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From cellphilm to viewer response: MTH belonging, affective, and digital reception in ecopedagogic practice

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ABSTRACT

This article examines ecopedagogic cellphilming – short films made entirely on mobile devices – as a critical, embodied approach to environmental education, and extends the inquiry to viewer reception through YouTube comments. Grounded in autoethnography and a relational, more-than-human approach to research, the study asks whether short, sensory-focused cellphilms can foster kinship, belonging, and ethical attention to ecological crisis. Fifty selected cellphilms were shared on a YouTube channel, where friends, colleagues, and family were invited to comment on their sensory, emotional, and bodily responses. Over five weeks, these comments were read as affective and situated responses rather than as simple feedback, using a combined thematic, sensory, and sentiment-based approach that stayed open to ambiguity and contradiction. Viewer responses revealed recurring themes of wonder, empathy, discomfort, ecological concern, and sensory immersion, suggesting that the cellphilms prompted affective recognition as well as reflection. At the same time, the study indicates that meaning changed when the cellphilms moved from embodied making to mediated circulation on YouTube, where there was a lack of direct interaction and platform dynamics shaped reception. Because participants were drawn from the researcher's own social network, these positive and empathetic responses should be read partly as an effect of that relationship rather than as evidence of the cellphilms' impact on a general audience. The researcher notes several ethical problems in this viewer-response analysis, mostly around consent, privacy, power, and data use. Rather than following a fixed methodology, the study adopts an exploratory and reflective approach suited to the open-ended, practice-based nature of environmental art research, and its findings should be read as situated, exploratory observations shaped by a limited and context-specific sample rather than as quantitatively generalizable or conventionally rigorous qualitative results. Despite these limitations, this research shows that watching cellphilms informed by ecopedagogy on YouTube can still generate a strong sense of ecological belonging, as viewers express wonder, discomfort, and care even without direct embodied experience.

Keywords: cellphilming, more-than-human, sentiment analysis, ecopedagogy, affect, YouTube

INTRODUCTION

My recent research/creation inquiries aim to expand the application of environmental education – defined comprehensively in this article as education of the environment (EoE)[1] – to help learners and teachers develop transformative, engaged practices and approaches to outdoor/indoor ecopedagogies. Misiaszek (2021) gives us a broad definition:

> Ecopedagogies are grounded in critical thinking and transformability, with the ultimate goal being to construct learning with increased social and environmental justice. Rooted in critical theories and originating from popular education models of Latin America, ecopedagogy is centered on better understanding the connections between human acts of environmental violence and social violence that cause injustices/ oppressions, domination over the rest of Nature, and planetary unsustainability. (p. 2)

Ecopedagogies therefore teach to disrupt the repetition of the unending cycle of extraction, bio-destruction, ecocide, oppression, injustice and anthropocentrism that a socio-cultural politics of (un)sustainable economics promises.

In my recent research, my autoethnographic approach was central, using my own embodied experiences of filming and

[1] I refer to all environmental education under the umbrella term EoE as described by Misiaszek (2018), "to signify pedagogies about the environment either with or without the goal of environmentalism, as opposed to environmental pedagogies which have the expressed goal of environmentalism … EoE is an umbrella term that includes environmental pedagogies" (p. 25).

viewing to examine how meaning emerges through sensation, emotion, and reflexivity (Chbib, 2026). Affect is treated as an educational force that shapes perception and ethical orientation, shifting the focus from understanding climate change to feeling and responding to ecological entanglement. The use of short films resists narrative closure, encouraging repetition and cumulative resonance as a form of ecological learning.

In 2023-24, I produced 200 short cellphilms informed by ecopedagogy [2]. I then choose amongst them 50 non-representational cellphilms that explore how affect circulates between image, sound, body, and environment. Rather than treating Nature as an object, these cellphilms foreground more-than-human (MTH) presences such as wind, water, plants, animals, decay, light, and infrastructure, inviting sensory attunement and ethical reflection [3]. Grounded in ecopedagogical thought, the cellphilming project linked ecological crisis to broader systems of colonialism, extraction, and injustice, framing education as a critical and relational practice.

My own positionality as both filmmaker and researcher is inseparable from this research and its analysis. I have worked as a professional storytelling filmmaker for 40 years, and this expertise shaped the cellphilms themselves, including: their pacing, framing, and sensory emphasis as they were crafted, even within an otherwise spontaneous and unscripted practice, decades of narrative instinct. I flag this here, before presenting findings, because it bears directly on how viewers responded: skill in evocative visual storytelling likely shaped the type and intensity of emotional response the cellphilms elicited, independent of their ecopedagogical content. An amateur filmmaker using the same praxis might generate a different distribution of viewer responses, a possibility I return to when interpreting the thematic results below.

To broaden my research inquiries, the cellphilms were shared on YouTube, where viewers were invited to comment on their sensory and emotional responses. These comments became a site of collective meaning-making, revealing how viewers experienced connection, discomfort, and reflection. Sifting through the viewers' comments, I decided to go with a collage-driven, integrated method of analysis that drew from postdigital, post-qualitative, and non-representational research models. This multifaceted approach enabled me to capture the complex ways in which adult viewers engaged with my ecopedagogical cellphilms, moving beyond traditional content analysis to explore the affective, embodied, and sensory dimensions of their responses. This also allowed me to understand data through thematic and sensory perspectives for an enhanced analysis of the cellphilm viewing experience. In this way, my larger research project moves from individual practice to shared experience, showing how digital platforms can both mediate and extend ecopedagogical belonging.

Accordingly, the findings are best understood as situated, exploratory insights drawn from a limited, context-specific sample rather than as generalizable or conventionally rigorous qualitative results. More explicitly, differences in engaging with affective belonging exposes the making/reception gap as pedagogically significant. The contrast between embodied cellphilming and mediated viewing highlights two distinct modes of belonging: one grounded in direct, sensory participation with MTH entities, and the other in reflective, affective interpretation shaped by digital interfaces.

