Solarpunk Texts: Exploring Students' Ecocritical Thinking Through Critical Inquiry

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Abstract

The study explored how solarpunk texts may be used to foster students' ecocritical thinking through critical inquiry. Specifically, it investigated how students engaged with and responded to solarpunk narratives and how these texts facilitated their ability to analyze ecological issues critically. Students engaged with three stories through guided recitation, group collaborative activities, and a focus group discussion. The students shared their thoughts and connected the stories to real-life environmental, societal, and technological issues. The researchers then analyzed the students' responses using thematic analysis. The findings affirm that solarpunk literature can be a powerful pedagogical tool anchored with critical inquiry for cultivating ecocritical thinking among learners. By engaging with imaginative but socially grounded narratives, students developed the capacity to analyze and examine ecological issues critically and deepened their understanding of the interconnectedness of environmental and social structures. Likewise, students were prompted to imagine new but reasonably attainable solutions to environmental issues. The study recommends that solarpunk literature be integrated into the secondary English curriculum to foster ecocritical thinking and environmental awareness among students. By using reflective journaling, group discussions, and creative outputs, students' deepen their understanding and decision making. It is also imperative to localize solarpunk themes to students' immediate environments and socio-ecological issues for better engagement and advocate deeper discussions.

Keywords: solarpunk literature; ecocritical thinking; critical inquiry; environmental education; ecological issues

Introduction

Over the past few decades, advancements have been evident in various areas, such as technology, medicine, education, and communication. However, despite these remarkable strides, environmental challenges continue to escalate, with climate change,

biodiversity loss, and resource depletion threatening the well-being of both present and future generations. As humanity advances, its relationship with the environment becomes increasingly strained. Many individuals remain passive observers rather than active participants in addressing environmental concerns. This passivity often stems from a lack of critical engagement with ecological issues, highlighting the core problem: how people perceive and respond to environmental crises. In this context, the role of education in shaping environmentally responsible individuals has never been more crucial.

Education is a core strategy to support the implementation of various approaches to enhance ecological awareness (Saifulloh & Anam, 2022). Therefore, educational systems worldwide have been integrating environmental education to cultivate environmental awareness and preparedness among students. The K to 12 curriculum in the Philippines integrates environmental education to develop ecological awareness and preparedness for climate-related challenges. Such is evident in subjects such as Science, Health, and Araling Panlipunan, as well as specialized subjects like Disaster Risk Reduction and Management (DRRM) offered in the STEM strand for senior high school students (Department of Education, 2020).

Even though these programs are important initiatives, they fall short of addressing the alarming awareness deficit in the general public with regard to the ongoing ecological crises, primarily the actions being taken to mitigate climate change among young individuals. Research by Rogayan and Nebrida (2019) found that environmental awareness positively correlated with high school students in Zambales engaging in environmental issues; however, the Southeast Asia Climate Outlook Survey 2022 stated that in the Philippines, while 97.6% agree climate change is a substantial threat, many Filipinos seem disengaged in taking actions to confront it. The gap in public awareness, particularly for youth who are fundamentally part of the solution to climate change, speaks volumes about the gaps in their environmental education. As such, it is important to investigate students' ecocritical thinking since the ability to engage critically with environmental issues and consider solutions towards sustainable approaches (de la Peña et al., 2018) is crucial.

Ecocritical thinking is an intellectual approach that integrates ecological principles with critical thinking skills to allow people to consider environmental concerns from a broader context (Thanya & Suganthan, 2024). It requires the critical analysis and inquiry of environmental issues, narratives, and representations in literature, media, or society at large. As such, ecocritical thinking should be at the forefront of education and allow learners to explore the connections that human beings have with literature and the environment and how these constructs operate within social contexts that shape environmental problems. Moreover, Thanya and Suganthan (2024) highlighted the significance of critical thinking to ecocritical thinking, as critical thinking helps individuals process information, assess claims, and combine various perspectives. More than anything, critical thinking gives individuals ways to think about issues and strive to

address larger environmental issues. It provides students the intellectual flexibility and resilience to accommodate uncertainty and complexity and not to be afraid of learning processes that can cause difficulties as opportunities for intellectual development. Smith (2020) emphasizes the importance of creating a learning environment that fosters questioning, analysis, and reflection, allowing students to build interpretive/analytical skills for tackling complex concepts and preparing for real-world problem-solving. However, given that the Philippines scored nearly at the very bottom of 79 countries for reading comprehension in the 2018 Programme for International Student Assessment (PISA) (San Juan, 2019), developing this student awareness can be more than just making students aware of local environmental facts, it takes critical inquiry and critical reading, as required means of learning.

Critical inquiry helps students think about the world surrounding them reflectively and makes them grapple with it. Students who engage in critical inquiry do not just take in beliefs and ideas, they learn to interrogate a problem in different ways, to examine the structures behind the problem, and to envision transformations (Spires et al., 2021). Critical inquiry allows self-questioning and pushes the student to question and evaluate the environmental narratives rather than simply accepting them. Likewise, critical reading allows students to interrogate texts that present assumptions and biases as well as deeper ecological questions. Together, education can create awareness and agency through both of these ways, which gives the student a set of skills to analyze issues situated within an ecosystem and work genuinely to address environmental issues and imagine new solutions.

Literature, as a material for critical reading, is also fundamental to developing these skills. As Widiastuti and Syamsi (2023) claim, literature has long been an integral component of English classrooms due to its numerous benefits, including the provision of authentic materials, enhancement of linguistic knowledge, development of interpretative skills, promotion of cultural understanding, facilitation of critical thinking, and stimulation of social development. Teaching literature, especially when students are actively engaged, helps develop critical and ecocritical thinking. This empowers students to address environmental issues in a deeper and more analytical mindset, encouraging sustainable practices and thoughtful problem-solving.

