There is not conversation about environmental education in this article, but instead community education.
- How does the source fit into your research topic? Why is it useful?
 - This source fits into our research topic and is useful because it measures the amount of community involvement children have and how it can improve. The whole point of introducing community education to the youth is so that they can connect what they learn back to their community and make a difference.

Research Paper 3

- Team member evaluation: Tamiria Dixon
- Citation for the article: Reckner, Michelle, et al. "Impact of Youth Education on Green Stormwater Infrastructure Recommendations to Increase Equity and Resilience in Marginalized Communities." *Journal of Water Resources Planning and Management*, vol. 150, no. 9, Sept. 2024, <https://doi.org/10.1061/jwrmd5.wreng-6315>.

- 1-paragraph summary:

Professors Reckner and Tien conduct a qualitative analysis on youth engagement regarding stormwater infrastructure planning. Specifically, professors investigate potential factors relating to the Youth Advocacy for Resilience to Disasters Program. It can be said that the purpose of this data is to critically understand youth perspectives when it comes to dealing with stormwater infrastructure problems. The program highlights that student advocacy has increased due to the program's occurrence. Ultimately the professors argue that youth contribute to society based off pre-conceptions.

- What information does this source contribute to your research question?
- How does the source relate to other sources in your bibliography?
- What are the strengths and weaknesses of the source?
- How does the source fit into your research topic? Why is it useful?

Research Paper 4

- Team member evaluation: Alexandra
- Citation for the article:

Kumari, S., & Nayak, M. (2024). *Impact of educational interventions on early adolescents' attitudes and behaviors toward water conservation: A systematic review*. *Journal of Emerging Technologies and Innovative Research*, 11(12). <https://www.jetir.org/papers/JETIR2412467.pdf>

- 1-paragraph summary:

This article explores research on education methods for teaching adolescents aged 10 through 14. They saw these age groups as a significant time in kids' lives to start making environmental habits. From their research, they found that some methods work better. Some of them were interactive methods, and an urban focus. Kids have to use hands-on activities and learn about areas where water is more limited. The research revealed limitations, including long-term impacts related to behaviors. Through their research, they also found out that girls have a faster response than boys, and most often, a positive one too.

- What information does this source contribute to your research question?

Some of the sources that contribute to our research were experiential learning or what we saw as interactive learning. They observed various teaching methods, ranging from classroom learning to community programs and interactive learning, similar to our research team's findings.

- How does the source relate to other sources in your bibliography?
The source relates to some of the research I looked at in urban areas and how teaching in areas where access to water is limited helps kids become connected to building sustainable practices.
- What are the strengths and weaknesses of the source?

This source focuses on older kids, which I haven't seen before. The ages they research are 10-14-year-olds. They examined many studies, focusing on only 25, which is a good approach; however, I believe this represents a small sample of the 150 studies they reviewed.

- How does the source fit into your research topic? Why is it useful?
Once again, they fit our research topic in a different way than the other as it is my first source to look into adolescents and shows good strength in their research in areas like practical implications and connection with educators, and trying to encourage community unity for greater impact.

Research Paper 5

www.academia.edu/79571304/Exploring_Water_Conservation_Awareness_Level_Among_Primary_School_Children_From_Melaka_Malaysia

- Team member evaluation: **Tamiria Dixon**
- Citation for the article:
- 1-paragraph summary:

In this article professors Praveena and Themudu, both strive to assess the knowledge of primary school students in Malaysia. Within this study associated examiners utilized a survey questionnaire to investigate the attitudes, knowledge, and beliefs with water conservation awareness. Moreover, the findings demonstrate that there are many misconceptions when it comes to the knowledge and beliefs of these practices. It's also important to note that scientists correlate that demographic factors could also play a

vital role when describing this phenomenon. In conclusion, professors, Pravenna and Themudu effectively, analyze the behaviors of primary school children while providing solutions for educators.

- What information does this source contribute to your research question?

It provides a framework for the attitudes, beliefs and knowledge in a perspective that isn't western.

- How does the source relate to other sources in your bibliography?