This article elaborates on the research question: *How do viewers of ecopedagogically informed cellphilms on YouTube experience and articulate affective, embodied, and MTH belonging, and what does this reveal about the pedagogic potential of short-form digital ecopedagogy praxis?* I analyze the responses to ecopedagogically informed cellphilms with a limited audience shared on a YouTube channel for a viewing period of five weeks[4]. Adult viewers were asked to engage with their emotions, feelings, and sense of embodiment to understand and engage in a kinship and/or sense of belonging with the MTH co-participants in my cellphilms.

I examined how viewers responded to the cellphilms as MTH encounters, and how their comments illuminate the pedagogic potential of short form ecopedagogic media use. I shared the cellphilms online to further my preceding inquiries and compare the generation of empathy, belonging and kinship between cellphilming praxis and cellphilm viewing. I also situated the project within a broader ecopedagogical commitment to relational learning, where environmental understanding emerges through feeling-with, watching-with, and thinking-with MTH others.

Embracing participatory media as a powerful tool for social change and community empowerment, I utilized platforms like YouTube and Vimeo to share and/or store my cellphilms. These platforms not only facilitated the dissemination of my work but also created spaces for dialogue and collective meaning-making (Burgess et al., 2018; Freeman et al., 2014; Hall & Walsh, 2015; K.-H. Yang, 2015). The comment section became a rich source of data, offering insights into how viewers connected with MTH entities whilst viewing the cellphilms.

Throughout this sharing process, I remained acutely aware of my role as both cellphilm maker and researcher as I engaged

[2] Dockney and Tomaselli (2009) coined the term cellphilm by combining two words—cellphone and film—to describe the combination of multiple communication technologies in one device (MacEntee et al., 2016, p. 1). Cellphilms are short videos created entirely using mobile devices such as cellphones or tablets. Typically lasting between 1 to 4 minutes, these videos are designed to convey a specific message or respond to a prompt, often without extensive editing.

[3] The overarching term 'MTH' includes all entities that are not human, including living and non-living entities such as animals, plants, fungi, microorganisms, machines, digital interfaces, atoms, geological structures, water, air, silence, planets, chaos, keyboards, dreams, weather patterns, urban infrastructures and even thoughts. I will be using MTH entities or MTHs in my inquiry as the distinctions between different usages in academic papers are not yet clear. Ducros (2021) explains, "Non-human, MTH, other-than-human, posthuman, transhuman, anti-human, multispecies, transspecies—all are terms that have been circulating in the humanities and social sciences, but have lacked clarity in their definitions, interpretations, purposes, uses, and range of application" (p. 1).

[4] The responses on the posted cellphilms were executed in a YouTube channel called 'www.ecopedagogy.ca'. I also backed up the videos on Vimeo.com.

with the data (Ellingson & Sotirin, 2020). As a research-creation project drawing on voluntarily offered, publicly posted anonymous responses to a screened cellphilm, this inquiry fell outside the scope of work requiring formal research ethics review; I nonetheless held myself to the protections such review would require, informing viewers of the project's purpose before they responded, allowing comments to be withdrawn on request during the five-week screening window, and removing all identifying information prior to analysis, such that only the emotional content of statements – never the persons behind them – entered the analysis. Within that self-imposed ethical framework, I acknowledge unresolved concerns related to consent, privacy, power, and data use – particularly given that participants were also personal contacts – noting that the inquiry is inherently partial, messy, and reflexive rather than methodologically fixed (St. Pierre, 2012), an approach well suited to research-creation work of this kind. This is further discussed in the section on limitations. In the following sections, I will detail my methodological approach, present my findings, and discuss the implications of this work for ecopedagogy.

PURPOSE

Climate change discourse increasingly demands urgent action intertwined with economic development, social justice, and planetary survival. Yet despite promises of low-carbon and digital transitions, progress remains uneven due to regional inequalities, ongoing fossil-fuel dependence, and unequal climate vulnerability. The slow pace of change reveals not only technological and policy limitations but also a deeper failure of imagination, affect, and environmental citizenship education. Education for environmental citizenship (EEC) is argued to be very significant in the development students learning about ecology, sustainability and active environmental democratic citizenship (Gericke & Torbjörnsson, 2022; Hadjichambis & Paraskeva-Hadjichambi, 2020). Furthermore, the use of digital and alternative technologies, imagination and storytelling is shown to promote biodiversity and educate students about sustainability – thus facilitating a successful environmental citizenship education (Brečka et al., 2022; Hadzigeorgiou, 2018; Oladosu, 2020; Schelly & Banerjee, 2018; Xia, 2024)

According to the Ericsson mobility report, by the beginning of 2026, there were approximately 8.83 billion mobile subscriptions worldwide, 84% of the population, with 7.41 billion being smartphone subscriptions (Davis, 2026). It is evident by the numbers, that the smartphone revolution has made the use of phone cameras very accessible for the majority of the World's human population.

The use of new technologies has been shown to enhance education across several curricula and subject matters, including STEAM, citizen science, and mathematics (Chozas et al., 2023; Quigley et al., 2020; Schacter & Jo, 2016). Smartphone and other mobile digital recording device use has also been shown to enhance learner (in)formal education in ecology-related curricula (Adams et al., 2024; Caiman & Kjällander, 2024; Hillman et al., 2016; Hjorth & Richardson, 2018). In recent years 'intelligent' technologies such as smartphones and tablets have entered participatory action research in social work, healthcare, and pedagogy (Burkholder, 2018; MacEntee et al., 2016; Milne et al., 2012; Mitchell & de Lange, 2013). Taken together, these studies converge on a consistent finding: mobile and digital tools reliably increase engagement, accessibility, and content delivery across formal and informal learning contexts. What they do not examine, however, is whether that increased engagement produces the affective, embodied, or relational shift that ecopedagogy specifically calls for – none asks whether a learner who watches or makes mobile media on a screen comes to *feel* differently about their relationship to Nature, as opposed to simply learning more effectively. Mobile devices can therefore enhance environmental education but should not be viewed as a panacea; whether they can also cultivate ecological belonging remains largely untested, which is the gap this study addresses.