Multiple genres of literature have focused on raising awareness about issues pertaining to the environment and promoting sustainable practices. Dystopian and cyberpunk literature, for example, depicts the consequences of environmental neglect and societal collapse and encourages critical consciousness and thinking in the classroom. These genres engage students in envisioning and thinking through various potential realities they may encounter and their flight or survival strategies in an apocalyptic future. They also allow students to critically analyze and explore pressing issues they encounter as young adults (Berbano & Tanda, 2024).

While these genres provide critical insights into potential futures shaped by

technological advancements and societal decay, they often emphasize adverse outcomes. The overwhelming prevalence of these pessimistic visions has stifled the collective imagination of readers, leading many to accept them as inevitable outcomes (Scott, 2023). Moreover, such representations contribute to a sense of environmental fatalism, which suggests that humanity's efforts to combat environmental issues, such as climate change, may be futile. Therefore, how these issues are translated into fiction is important, as it influences readers' understanding of the crisis and shapes their responses, whether they feel compelled to act or resign to inaction (Więckowska, 2022). Hence, there is a growing need for more optimistic narratives that focus on positive future perceptions. Solarpunk literature, which envisions a sustainable future where technology and nature coexist harmoniously, offers such an optimistic outlook.

Johnson (2020) discusses the pedagogical value of solarpunk, a genre that encourages critical examination of one's environmental impact and promotes proactive action by overcoming widespread cynicism about the future. It serves as a valuable tool for sustainability educators. Furthermore, solarpunk is rooted in an ostensibly optimistic response to climate change and environmental degradation, attributing these issues to capitalism (Pethokoukis, 2023). Schuller (2019) added that "solarpunk optimistically explores questions of gender and sexuality, race and colonialism, environmental and ecological concerns, in the value of capitalism as a societal system, alongside a focus on social ecology." Solarpunk, as a developing genre, envisions a sustainable future focused on ecological awareness and positive technological implementations (Piechota, 2022; Lynall, 2022). It can be seen as a hopeful narrative and context for investigating sustainable futures that encourages readers to imagine and enact change. Solarpunk is also considered a space for environmental sustainability education and ecocriticism (Johnson, 2020). There are engaging opportunities within this space to create environmental awareness in students with the added dimensions of combining sustainability, understanding the educational possibilities of studying ecological and social issues, and a critical lens of literature and the environment, with students developing their critical thinking. Forni (2023) shows that, especially when moving toward a concrete utopia and away from dominant catastrophic narratives, science fiction can play a restorative role and turn into a creative and oblique educational force in the community.

For these reasons, the researchers aimed to use solarpunk literature's current and unique position to explore students' ecocritical thinking through critical inquiry in the classroom. Solarpunk's hopeful vision of the potential for sustainable futures facilitates critical responses to social and environmental issues. Thus, exploring students' engagement when they are introduced to solarpunk texts is noteworthy. As Forni (2023) argues, "solarpunk can promote constructive change such as from an early age, especially when targeted at young audiences from early childhood to young adulthood." Despite the limited presence of youth fiction with strong solarpunk themes in educational settings, this genre has demonstrated its capacity to boost ecocritical awareness and critical thinking skills. It can develop an optimistic view of the future and

respect for nature from a young age, contributing to eco-literacy. It can also help challenge current negotiated frameworks and reframe how to view society and the planet (Forni, 2023).

This qualitative research aimed to investigate the ecocritical thinking of Grade 10 students as they engaged with solarpunk texts using critical inquiry. This study aimed to discover how students received, engaged, and critically responded to these texts with an emphasis on their behaviors and interpretive processes. The study sought to understand how solarpunk narratives, emphasizing sustainability, optimism, and proactive environmental engagement, could influence students' ability to think critically about pressing ecological issues. This research also examined how solarpunk texts could assist students in developing their ecocritical thinking since solarpunk invites readers to contemplate environmental issues through hope and action rather than fear and hopelessness.

Methodology

Research Design

This descriptive-qualitative action research study utilized observations, journals, field notes, and focus group discussions to investigate the ecocritical thinking of the Grade 10 students at Sinait National High School as they engaged with solarpunk texts using critical inquiry. The observed engagement and student responses were recorded and analyzed through the various outputs including interactive discussions, and direct observations. These data provided insights into their ecocritical thinking and interpretive processes when interacting with the solarpunk texts.

Data Gathering Procedure

This study included a number of steps to explore students' ecocritical thinking through their involvement with solarpunk texts.

First, the researchers secured permission from the cooperating teacher, head teacher, and the principal of the school to conduct the study. The planned study was to conduct lessons once a week for four consecutive weeks, with a focus group discussion at the final week.

To orient the students to the concept of solarpunk literature, the researcher provided some information on the genre and then showed the students some images of solarpunk cities so that they could visualize a solarpunk future. The images connected the students to the future sustainable environment depicted in the readings. Then the researcher developed detailed lesson plans for the discussions on the selected

solarpunk text. The lessons were designed to provoke critical inquiry and leave the students engaged with the text.

The researchers then facilitated reading sessions using the solarpunk texts through critical inquiry. Throughout these sessions, students shared their interpretations, feelings, and thoughts concerning the texts. The researchers facilitated interactive discussions and prompted students to interrogate the environmental issues in the stories.

Just as students were asked to write reflection papers after each of the sessions to help them think critically about their readings, these papers were an opportunity for students to tell their experience and observations. The researchers also kept detailed field notes outlining the progress of the study and some of the important or notable events or observations throughout the sessions.