It utilizes methodological approaches, similar to the other articles being examined. Also, this essay's main focus is on primary and school children. With that, most of the findings are both quantitative and qualitative which demonstrate the mixed method approach.

- What are the strengths and weaknesses of the source?

There are many strengths and weaknesses of this source, generality, logical, critical, and lack of observation of behavior. More specifically, generality and lack of observation were some of the main weaknesses. I say this because both ultimately influenced the collection of results. With that being said, the generality of the experiment demonstrated that culture wasn't a finding that was primarily focused on. Furthermore, it seems as if the professors could do a better job with incorporating an understanding of culture.

- How does the source fit into your research topic? Why is it useful?

This fits into my research topic because it is relevant to what we are trying to investigate. Also, the pdf helps to further understand this question when it comes to other cultures.

Research Paper 6

- What information does this source contribute to your research question?

This research paper contributes a civic engagement piece to our thesis.

- How does the source relate to other sources in your bibliography?

This source relates to other sources in our bibliography because it shares the common theme of youth engagement. Both professors critically emphasize how youth engagement could result in finding solutions for the community.

- What are the strengths and weaknesses of the source?

There are both many strengths and weaknesses that come with this source, specifically, it provides both quantitative and qualitative data.

- How does the source fit into your research topic? Why is it useful?

This source fits my research topic in many different ways regarding the way it is transcribed. The article is useful to me because it can be used to demonstrate the impact youth civic engagement has on students. With that also being said, it can promote the idea behind why local school districts should implement water education.

Science Communication Paper 1

- Team member evaluation: Alexandra
- Citation for the article

Miller, M. G., Davis, J. M., Boyd, W., & Danby, S. Learning about and Taking Action for the Environment: Child and Teacher Experiences in a Preschool Water Education Program. *Children, Youth and Environments*, 24(3), 43-57. <https://doi.org/10.7721/chilyoutenvi.24.3.0043>

- 1-paragraph summary:

This article focuses on the water education preschool. They had three different preschools in the project Water Aware Century Program. The program did many kinds of research with kids and teachers..

- What information does this source contribute to your research question?

The information that they provide from their science program is concentrated on preschool kids, not precisely the ages we are serving. Still, it was fascinating that age and location play a significant role in kids' lives. They also examined the program's aftermath.

- How does the source relate to other sources in your bibliography?

They also see that exposing kids at younger ages has a significant impact .,

- What are the strengths and weaknesses of the source?

Weaknesses didn't look into the bigger kids

Stretchers - interacted with kids and the teacher after the program to see if they still practice what they were taught.

- How does the source fit into your research topic? Why is it useful?

I think it fits really well into the area of also learning what and how the teachers themselves learn with kids and can further on teach water conservation.

Science Communication Paper 2

- Team member evaluation: **Alexandra**
- Citation for the article:
Alternative Development Initiatives. (2024, June 5). *Youth engagement in water Conservation: Educating and empowering the next generation*. ADI International.
<https://www.adi-international.org/youth-engagement-in-water-conservation/>
- 1-paragraph summary:
This article focuses on the importance of educating kids at a young age to make a significant and better impact on the world, especially on the environment. As kids are young, full of the desire to learn, they have the greatest potential to empower change for the greater good of the well-being of the world.
- What information does this source contribute to your research question?
The article gives many different approaches to educating children, from building programs and activities to telling us why it is essential to educate students at a young age.
- How does the source relate to other sources in your bibliography?
The source relates to many sources which aim to address water challenges and environmental knowledge and the importance of sustainability in habits in kids at a young age.
- What are the strengths and weaknesses of the source?
Some of the weaknesses or challenges that the organization faces are funding and support from educators and the community..

- How does the source fit into your research topic? Why is it useful?

This source aligns with my research as it is an organization with a goal similar to ours, and they, too, recognize the challenges associated with incorporating water conservation and sustainability into young children and schools. The article breaks down the concept into parts, making it easier to understand why it's essential for young kids and the future. We, as a group, also see the potential of kids and sustainability to make a difference for our future.