My recent inquiries argue that environmental education must move beyond fact-based instruction toward post-digital ecopedagogies that are sensory, affective, relational, and ethically transformative (Chbib, 2023, 2026). Current approaches often raise awareness without enabling meaningful action, leaving learners informed yet emotionally disconnected or overwhelmed. This is especially true for younger audiences, who encounter climate crisis through abstract data and distant imagery that fail to connect with lived, embodied experience. As a result, education risks reinforcing passivity rather than agency. What is needed is an approach that engages feelings, perception, and relational awareness alongside critical understanding. Also, more recently ecopedagogy research has pursued MTH inclusivity to enhanced democratic EEC (Chbib & Misiaszek, 2025).

My theoretical framing maps onto a specific arm of the research question rather than functioning as free-floating conceptual scaffolding. Braidotti's (2012) nomadic thought informs how I tracked affect as it moved fluidly across the making process, resisting any fixed or stable account of what "belonging" with MTH entities looks like. Framing the work as an "ethico-onto-epistemological" inquiry (Barad, 2007, p. 185) grounds the specific claim, developed in later sections, that knowing and ethical responsibility are inseparable from the act of cellphilming itself. And the postdigital lens (Jandrić & Ford, 2022) is what subsequently allows me to ask whether that same affective belonging survives, changes, or diminishes once the cellphilms leave my hands and enter YouTube's mediated, platform-governed space. In response, my research positions cellphilming as both method and pedagogy. My research-creation inquiries do not just study MTHs, the World and Nature, I enact new relational possibilities through them. By foregrounding materiality, MTH agency, and creative experimentation.

THE DECISION TO SHARE ON YOUTUBE

In general throughout this analysis, I followed a praxis guideline for disseminating cellphilms as an ecopedagogical tool that I outline in earlier research (Chbib, 2023). This guideline included step-by-step instructions for creating, sharing, and analyzing cellphilms, as well as strategies for

facilitating discussions and reflections around the content. It is important to note that the primary focus of my early research was on understanding and potentially inducing a sense of belonging with MTHs for the learner engaged in cellphilming, rather than on audience reception.

Recent research demonstrates that video's multi-sensory Nature offers significant advantages for learning, particularly in educational contexts. These studies also examined how communities utilize YouTube for learning purposes, focusing on perception, academic usage, and the impact of user-generated metadata on video selection (Koc & Yucel, 2022; Lee, 2012; Pokharel, 2014; Qi, 2019). Online video supports individual learning, increases engagement, and effectively demonstrates complex subjects and dynamic processes (Burgess et al., 2018; Lee et al., 2017; S. Yang et al., 2022). Online comments create a dynamic and communal space for collaborative learning and knowledge production.

YouTube has become the most popular posting site because of the ease with which sharing videos has been prioritized since its inception (Balakrishnan & Griffiths, 2017)[5]. YouTube has also become a ubiquitous tool in higher education, offering diverse learning opportunities despite lacking standardized quality assurance (Bardaki, 2019; Greeves & Oz, 2024; Koc & Yucel, 2022). This inevitably poses a challenge for users, who must navigate a vast library of content to select suitable educational videos. Recent studies compared how college instructors and learners prioritize YouTube video features during selection (Greeves & Oz, 2024; Lee, 2012). The studies found that both groups value accuracy, expertise, duration, and style. They also indicated that learners place more emphasis on features like view count and comment feedback. However, concerns about educational content quality persist, partly due to algorithmic factors that may favour entertainment over educational content (Noetel et al., 2021; Shoufan & Mohamed, 2022; Snelson, 2018). Despite these concerns recent research also supports the view that entertainment can be educational (Archambault, 2023; Turan-Özpolat, 2020)[6]. In addition, YouTube along with many other platforms have also become crucial for civic engagement, activism, and knowledge sharing. They offer a space for self-expression and commercial media, influencing social connectivity and community building (Burgess et al., 2018; Cicchino et al., 2023; Lange, 2014).

The platform's key features include interactive engagement, multimodal content, public accessibility, collaborative knowledge production, and digital literacy integration. YouTube has become integral to self-presentation, blurring lines between online and offline selves (Balleys et al., 2020; Hjetland et al., 2022). Digital sharing technologies such as YouTube create new forms of materiality, acting as agents that shape social relations and influence which identities can materialize in both virtual and physical spaces (Bollmer, 2019; Yengin & Bayrak, 2023)[7]. This aligns seamlessly with ecopedagogical principles by fostering a justice-based, socially minded learning environment that facilitates meaningful rapport with participants through multimodal engagement (Epstein-HaLevi, 2021; Misiaszek, 2022). The widening of reflexive practices to include viewers as participants, potentially leads to more nuanced understandings of environmental issues and human-more-than-human-Nature (H-MTH-N) relationships. The platform also fosters a global perspective on environmental issues by linking to similar projects and research within the postdigital environment – a crucial aspect of ecopedagogy (Buch et al., 2024; Fawns et al., 2023; Jandrić & Ford, 2022). Consequently, the pedagogic aspects of YouTube posting, and sharing are numerous, offering collaborative (in)formal education environments and spaces for community building.