The last data collection method was focus group discussion and it was done in the last week of the study. Researchers developed questions to promote discussion and asked students to share their experiences with the solarpunk texts, which points they found to be compelling, and which themes stood out to them. The emphasis of key questions was to identify which solarpunk stories resonated most with the students, what they got out the texts, and how their environmental awareness changed as a result of engaging with the solarpunk genre. Nine students were the participants.

As part of the sessions, students explored three solarpunk stories highlighting various environmental themes and speculative solutions. The first story, “Pop and the CFT” by Brandon Crilly, depicted a future society where human actions toward the environment have direct consequences. It introduced the concept of a carbon footprint tax and presented environmental responsibility through an economic lens. The second story, “Fighting Fire with Fire” by Gemini Pond, portrayed a community united in collaborative efforts to confront environmental challenges and emphasized the power of collective action. Lastly, “Watch Out, Red Crusher!” by Shel Graves examined the use of biotechnology to address energy concerns while cautioning against such technological advancements' potential risks and unintended consequences. These stories served as focal points for critical inquiry and discussion.

The researchers analyzed data from various sources, including field notes, transcribed student responses to discussion questions, reflection papers, and responses from the focus group discussion. These multiple data sources contributed to triangulation.

Data Analysis

The researchers began by organizing the gathered data, including observations, journals, and field notes. Next, they coded the data, identifying recurring themes,

patterns, and concepts. They conducted a thematic analysis to group similar codes into broader themes and sub-themes (Peel, 2020). To ensure the validity of the findings, they used triangulation by comparing data from different sources. They then interpreted these themes in the context of the research objective. A narrative was constructed to describe the students' experiences, using quotes and excerpts from the data. Finally, the researchers reflected on the implications of the results for further analysis and interpretation.

Results and Discussion

1. Perceptions of the Genre

The researchers utilized critical inquiry through strategies, including guided recitation and collaborative groups. From the reflection papers and focus group discussion as methods discussed earlier, students' written and verbal responses revealed three key subthemes that illustrate their perceptions of solarpunk:

a. Hopeful Futures

The researchers observed that many students perceived the genre as a symbol of progress and optimism during their first encounter with solarpunk, particularly during the introductory session before the stories were read. This first session involved a presentation of solarpunk concepts alongside images that depict solarpunk-inspired futures. These visuals and explanations prompted students to form expectations about the stories, many centered on technology, sustainability, and harmony. Their responses reflected the enthusiasm and a strong hope for solarpunk's possibilities.

> *"I expect solarpunk to help us preserve the environment for our future."*
>
> Student 3

> *"It gives the idea of a promising future, ma'am, a future that is a more organized and better world."*
>
> Student 5

> *"I expect that solarpunk will present a greener future, with less pollution and a more joyful way of life. "*
>
> Student 7

> *"Solarpunk made me curious. I expect it to show a better world and inspire us through technology and environmental ideas."*
>
> Student 9

> *"I expect that solarpunk stories will show us how technology can improve our lives without harming nature."*
>
> Student 1

These responses reflect how students initially perceived solarpunk as an inherently optimistic genre that offers imaginative blueprints for a better future. Even though the students had limited exposure during the first session, they were quick to grasp the core ideas of solarpunk and envisioned it as a genre that not only presents positive technological and environmental possibilities but also encourages proactive thinking about how such futures might be achieved. As Stokka (2021) explains, fiction holds powerful potential inside the classroom as it allows students to explore environmental challenges and possible solutions through imagined realities. This narrative serves as a platform for inspiring action, challenges readers' worldviews, and broadens their understanding of alternative perspectives. In this case, solarpunk texts began to serve that very function: to spark early ecocritical awareness and future-oriented thinking among students, even before engaging deeper with the material.

After being exposed to the stories, the focus group discussion revealed that many students maintained their initial perceptions of solarpunk, although now more informed. Their responses showed that the stories reinforced the idea of solarpunk as a mode for a future shaped by both innovation and care for the environment.

> *"I still believe solarpunk can help preserve the environment and lead us to a better future, ma'am."*
>
> Student 4

> *"Ma'am, I think solarpunk can improve our community. It can make things more advanced and less complicated.* Kasi *based* kadagidiay nabasami, *ma'am, while* agad-*advance*-tayo *technologically*, dapat agad-*advance* met diay ways-tayo *towards sustainability, and aware* tay' dapat no ania dagidiay *consequences* na dagitoy *advancement* iti *nature*."
> [Ma'am, I think solarpunk can improve our community. It can make things more advanced and less complicated. Because based on what we read, ma'am, while we advance technologically, we should also advance our ways toward sustainability, and we should be aware of the consequences of these advancements on nature.]
>
> Student 9

> "Na-*inspire*-nak kadagidiay *stories* a binasatayo, *ma'am*, ken naikkannak iti pag-asa nga baka mabalin agpayso nga agbalinto nga *solarpunk* ti *future*-tayo. Ket innikannakami dagitoy nga *stories* iti *idea* no kasano agbiag ti *solarpunk world, ma'am."*
> [I was inspired by the stories we read, ma'am, and they gave me hope that

maybe our future can truly become solarpunk. These stories also gave us the idea of what it is like to live in a solarpunk world, ma'am.]

Student 3

Others noted how the stories encouraged them to rethink what progress and the future could look like, not just in terms of technological advancement but also in terms of the environment.

"It shows a future where technology helps save agriculture and protect the environment, ma'am."