HOW I SHARED THE CELLPHILMS FOR FEEDBACK

I began by setting up a website www.ecopedagogy.ca that had links to the cellphilms. This website described the parameters and limits of the viewer participation and comments needed in relation to my research-creation questions. The site not only presented a link to the YouTube channel (playlist) that showcased the cellphilms but also facilitated discussions about ecopedagogy and human-Nature connections through previously selected links to ecopedagogy on-line videos.

I proceeded by uploading my fifty cellphilms to both Vimeo as backup and YouTube as a platform for viewer interaction. I chose only one platform for the purpose of sharing and screening my cellphilms – YouTube. YouTube made retrieving data (comments) easier. The analytics dashboard provided me with immediate access to key performance metrics such as views, likes, comments, engagement rates, allowing for easy tracking and comparison of video performance over time. YouTube also provided easy access to download all comments including metadata such as author, posting date, and replies, which were exported in formats like CSV for further analysis. Also, I used user-friendly third-party tools and web-based

[5] Discussing YouTube Lange (2014) states: "The company was founded in February 2005 by Chad Hurley, Steve Chen, and Jared Karim, who met when working at PayPal, an online payment service (Hopkins, 2006). The site's first test video had the look and feel of a grassroots effort. Entitled Me at the zoo, the 20-second video depicted Karim in front of an elephant exhibit simply commenting on the animals' trunks (Pham, 2010)" (p. 8).

[6] YouTube supports various educational activities, including distance learning and lecture preparation, and has been shown to positively impact student engagement and learning outcomes (Bardaki, 2019; Brame, 2016; Hung et al., 2024; Wright & Nagy, 2022). Studies highlight the importance of understanding user preferences and platform affordances to effectively integrate YouTube into educational settings.

[7] Bollmer (2019) explains that "Media perform through their ability to inscribe, to document, and to write. They permit something to be written down and stored over time. This shapes memory and sociality and locates particular bodies through what can be seen, said, and recorded about them" (p. 174). Yengin and Bayrak (2023) state that YouTube: "… virtually serves as an archive with the sharing of content such as personal creativity, sharing of experiences, and local culture. Individuals isolated by the postmodern era have flocked to the YouTube platform with a sense of belonging. As a result, individuals isolated by the postmodern world have found themselves in such programs and have made an important contribution to the development of this culture" (p. 109).

scrapers to simplify the process, letting me extract and download large volumes of comments without technical expertise.

I sent out emails to my friends, colleagues, and family members inviting them to participate in the project; 41 of approximately 70 people contacted responded positively and agreed to view and comment on the cellphilms, a response rate that reflects the personal, relational nature of the recruitment rather than a randomized or purposive sampling strategy common to conventional audience research. I did not collect demographic information (age, gender, cultural background, prior familiarity with environmental education) from these viewers, a decision consistent with my narrow focus on affective and sensory response but one that limits any claim about how representative these viewers are of a general YouTube audience. Comments were solicited via a public post that disclosed the purpose of research and stated that no usernames or identifying details would appear in any output; only the emotional content of statements was extracted, with no reference to individual commenters. Participation was voluntary and unremunerated, and no personal data were stored. I offered instructions in the email to introduce the project and gave them easy access to the cellphilms. In the email I asked that the viewers concentrate on:

> "... the affect, emotion, empathy, kinship, and senses that you experience – as this is the purpose of the research. Choose any of the fifty to start according to your likes or dislikes of the descriptor. Then proceed in the playlist to the next one you want to do." (invitation to participate; November 4, 2024)

I then waited a couple of weeks and sent a second email to remind the viewers to participate, re-sending these invitational emails two more times before thanking everyone and temporarily closing the comment section of the channel.[8] Because I both recruited and personally knew every respondent, I return to how this shapes the emotional tone of the resulting data in the Limitations section below.

Once the screening period of five weeks (November 4th to December 9th, 2024) ended, I downloaded various versions of the YouTube analytics describing viewer participation, length of viewing, and engagement over time to add a longitudinal approach to my research. YouTube data analytics stated that the average video duration was 147.5 seconds (about 2.5 minutes) and the total views during the five weeks was 803. There were 16 average views per video and average click-through was 134.[9] The total watch time was 17.6 hours, and the number of impressions was 6,742.[10] The average impressions click-through rate (CTR) was 6.74 percent. There were 258 comments posted. These metrics indicated a modest, consistent, but engaged audience, with viewers spending an average of 1.18 minutes per video, watching on average halfway through each video. These responses were then analyzed for how viewers engage with, embody, and interpret the audio-visual content provided by the cellphilms.

While prior research has examined cellphilming as an embodied making-practice that cultivates kinship with MTH entities (Chbib, 2023, 2026), and a separate body of work has studied YouTube as a site of informal and educational engagement (Burgess et al., 2018; Koc & Yucel, 2022; Lee, 2012), these two literatures have not been brought together. No study has yet traced what happens to ecopedagogical meaning as it moves from the intimate, embodied act of cellphilm-making to its mediated circulation and reception by an audience on a digital platform. This article addresses that gap by asking not only how cellphilming produces belonging for the maker, but how differently that belonging is taken up, attenuated, or transformed when the same cellphilms are viewed by others online.

METHODOLOGICAL APPROACH TO COMMENTARIES

I monitored the comments and their engagement metrics such as author, posting date, and viewing data, while they were posted. I noticed distinct patterns emerging in how viewers interacted with the content. I also downloaded all the comments made during the viewing period using Apify's YouTube comments scraper[11]. Analyzing the comments and their analytics allowed me to observe how viewers' perceptions and connections to the cellphilms shifted over time and during the views. It also gave me data regarding the date of access, the number of views, the (not)liked cellphilms, the most and least number of comments on each cellphilm, and the watch time spent on each cellphilm.

As a solo-coded, post-qualitative analysis, this study does not employ conventional inter-rater reliability checks, since no second coder cross-verified theme or sentiment assignments. In place of that convention, I relied on the transparency, reflexivity, and audit-trail practices recommended for PQI research (St. Pierre & Jackson, 2014) by retaining and quoting original, unedited comments (including spelling errors and emojis), documenting my coding decisions in a research diary, and revisiting initial codes multiple times as themes were refined. I evaluate comments against criteria more appropriate to autoethnographic and post-qualitative work: verisimilitude (does the account feel true to lived

[8] I re-opened this channel in 2026. I aim to include many more of the cellphilms for ecopedagogic purposes and open the channel to public ecopedagogy related cellphilm postings in the future.

[9] A click-through occurs when a user selects a particular link, advertisement, or call-to-action after seeing it-whether on a website, in an email, or within an online advertisement. The CTR quantifies this engagement by calculating the percentage of users who click on a link out of the total number of users who viewed it (impressions). Commonly, CTRs assess how engaged users are and to evaluate how effective marketing materials are at prompting interaction.

[10] In YouTube analytics, impressions represent the number of times my cellphilm's thumbnail is displayed to users on YouTube, including appearances in search results, the homepage, recommended sections, playlists, and other parts of the platform.

[11] Comment data were collected via a third-party scraping service (Apify); I acknowledge that automated collection of this kind sits in tension with YouTube's Terms of Service, and I therefore limited collection to publicly visible comments, stored no personally identifying account information beyond what is required for analysis, and reported results only in aggregate.

experience), resonance (does it evoke recognition in readers who have not shared the experience), and reflexive transparency (is the researcher's influence on the data made visible rather than hidden) (Ellis & Bochner, 2000). Judged against these criteria rather than conventional qualitative rigor, this analysis aims to offer a credible, if partial and situated, account of viewer reception – not a replicable measurement of it. This is a deliberate methodological trade-off rather than an oversight: it sacrifices quantitative reliability in exchange for the kind of situated, reflexive engagement with the data that a PQI approach requires, and the findings below should be read with that trade-off in mind.

The first step in my analysis involved meticulous data preparation. I focused on preliminary immersion and organization, which served as the foundation for the entire analytical process. Having already exported the data into an Excel file and a Word file from YouTube analytics, I ensured that all columns were clearly labeled with appropriate headers: Timestamp, Username, VideoID, Comment, and Date. I removed the Usernames and gave them a number (commentator 1, 2, 3, etc.) This organization facilitated an easier navigation, engagement, and sharing of the dataset.

THEORETICAL FOUNDATIONS OF THE DATA ANALYSIS

I relied heavily on a discourse analysis approach for the processing of my eventual research data (cellphilms and viewer response)[12]. This seemed insufficient for understanding the affective sensual, emotional, embodied and intra-active perspective of belonging and kinship formations with MTH entities. Traditional methods wouldn't suffice to capture the complex, multifaceted nature of viewers' responses to my ecopedagogical content. More recently, researchers unconventionally resist anthropocentric domination, recognizing various forms of MTHs such as algorithms, plants, and urban wildlife as collaborators rather than passive subjects. I needed to be 'inclusive' of the data – to let the data speak (St. Pierre & Jackson, 2014). I approached the data from a PQI perspective which allowed for a more organic understanding of the data to emerge as the MTH data communicated with me its intentions. PQI researchers engage with data as dynamic assemblages where agency emerges through interactions between humans, MTH actants (e.g., algorithms and ecosystems), and digital infrastructures.

I examined the comments as part of a complex ecosystem where digital and non-digital elements intertwined and blurred (Jandrić & Ford, 2022; Jandrić & Knox, 2022). I experimented with 'thinking with theory,' using concepts from ecopedagogy and new materialism as lenses through which to view the data. This approach allowed for a more fluid and creative engagement with the comments, opening up new possibilities for interpretation (Jackson & Mazzei, 2018; St. Pierre, 1997; St. Pierre & Jackson, 2014).

I additionally adapted Pink's (2015) sensory ethnography methods, I paid close attention to how viewers described their sensory experiences and emotional responses to my cellphilms[13]. This approach revealed deeper connections to MTH entities, as I noted references to specific senses, emotions, and bodily experiences described by viewers (Pink, 2015). The two (PQI and sensory ethnography) approaches to data participation made me better understand what the comments were expressing.

DATA ANALYSIS PROCEDURE

To implement this integrated PQI sensorial approach, I immersed myself in the data and created a series of analytical events where I engaged with the comments through different theoretical lenses. I mapped the assemblages of human and MTH actors involved in the comment-creation process, considering how these relationships might have influenced the content and tone of the responses. This process allowed me to develop a sensory map of the comments, noting references to specific senses, emotions, and bodily experiences described by viewers.

Throughout the analysis, I experimented with creative and non-linear ways of presenting my findings. I looked at the cellphilms as I read the comments creating visual collages, audio spaces, in an interactive digital viewing experience that reflected the postdigital nature of the research. I wished to entangle the responses to my cellphilming praxis and experiences and to perform with the comments. These were intended to capture and convey aspects of the viewers' responses that might have been lost in a more traditional textual analysis. This multifaceted approach allowed me to explore the complex ways in which viewers engaged with my cellphilms as compared to my autoethnographic cellphilming praxis.

CATEGORIZED DATA ANALYSIS OF YOUTUBE COMMENTS THROUGH THEORETICAL LENSES

I used an integrated sentiment and thematic analysis as part of my PQI data analysis perspective and theoretical approach. I immersed myself in the data to identify initial emotional and thematic cues. Though I focus here on comments that clearly engaged with embodiment, belonging, kinship, emotions, affects and the senses, all comments were

[12] Such as methodological proposals using critical analysis and critical video analysis (Braden, 1999; Fairclough, 2003; Gauntlett, 2015; van Dijk, 1993; Wodak & Meyer, 2003).