Student 1

"Innikkannakami iti *courage* dagidiay *stories* nga binasatayo, *ma'am*, *to imagine our world a more advanced*, nga addanto dagidiay *new technologies* nga agke-*care* iti *nature, unlike today* nga *although* agad-*advance*-tayo ti *technology*, adda met dagidiay madi a maidulot-na iti *environment*."
[The stories we read, ma'am, gave us the courage to imagine our world as more advanced, with new technologies that care for nature, unlike today when, although our technology advances, there are still harmful effects on the environment.]

Student 2

From these responses, spanning the initial expectations to the focus group discussion, students consistently expressed an optimistic view of the solarpunk narrative. Their insights suggest a growing appreciation for the genre's potential to serve as a tool for reimagining the future in ways that integrate technological growth with ecological responsibility.

b. Social Awareness

The researchers observed a noticeable shift in how the students perceived the solarpunk genre through their responses to guided questions on the stories. As they explored the narratives, students began to recognize themes not just of environmental sustainability but also of social inequality, privilege, and justice. Several noted how the sustainability efforts presented in the stories often excluded or negatively impacted marginalized communities.

"It might be good for the environment, but what about the poor people who can't pay?"

Student 12

"Solarpunk also talks about problems like discrimination, not just the environment."

Student 1

"*Ma'am, I thought that solarpunk was only about environmental issues, technology* kasdiay, ngem *when I read 'Watch out, Red Crusher!', ma'am, it also shows how people are classified and how those who do not fit in their standard will be like exiled in [from] their community. For example, ma'am*, ket, ni Irwin, gapu nga *red* kulayna ket kasla dida kaykayat 'suna a kadua ken kasla adda ti madi nga panagkitada kanianan uray awan met ar-aramidenna a madi, *ma'am*."
[Ma'am, I thought that solarpunk was only about environmental issues and technology, but when I read "Watch out, Red Crusher!", ma'am, it also shows how people are classified, and how those who do not fit into the standard seem to be exiled from their community. For example, ma'am, Irwin, because his color was red—it was as if they did not want him to be with them, and they looked at him negatively even though he was not doing anything wrong, ma'am.]

Student 20

"Although they have this almost perfect community, it does not change the fact that they trade their sustainability with humanity, ma'am. "

Student 2

"It also shows the sad reality of racism, ma'am, aside from the environmental issues we have right now. Like in Aberdonia, people are treated based on their colors. And it is the same thing with racism, ma'am, that we have today; people are mistreated just because of their color."

Student 10

These responses suggest that students began to develop an expanded perception of solarpunk as they recognized it not only as a genre rooted in ecological themes but also as one that engages with socio-political issues. This evolving understanding among students mirrors what Guner (2022) describes as one of solarpunk's essential goals: to increase the visibility and hearing of marginalized voices that have long been silenced by dominant white, patriarchal discourse. Solarpunk, Guner argues, functions as a powerful tool for disrupting hierarchical and discriminatory worldviews. The fact that students could identify and respond to these deeper themes in the narratives reveals that solarpunk's critical and transformative potential, beyond the environment, is becoming visible and meaningful to them.

Aside from these, some of the focus group discussion responses revealed that students could articulate additional perceptions related to social awareness. When asked which story and theme stood out to them most among all the solarpunk narratives they read, several students referred to "Watch Out, Red Crusher!" and its portrayal of physical appearance expectations and societal conformity.

"*Ma'am, I think the theme that stood out to me the most is the theme of physical appearance expectations* idiay *story*-na, *'Watch out, Red Crusher!', ma'am. For me, ma'am*, diay POV ni Andee *is like a POV of [an] insecure woman* nga madi pasok diay *beauty standard* or madi a pasok diay *standard* diay *community*-da, *ma'am. That is why, now and then, ma'am, she wants to manipulate her color to be accepted. And it is also evident in some of the scenes from the story, ma'am, that she often compare[s] herself to her friends too, ma'am.*"
[Ma'am, I think the theme that stood out to me the most is the theme of physical appearance expectations in the story, "Watch out, Red Crusher!". For me, ma'am, Andee's POV is like that of an insecure woman who does not fit into beauty standards or into the standards of her community, ma'am. That is why, from time to time, she wants to manipulate her color to be accepted. And it is also evident in some scenes of the story, ma'am, that she often compares herself to her friends too.]

Student 2

"'*Watch out Red Crusher!', the last one,* kase kasla naka-*connect* iti *real life situation, ma'am*. Di ba nagpatudokkan ti *solar nanites* tas no ana diay *color* naka-*based* diay *future*-mo *and then* kasla isunto mang-*control* toy bagim tapno maka-fit-ka toy *society*, ken naka-*base* pay diay *color*-mo, *ma'am*, no ana ti *future*-mo."
["Watch out, Red Crusher," the last one, because it seems connected to a real-life situation, ma'am. Didn't you get injected with solar nanites, and then your future depends on your color, and it's like that is what controls your body so you can fit into society, and your future also depends on your color, ma'am.]

Student 5

"*The story, 'Watch out Red Crusher!', resonates with me the most because, just like what Student 2 said*, diay *color*-mo no kua ket naka-*base* diay *work*, *like* tatta makitada lang nga na-*dark* diay *color*-mo, ibagada a mannalon kasdiay."
[The story, "Watch out, Red Crusher," resonates with me the most because, just like what Student 2 said, your color is the basis of your work. For example, if they see that your color is dark, they would say you are a farmer, like that.]

Student 3

Through their interaction with "Watch Out, Red Crusher!" students could identify how solarpunk can reflect issues of social conformity, beauty standards, and color-based discrimination that are deeply embedded in many real-life social structures. The narrative offered a lens through which students could see how technologies, even in seemingly utopian futures, can be weaponized to uphold rigid societal norms about

identity, appearance, and worth.

c. Ethical Tensions

Several students reflected on the ethical dilemmas presented in “Watch Out, Red Crusher!” by Shel Graves, particularly concerning the intersection of technological innovation and human autonomy. During the focus group discussion, students began to grapple with questions about the ethics of using advanced technologies such as solar nanites to alter human bodies, mainly when such modifications occur without individual consent. These reflections point to a growing awareness among students that technological progress, even when environmentally beneficial, can raise critical issues related to agency, identity, and bodily autonomy.

> *“It’s good for the environment, but it might be risky for people.”*
>
> Student 1

> *“Working with nature is good, but there are consequences for how people live.”*
>
> Student 9

> “Diay kua *solar nanites*, ket kua apay nga nagikuada kasdiayen ket uhm awan pake-da diay mabalin nga *outcomes* na diay kuan diay *glow* kadagidiay tao.” [As for the solar nanites, why did they make them that way when they did not consider the possible outcomes of the glow in people?]
>
> Student 8

> *“It is not the right thing to do since, for example, in the case of Andee, their generation was [was] injected with solar nanites without their consent, and the color that glows on her skin due to that solar nanite made her insecure her whole life.“*
>
> Student 4

These responses reflect students’ critical perceptions with the ethical tensions in solarpunk’s technological optimism. While the genre often imagines harmonious futures where innovation and ecology co-exist, the students questioned the human cost behind such ideals. They recognized that in the case of Andee, the involuntary alteration of her body through solar nanites not only stripped her of agency but also reinforced feelings of exclusion and self-doubt within a society that valued certain physical traits over others.

Through these responses, the researchers discovered that the students are absorbing the hopeful narratives of solarpunk and interrogating them. Their insights mirror real-world bioethical debates about consent, bodily modification, and the societal pressures that come with technological advancements. In this way, solarpunk literature

became a platform for students to reflect on contemporary concerns such as data privacy, surveillance, and cosmetic technologies that may shape future societies.

d. Genre Skepticism

While many students found solarpunk stories thought-provoking and engaging, several expressed skepticism about the plausibility of some narrative elements, particularly those that blended science fiction with fantastical or overly utopian scenarios. A prominent example was the inclusion of dragons in "Fighting Fire with Fire" by Gemini Pond, which some students felt disrupted the realistic tone they expected from a genre associated with environmental and technological futures.

> *"Some stories felt too idealistic, ma'am, like the one with dragons… that's impossible."*
>
> Student 1

> *"I think that there will be no chance of our future to have that."*
>
> Student 4

These responses reveal a tension between students' initial expectations of solarpunk as a genre grounded in real-world sustainability challenges and the more speculative, sometimes fantastical, elements that some stories include. Their skepticism reflects a desire for narratives that align more closely with tangible, achievable futures—stories that present environmental and technological change in actionable ways rather than mythical. This reaction aligns with Guner's (2022) observation that solarpunk does not prioritize strict scientific or technological accuracy. Instead, the genre embraces imagination and speculative possibility to envision alternative futures. However, for some students, elements like mythical creatures challenge their ability to fully relate to or believe in the feasibility of solarpunk visions.

Still, as Klata (2022) notes, solarpunk is not solely defined by idealism. While hope is central to the genre, solarpunk accommodates uncertainty, contradictions, and limitations. Many solarpunk stories are not set in post-apocalyptic worlds with sudden, miraculous recoveries. Instead, they often depict a slow, ongoing adaptation to ecological decline, emphasizing community-based solutions and resilience. These imagined societies may showcase tolerance and eco-friendly technologies, but they also acknowledge persistent systemic issues and the unintended consequences of innovation. The students' doubts do not indicate a rejection of the genre. Their skepticism suggests a critical reading practice.

2. Engagement as a Result of Critical Inquiry

Drawing from classroom field notes, student reflection papers, and recorded focus group discussions, the researchers categorized student engagement with solarpunk literature into three interrelated subthemes: emotional, critical, and structural. These

categories reflect the varied ways in which students connected with, interpreted, and responded to the solarpunk stories during and after the reading sessions.

a. Emotional Attachment

Students exhibited spontaneous emotional reactions throughout the reading sessions, particularly when engaging with character-driven moments and dramatized readings of solarpunk texts. Although some students were not typically enthusiastic readers, their emotional responses indicated a different form of engagement: affective and participatory.

During the peer-read performance of "Pop and the CFT" by Brandon Crilly, moments of romantic or intimate dialogue triggered audible reactions such as laughter, light teasing, and comments expressing amusement or affection (e.g., "nakakakilig"). These moments became entry points for students who otherwise would not actively participate in a conventional reading task.

"I felt sorry for Cameron."

Student 23

"Nakakakilig yung interaction nila." [Their interaction was thrilling/swoon-worthy.]

Student 36

In discussing "Watch Out, Red Crusher!" by Shel Graves, students expressed empathy toward the protagonist, Andee, especially about her struggle with self-worth and social acceptance. This emotional resonance allowed students to reflect on their own insecurities and experiences:

"I know, me and Andee are the same, the way she always tries her best to fit in."

Student 17

"Kaasi ni Irwin." [Poor Irwin.]

Student 9

"Oh no, I feel you, Andee!"

Student 28

One student insightfully noted:

"Andee's situation reminds me of our insecurities as people. Even when we have good things, we don't enjoy them fully because we keep chasing the things we don't have—and sometimes, we even force ourselves to have them."

Student 3

These responses reveal that emotional engagement was not just about entertainment or amusement but also an avenue for personal reflection and identification. The students were not merely reading the stories; they were using them to process their own emotional and social realities.