[13] Pink's (2015) approach is reflexive and experiential, focusing on how people perceive, experience, and make meaning in the World through embodied, multisensory engagement. She advocates for openness to multiple ways of knowing, including participant observation, sensory interviews, walking with participants, and using digital technologies like video to capture lived experiences. The aim is not to produce an objective account of reality, but to offer rich, contextually loyal versions of experience that attend to the interconnections of smell, taste, touch, vision, and hearing within specific environments and practices.

considered in my analysis[14]. I did not discard, paraphrase, or narrow the original comments, and they all were analyzed as they were posted – with spelling errors and emojis.

Then, I coded for both sentiment (positive, negative, and neutral) and themes reflecting the narrative's emotional and sensuous aspects. I grouped codes into meaningful themes, reviewed and refined them to capture emotional depth, and integrated sentiment results with thematic patterns. Finally, I reported findings emphasizing embodied emotional expressions within the narrative. I did not use qualitative analysis software to aid this process.

In general, I limited the discourse analysis to analyze the narrative of the commenters and approached the data from an emotional, embodied, and sensuous perspective. This allowed me to explore how commenters use contingent normative evaluations on the cellphilms, particularly concerning the value of belonging with MTH entities, and how the commenters positioned their discussions on their environmental concerns.

Idiographic analysis of YouTube comments often aims to understand the commenter's experience at various phenomenological levels (Rogers et al., 2023). This included in my investigation of the comments the emotional and sensuous aspects of the viewer's experience. This tailored the approach of the data to the specific emotions, needs and characteristics of MTH entities interacting with them (Piccirillo & Rodebaugh, 2019). I thus demonstrated idiographic sensibility by giving equal consideration to both individual comments that do not fit overarching patterns and those that can be thematized (Beltz et al., 2016). I gave equal weight to both comments that fit into broader themes and those that stand out as unique or divergent. This ensures that valuable insights are not overlooked simply because they don't conform to the majority opinion.

Idiographic analysis allows researchers to identify themes and patterns that emerge organically from the data, rather than imposing pre-existing categories (Lamont et al., 2023). For a theme to qualify and prompt me to delve more deeply into the comments, a shared matter of concern had to appear in at least eight separate instances. For example, wildlife interaction, plant life, urban ecology, sustainability, pollution, climate change, anxiety were all recurring themes in the comments.

Initial impressions suggested that viewer interest was shaped by the wide range of ecological themes across the cellphilms, with comments often tied to specific subjects such as wildlife, plant life, natural phenomena, H-MTH-N interactions, urban environments, and cultural-ecological events. This diversity prompted engagement across multiple scales of MTH life, reflecting an awareness of ecological interconnectedness. The comments also revealed varied emotional responses, ranging from appreciation and excitement to discomfort and frustration, with many expressing empathies generated through the viewing experience.

At the end of this phase of the analysis, I realized that I had not addressed the unique relationship between myself, as the researcher and creator, and the viewers of the cellphilms, who were also my friends. They weren't simply an anonymous audience; they were watching cellphilms that I had made and had personally invited them to watch. This pre-existing affectual connection inevitably shaped the way they engaged with the content, plausibly making them more likely to respond with courtesy, encouragement, or affirming empathy than a stranger-audience would, and less likely to post indifferent, critical, or disengaged comments out of consideration for our relationship. Their responses were influenced not just by the cellphilms themselves, but by their relationship with me as the creator and by my prompts in the invitation. I return to this dynamic directly when interpreting the predominance of positive sentiment in the findings below.

Through my proposed approaches in my integrated perspective, I analyzed and participated 'with' the data. I focused on how each approach operates uniquely within my integrated method ending with some clarifying results. Mixed quantitative-qualitative and post-qualitative methods normally require more information is collected about the viewers (gender, age, education, culture, race, social background, education etc.) and their environment (where they are watching, what support and technology, with whom, web accessibility and the ecosystem in general). I was only interested in the emotional, sensorial and affective comments made by viewers in their comments. These missing parameters may influence the data, screenings, reception, shareability, accessibility and the emotional, sensual, and affective impact of the screenings.

A PQI APPROACH TO DATA

The PQI approach enabled interpretations that move beyond fixed coding by engaging comments as reflective sites shaped by ecopedagogical concepts such as environmental ethics, interconnectedness, and place-based learning. Through dialogue, critical reading, and experiential engagement, this approach foregrounded climate justice, challenged anthropocentric narratives, and supported pluriversal perspectives that recognize MTH agency. Attention to materiality was central – cellphilms, technologies, and environments actively shaped meaning. For example, the intimate scale of cellphilms and specific contexts, such as forests or oil tanks, elicited distinct affective responses. Using a diffractive methodology (Barad, 2014), meanings were understood as emerging through material-discursive intra-actions, producing themes as provisional and relational rather than fixed.

Viewer responses ranged from explicit ecological critique to affective and sensory engagement, including feelings of awe, fragility, and loss, as well as political resistance and reflexivity about media representation. The relational proximity between researcher and participants added intimacy, highlighting the situated nature of the data. Comments also reflected ecopedagogical concerns such as intergenerational responsibility and sustainability. A new materialist lens further revealed how meaning emerges

[14] I translated all comments that were posted in French and Portuguese language to English with online translators *perplexity.ai* and *deepl.com*.

through assemblages of humans, technologies, and infrastructures, while platform dynamics like algorithms and visibility shaped audience engagement.