In the focus group discussion, when asked about their reading experience, some students responded positively:

> *"Reading the stories was fun… it gave me more ideas on literature and solarpunk. It's interesting, ma'am, because the more you read, the more knowledge you gather."*
>
> Student 10

The student responses indicate that even students without previous exposure to Solarpunk or an interest in speculative fiction found the overall tenor of these stories to be enjoyable and intellectually grounded. The students could view these stories' roots in science-fiction and environmental sustainability, but they also amplified significant human experiences. Students could relate to the character Andee in "Watch Out, Red Crusher!" and recognize fragments of their own struggles with identity, belonging, and the expectations of society. This emotional and cognitive resonance suggests that solarpunk texts invited students in a multitude of ways. This phenomenon shows not just stories that raised awareness toward environmental stewardship and showcased innovations towards sustainable ways of being, but it also allowed students to find themselves in the characters. They could understand the protagonists as feeling excluded or calling for belonging, or feeling pressure to conform to societal values or issues that situated themselves as real today, as well as imagined futures. This type of engagement reveals possibilities for solarpunk to serve as both a mechanism for ecological engagement, and as space to foster empathy, reflection, and social understanding. It also demonstrates that solarpunk assisted students in anchoring imagined futures with realities, and provided young readers opportunities to reflect on their own values, identities, and roles within their communities.

b. Critical Understanding of Real-World Issues

During the focus group discussion, when students were asked to reflect on their realizations after reading the solarpunk short stories, many demonstrated a growing capacity for critical thinking and social analysis. Their responses revealed an ability to connect some scenarios from the stories to real-world issues such as environmental degradation, systemic inequality, ethical dilemmas, and social justice.

> *"I realized that we should be careful with our actions because everything has consequences."*

Student 2

This response from the student suggests an emerging awareness of ecological ethics, where actions, even seemingly small ones, have long-term impacts. Through stories like “Pop and the CFT” and “Watch Out, Red Crusher!” students began questioning systems of accountability and the fairness of solutions like the carbon footprint tax. The idea that even death does not exempt one from environmental responsibility struck many as controversial.

“After reading the text, I felt encouraged to take environmental action.”

Student 1

The researchers identified this as indicating how the solarpunk stories moved students from passive reflection to a call for environmental engagement. The stories inspired students to reflect and consider change an essential outcome in eco-pedagogy and the broader goals of solarpunk literature. When asked if they would recommend the solarpunk stories to others, the majority of students expressed affirmative responses, and they overwhelmingly said yes:

“Yes, of course! Why not, di ba*? We should recommend these stories to others so they can become aware of environmental issues and social problems that need resolving.”*

Student 8

“I would recommend these stories to others because they spread awareness about environmental issues we are experiencing right now, and help us consider how to solve them in the future.”

Student 4

“These stories made me realize the importance of being eco-aware and socially responsible.”

Student 5

“I recommend these stories to others because they spread awareness about the environmental issues we are experiencing and help us consider how to solve them in the future.”

Student 3

“It made me want to act, to be more connected with others, and to contribute to solutions for the environment and society.”

Student 2

These responses showed that students were not passively absorbing information but were critically engaging with the texts. They identified moral dilemmas, questioned

institutional structures, and explored sustainability ethics in a world increasingly driven by technology. It demonstrates that solarpunk literature, when introduced thoughtfully, can develop critical thinking in young readers. It empowers them to imagine alternative futures while also equipping them with the analytical tools to evaluate the world they currently live in.

c. Making Sense of the Text Structure

In examining the structural engagement of students with the solarpunk texts, the researchers focused on how narrative elements such as pacing, clarity, plot construction, and speculative components affected the students' reading experience and interpretation. This theme was developed through responses in the focus group discussion and reinforced by observational data gathered through field notes during the reading sessions.

When asked how the structure of the solarpunk stories influenced their engagement, student responses revealed mixed reactions. Some students expressed curiosity and appreciation for the genre's conceptual elements.

> *"It was my first time encountering the concept of Carbon Footprint Tax."*
>
> Student 8

> *"What is carbon footprint tax, ma'am?"*
>
> Student 21

This response, along with others that indicated increased exposure to new ideas, demonstrated that solarpunk introduced unfamiliar and thought-provoking concepts that enriched the students' literary understanding.

> "Mayat, *ma'am, reading all those stories was fun for me because it gave me more ideas about literature and solarpunk*." [It was good, ma'am. Reading all those stories was fun for me because it gave me more ideas about literature and solarpunk.]
>
> Student 2

This comment suggests that the story structures supported an enjoyable and educational engagement for some learners. However, not all responses were uniformly positive. Several students commented on structural challenges within the narratives.

> *"I feel confused about the story."*
>
> Student 25

> *"The structure of the solarpunk stories is entertaining and engaging, ma'am… but I think the pacing is kind of slow."*

Student 18

Another remarked on a specific misunderstanding caused by character interactions:

> *"It is not reader-friendly because… I misunderstood the first story… I thought the characters were dating when they were not."*
>
> Student 12

These observations indicate that certain narrative elements, particularly pacing and ambiguity in character relationships, posed difficulties for some readers. Such confusion may stem from limited prior experience with speculative genres or unfamiliarity with the conventions of solarpunk storytelling.

These verbal reflections were consistent with field note observations. The researchers noted a drop in active participation during discussions of the second and third stories. Some students disengaged entirely from group activities and reading sessions. It suggests that structural features such as complex worldbuilding or slow narrative development have contributed to declining interest. Students' confusion and occasional misinterpretations also highlighted the need for scaffolding strategies when introducing unfamiliar genres. As observed, students struggled to contextualize speculative elements within solarpunk and sometimes reverted to literal interpretations, which disrupted their narrative comprehension. Despite these challenges, the structural elements of solarpunk also served a generative function for engagement among some students. The conceptual novelty, such as imagined policies or technologies (e.g., carbon footprint tax), provided the foundation for further inquiry, discussion, and personal reflection. These features, while not universally accessible to all students, contributed to solarpunk's potential as a pedagogical tool for interdisciplinary learning.

3. Critical and Adaptive Thinking

Initially, the students had a narrow, and superficial view of environmental issues, often paying to much attention to idealized version of sustainability, while neglecting the complexities and real life challenges that would have to be addressed to achieve those means and although students started from limited thinking, once they engaged with the solarpunk stories and developed rich discussions about them, students improved their awareness, and thinking skills. By course of the study, students were able to assess the social, economic, ethical, and practical outcomes of environmental action, and they showed improved ecocritical awareness.

Before engaging with the solarpunk narratives, students generally had a positive viewpoint of environmental sustainability, and they visualized future realities where technology and nature coexist. Their responses were often focused on immediate benefits, with a tendency to idealize the potential outcomes of a solarpunk future without

critically analyzing the challenges involved.

Table 1. Thoughts on Solarpunk

Theme/s	***Pre-Exposure***	***Post-Exposure***
Thoughts on Solarpunk	"I expect solarpunk to be greener, less polluted, and more fun to live with."	"I am more motivated to take environmental action because I see our future is better and greener."
	"I expect that solarpunk will help us preserve the environment for our future."	"The story made me doubt if solarpunk is for the good of all because it might be good for the environment, but the CFT [carbon footprint tax] makes it hard. Like, what about the poor people who can't afford to pay?"
	"I expect a better future and helpful technologies."	"I realize we should be careful with our actions because they will always have consequences."
	"My expectation is that it will happen soon and everything we do will be easier."	"I have realized that everything we do today has an impact on what tomorrow we will have."
	"My expectation sa mga babasahin namin ay upang malaman ang kahalagahan ng solaprunk at kung paano ito magagamit." ["My expectation of the readings is to understand the importance of solarpunk and how it can be applied."]	"I'm confused as to why she said beef is bad. After reading or hearing the story [Pop and the CFT], I feel more motivated to take environmental action because I heard that my actions can have a bad effect. I also realize that my actions now can affect my family after I die."

Theme/s	*Pre-Exposure*	*Post-Exposure*
	“After giving us some background information about solarpunk literature, it provides us with the idea or courage to make our world more advanced and ceremonial technologies.”	“After reading the story [Fighting Fire with Fire], it made me think how it is significant for us to have a unity to combat a single problem. For example, in fighting environmental problems, we could work hand-in-hand and through this resilience we will soon achieve a safer and greener world.

At this stage, hope and optimism primarily shaped students' ecocritical thinking. They viewed solarpunk narratives as a solution to environmental problems, focusing on the positive outcomes of technological advancements and ecological sustainability. There was little consideration of the complexities or trade-offs involved in such a future, and critical thinking regarding the feasibility of these outcomes was limited.

In their interaction with solarpunk narratives, students' engagement evolved dramatically. The narratives caused them to consider the environmental aspects of solarpunk along with its social, economic, and ethical implications, and their reflections illustrated their awareness of the complexities involved in sustainability which weight technology and technique against equity, accessibility, and implications for the future.

What students' reflections illustrated was a transformational shift in their thinking. They were no longer in a place to just consider the environmental consequences of solarpunk, they began to move toward engaging with its social and ethical aspects. As they noted in their reflections about carbon footprint tax (CFT) in the story "Pop and the CFT" and its effects on lower income people, they started to consider the intersection of environmentalism and socio-economic inequities. Students began to consider the possibility of a universal application of solarpunk solutions, recognizing a move to sustainable future requires an intentional consideration of issues of equity and accessibility.

Students also began to acknowledge the long-term consequences of individual actions on the environment and future generations. It reflects an increased capacity for critical thinking as students moved beyond surface-level environmentalism towards a more comprehensive and nuanced understanding of ecological issues.

Across the reflections, a strong pattern emerged: students felt more motivated to take environmental action after engaging with the stories—particularly “Pop and the CFT.” Many responses highlight a realization of personal and generational responsibility

for environmental damage.

Table 2. Realizing Environmental Responsibility

Theme/s	*Pre-Exposure*	*Post-Exposure*
Realizing Environmental Responsibility	"Solarpunk will serve as our guide to have a better future."	"I realized that we should be careful about our actions because they will always have consequences."
	"My expectations about solarpunk are that our lives would be much better and advanced. Technology and nature would work together for the greater good. I hope that in the near future; we can actually achieve this."	"My actions now can affect my family after I die." "Taking environmental action helps us improve our mistakes in the past."
	"Everything about solarpunk is interesting for me, so I expect more interesting topics that can inspire me more in terms of technology and environmental work. Moreover, I'd love to be "worried" about the topics."	"The story [Watch out Red Crusher], motivated me to conserve energy. As the story talks about injecting solar nanites to the citizens of Aberdonia, like it made me realize to not waste energy sources. The citizens of Aberdonia have to go through this process as for them to produce energies they can use in their communities and even if that only happen in the story, I do not want to experience that in the future.

These reflections suggest that students began to deeply analyze and internalize the cause-and-effect nature of human impact on the environment. Several responses also questioned systems of accountability: "Why do we need to repay the taxes, and what are the possible things that could happen if we didn't pay?", referring to the first story, Pop and the CFT. Others pointed out injustice in the tax system, asking: "How about the poor people who can't afford to pay? It kind of made me think that solarpunk is for the rich only." Through critical inquiry, students could formulate questions

demonstrating their eco-awareness and essential thinking skills—indicating that they were invested in the story they were reading.