Comments were analyzed with a PQI approach not just for content, vitality and intra-activity but for how they critique anthropocentric views or express ecological responsibility. The materiality of cellphilms and the environmental settings were considered for their impact on viewer responses. Comments used sarcasm, political activism, emotional connections to Nature, and reflections on intergenerational responsibility and sustainability. In addition, the physical environments shown in the cellphilms evoked strong emotional and cognitive responses, influencing viewers' perceptions of Nature and environmental issues. Comments revealed that responses broadened their perspectives by acknowledging the interconnectedness of elements, moving beyond their human-centric view. This is evident in comments that reflect on the inclusion between human technology and MTH life – such as the impact of technology on animals and Nature.

SENSORY ETHNOGRAPHY

Pink's (2015) sensory ethnographic method for data analysis focuses on reading and understanding the viewers' sensory experiences and emotional responses to the cellphilms. Sensory ethnography asks that we identify the sensory language by extracting all comments that explicitly mention senses: sight, sound, smell, taste, touch, balance, intuition, etc. This requires that we look at how vividly and precisely the viewers describe their sensory experiences. Questions arose when doing this approach that helped me understand the interactions between the viewer and the cellphilm: How did sensory experiences trigger emotional responses? What are the specific details sensed by the viewers? Are there recurring sensory themes across different cellphilms (e.g., the sound of water, the smell of earth, and the feeling of sunlight)?

Paying close attention to how viewers described their sensory experiences and emotional responses to the cellphilms revealed deeper connections to MTH entities. One viewer wrote "*I can smell the grass, what a beautiful scene, the neighborhood & the time of day makes me feel nostalgic,*" in response to the "Deer walking through town, Ashland, Oregon" cellphilm.[15] It displayed the power of connecting memories with sensual elements. When viewers encounter sensory cues in a cellphilm – such as the sight of a landscape, the sound of birds, or the imagined smell of grass – these cues can evoke imposing emotional reactions. This is because sensory information is processed in the brain in ways that are directly tied to regions responsible for emotion and memory, such as the amygdala and hippocampus (Rodriguez & Kross, 2023; Royet et al., 2000).

Several viewers became distracted by the sensory intensity of the cellphilms, pointing to the embodied nature of their engagement. As one noted, "*first the fig leaf gave me such joy… halfway through I got distracted by the shaky camera movement that made me nauseous*." This response suggests that viewing was not purely cognitive but physically felt, producing sensations such as imbalance, discomfort, and dizziness. Even when unpleasant, these visceral reactions demonstrate the capacity of cellphilms to affect the body directly. Following Boler (1999), such discomfort can act as a catalyst for transformation, fostering a more flexible sense of self and a deeper commitment to environmental awareness. Rather than signaling disengagement, this unease may reflect the immersive depth of the cellphilms, unsettling habitual perception and blurring boundaries between viewer, medium, and environment.

A sensory ethnographic lens further reveals how specific senses intertwine with cognition, reflexivity, and affect. One viewer described a meditative experience while watching a railway scene, becoming absorbed in the stillness of waiting before being startled by the train's arrival. As reflected in my diary notes, this shift exposed how their sensory, emotional, and temporal awareness became entangled with the machine's movement, dissolving distinctions between observer and environment into a moment of relational becoming.

Other responses highlighted the activation of multiple senses. One viewer wrote, "*Sleepy, I can smell the rain, want to make some tea & read a book,*" while another noted, "*Beautiful, soothing sounds … I can feel my breastbone vibrating*." Such comments demonstrate how sound, smell, and tactile imagination extend the viewing experience beyond the screen, prompting introspection and embodied recall. Viewers frequently described missing or reawakening their senses, indicating that cellphilms can stimulate reflexive awareness of one's own perceptual capacities.

Affective responses were equally prominent. Feelings of awe, nostalgia, and unease connected viewers to their own lived experiences: "*Ominous feeling … awe and unease*," or "*My ears hurt just from hearing the wind … the noise takes precedence over everything.*" These reactions show that viewers are not passively interpreting images but actively "feeling with" them, as sensory memory and emotion converge.

Overall, the analysis suggests that cellphilm viewing operates as an embodied, affective encounter. Through sensory stimulation and emotional resonance, viewers engaged deeply with the material, often experiencing a temporary merging of self, technology, and MTH environments. For example: "*I watched the ivy over the tree and had feelings of sadness that they've really taken over and sucked the life out of that tree*", and, "*Loved it. Always fascinated by nature. LOTS going on but we don't know WHY! Interesting to note all the different sizes of ants all co-mingled with each other. One stops and washes himself. VERY curious what they were pulling and WHY? What will they do with it?*" Through these expressions of awe, nostalgia, discomfort, and fascination, viewers revealed that their connection to the cellphilm images is not merely intellectual, but profoundly embodied and reflexive. These comments showed how the shift of perspective allowed sadness, wonderment, and amazement to be included in the understanding of how humans relate to MTH entities.

[15] Can be viewed at: https://www.youtube.com/watch?v=IUKlqmuLSyw.

More than 50% of the comments described sensory experiences evoked by the cellphilms. For example some stated: "*The smell of saltwater, feeling the coolness on my toes, the heat of the sun on my face*", "*Warmth, humid air, the smell of summertime*", "*I smell the fireworks, feel the warm evening air, startled at the sounds, feeling curious to see where they're coming from*", and "*I love the immersive feeling of being in nature, the fluffy green ferns, flowers wafting in the breeze, the quietness of nature accented by the crunch of solitary footsteps*". Analyzing the sensory dimensions of the viewers' responses, revealed viewer's deeper connections to MTH entities. The senses served as a bridge to the MTH. By engaging sight, sound, and embodied memory, viewers were able to move beyond passive observation to a state of affective kinship caring and feeling for MTHs and Nature.