Also, in "Watch Out, Red Crusher!" students reflected on how technology (solar nanites) reshapes identity and inclusion—raising concerns about surveillance, conformity, and bodily autonomy.

> "*The characters do not pick their fate; the government gives it to them. After the characters experience discrimination, the government gives them their fate. What do you think about that? Is that even fair?"*

> "'*Watch out Red Crusher!', the last one ma'am,* kase kasla lang nakaconnect ti *real life situation, ma'am.* Di ba nagpatudokkan tas no ana diay *color* naka-*based* diay *future*-mo *and then* kasla lang *icon-control*-mo la toy bagim tapno kasla lang makuam diay, tapno maka-*fit*-ka toy *society*, ken nakabased pay diay *color*-mo, *ma'am*, no ana ti *future*-mo kasla lang… nagkua la gamin…"
> ["Watch out, Red Crusher," the last one, ma'am, because it seems connected to real life, ma'am. Didn't you get injected and then your color determined your future? And then it's like you just control your body so that you can somehow fit into society, and your future is also based on your color, ma'am, as if… well, that's how it is…]

One student insightfully connected Andee's struggle to real-world environmental challenges:

> "*Andee's struggle symbolizes how people experience environmental challenges differently—some adapt easily, while others struggle*."

In the story "Fighting Fire with Fire," the students connected deeply with community resilience, collective action, and sustainability. Taneen's character fostered an emotional connection to nature as both an ally and responsibility, reinforcing the idea that humans must work with nature to survive and thrive. The following are their responses when asked which characters they resonated with the most, realizations, and what significant symbols they identified in the story.

> "*Even if there is a sea of unfamiliar people, the only thing that matters is how to stop the fire."*

> "Daydiay *dragon*, *ma'am*. Isuna nangpuor ngem isuna met lang timmulong nga nagkua, diay *dragon*. Adda agillemeng *cellphone, ma'am*, tas isuda met la tumulong nga agsapul, kasla kasdiay."
> [The dragon, ma'am. It was the one who attacked, but it also helped in the end, that dragon. For instance, someone had hidden a cellphone, ma'am, and they also helped in searching for it, something like that..]

> "Tapos nabuo diay *green wall through– through the villagers, through unity. Like* dagidiay tattao nagtitinnulongda tapno ma-*build* diay *wall*." [Then the green wall was built through the villagers, through unity. Like, the people helped each other to build the wall.]
>
> "*The fire actually symbolizes the environmental issues we have nowadays. Because… people, like* isuda met laeng ti mangkua diay inkuada nga inobrada nga mang-fix." [The fire actually symbolizes the environmental issues we have nowadays. Because… people are also the ones who caused the problems they are now trying to fix.]
>
> *"There are moments in the stories where I felt a sense of resilience and optimism that we people will have a bright future…, and that, with resilience, we can fix everything."*

This shows emotional resonance and an understanding of solarpunk as a communal, rather than individual, vision of change.

The development of students' ecocritical awareness and critical thinking is evident in their responses before and after exposure to the solarpunk narratives. Prior to reading the solarpunk narratives, students exhibited an idealized perception of environmental sustainability. Their motivation stemmed from the vision of a greener, cleaner world; however, they had not yet engaged in a critical examination of the socio-political, economic, and technological complexities inherent in achieving such a transformation.

Following their engagement with the solarpunk texts, students demonstrated notable growth in their ecocritical thinking. They began to interrogate the complexities of the solarpunk solutions presented in the stories, they raised questions about the inclusivity and long-term viability of such proposed technological advancements. The concerns regarding on equity, particularly the potential burden of the carbon footprint tax on poorer communities, which is reflected in the story, Pop and the CFT, mirrors a deeper realization in their thinking. Instead of passively accepting the solarpunk vision, students started to consider the social, economic, and political challenges that must be addressed to truly attain a sustainable future. Furthermore, their reflections revealed an evolving understanding of the consequences of individual actions and increased awareness on the interconnectedness of environmental issues and equality in society. This shift displays the development in their ecocritical perspective. As shown in their responses, it shows the growing acceptance of the notion that sustainability is not just about technological innovation but also about how these innovations can be integrated into society fairly and advocate inclusivity.

Thus, the continuous progression of students' ecocritical awareness and thinking in the course of the study highlights their evolving ability to not only engage with

environmental issues deeply but also to formulate assumptions and possible solutions to it. Their awareness transitioned from a simplistic, idealized understanding of sustainability to a more profound and critical approach in dealing with challenges in building a more sustainable future. This massively reflects the pedagogical potential of solarpunk narratives, which not only inspire future-oriented thinking but also prompt students to think about the future and critically analyze the ethical, social, and practical solutions as environmental action.

Conclusion

The results of this research indicate that solarpunk literature can serve as a powerful pedagogic tool for promoting ecocritical engagement with Junior High School students. Students who engaged with stories that were imaginative but also socially-situated were able to consider ecological issues and, in doing so, were able to demonstrate a more critical understanding of the interconnectedness of relations within environmental and social systems. With the support of guided critical inquiry, students moved beyond passively reading stories, and toward actively engaging with the processes of constructing ecological meaning, exploring ethical dilemmas and imagining the potential for envisioning a more sustainable future.

The solarpunk texts created a space for hope and criticality, and a space for students to imagine sustainable futures while remaining connected to the socio-political contexts posing environmental challenges today. When in a scaffolded classroom inquiry context, the speculative potential of the genre allowed students to mobilize both creative imagination and the reasoning that is required for complex decision making and responding to the ecological crisis of the 21st century.

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