Through awe, curiosity, and personal memories – like recalling the sound of crystal bowls or marveling at the lives of ants – viewers expressed not only their sensory and emotional engagement, but also a feeling of connection and kinship with Nature. The cellphilms invited viewers to reflect on their place within a shared environment, allowing emotions such as wonder, sadness, and fascination to deepen their sense of being part of a larger, interconnected community that includes both humans and MTHs. This underscores the power of cellphilms to nurture empathy and belonging with MTH entities. Thus, the overarching analysis of YouTube comments gave me an overview of the comments and allowed for further integration by indicating the emotional, sensuous, and embodied experience caused by the cellphilms.

INTEGRATED THEMATIC AND SENTIMENT ANALYSIS

I analyzed the comments made on YouTube qualitatively, integrating the two approaches (PQI and Sensory Ethnography) to bring out the main themes and sentiments that were addressed. Rather than reducing the comments to variables, I read across them for patterns of sensory description, affect, and reflection – attending to what viewers noticed, felt, and left unsaid. The key sensory and thematic lenses I used to analyze viewers' responses to the cellphilms each focus on a distinct aspect of audience engagement, including:

1. *Sensory engagement and immersion:* which investigated how vividly and affectively the viewers describe their sensory experiences. I looked for comments that detail sensual (visual, auditory, olfactory, or even imagined tactile and taste) experiences evoked by the cellphilms.
2. *Emotional connection to Nature:* which focused on the emotions that the cellphilms evoked in viewers. This ranged from awe and wonder to concern or nostalgia, providing insight into the emotional impact of the Nature-focused cellphilms.
3. *Reflections on H-MTH-N relationship:* which allowed for an examination on whether viewers expressed a sense of responsibility, concern, or connection to MTH entities and/or Nature. It helped gauge the potential of cellphilms to inspire environmental consciousness.

Yet, some responses exposed silences – discomfort, avoidance, or emotional fatigue – that signal the limits of viewers' willingness to confront ecological loss and responsibility. This approach allowed me to systematically explore how cellphilms influence viewer perceptions and engagement with MTH entities and Nature.

I familiarized myself with the data, then generated initial codes, searched for themes, reviewed and refined them, and finally I defined and named the themes (Braun & Clarke, 2006, p. 87). I based my investigation on a sentiment analysis that interprets and quantifies emotions and opinions expressed in the comments (Chaudhuri, 2019; Lei & Liu, 2021). Sentiment analysis normally employs machine learning and natural language processing to determine whether a piece of text is positive, negative, or neutral in order for researchers to understand such phenomena as customer feedback, brand reputation, and to predict market trends (Iglesias & Moreno, 2019; Liu, 2020; Zhang et al., 2018).

I relied on recent research that used thematic and sentiment analysis of short educational films in environmental studies and film studies to help me integrate my approaches. Some studies that utilized thematic and/or sentiment analysis touched on features resembling my own research-creation (Li et al., 2024; Mizan-Rahman, 2024; Zhao, 2021)[16]. Hiltunen and Rainio (2023) conducted a reception study of three environmental films, focusing on emotional reactions and the films' impact on viewers' environmental awareness. They identified key themes including emotional affectivity of the films, connections between emotional and bodily responses, film style, dystopias and utopias/ecotopias, influence on viewers' relationship to Nature, and engaging environmental awareness. Dewi et al. (2022) analyzed how short films can serve as commentary on social issues, including environmental topics. They used thematic and visual analysis to examine how short films convey messages about current societal concerns. These studies informed my process and helped me integrate the approaches into a comprehensive thematic and sentiment analysis.

THEMATIC ANALYSIS

In my thematic analysis, I identified recurring experiences, perceptions, and emotions in viewer responses to the cellphilms. Key themes included emotional connection to Nature and MTH entities, with viewers describing immersive,

[16] Aşilioğlu (2024) performed a thematic analysis of Turkish short films, revealing that social and psychological issues, including environmental topics, were prominent recurring themes. This study demonstrated the potential for short films to address environmental concerns. Furthermore, several researchers used topic modeling and sentiment analysis on animated film reviews for example using machine learning techniques, showing how these methods can be applied to understand viewer reactions (Mizan-Rahman, 2024; Stibbe, 2008). A study by Mizan-Rahman (2024) used environmental humanities discourse analysis to examine how animated films instruct viewers about key environmental messages.

reflective encounters shaped by sensory detail, memory, and affect. Many responses conveyed a deep sense of presence, highlighting sounds, textures, and atmospheres that evoked calm, nostalgia, or subtle unease.

Heightened sensory awareness was another dominant theme, as viewers reported feeling transported into the environments depicted, often imagining smells, sounds, and tactile sensations. This sensory immersion frequently supported an appreciation for the interconnectedness of life, with viewers reflecting on how natural elements – such as trees, water, and animals – sustain and relate to one another across time.

Several comments also revealed shifts in perspective toward MTH entities, moving beyond purely human-centered interpretations to recognize nonhuman agency, resilience, and value. In parallel, viewers engaged critically with human impacts on the environment, expressing concern about pollution, environmental degradation, and the long-term consequences of human activity.

A smaller but significant set of responses focused on filmmaking itself as a reflective process, drawing attention to framing, screens, and mediation. These comments suggested an awareness of the postdigital condition, where perception is shaped through layered acts of viewing and recording.

Concerns about environmental crisis were also present, often articulated through emotionally charged or critical language. Across themes, responses frequently overlapped, indicating that sensory immersion, emotional engagement, and ecological reflection are deeply interconnected. Themes were not mutually exclusive; a single comment could be coded into multiple categories.

In terms of distribution, emotional and sensory immersion appeared most frequently (approximately 41% of comments), followed by Nature appreciation and H-MTH-N relationships (around 38%). Other responses emphasized technical, narrative, or aesthetic critique rather than ecological engagement. While some viewers appeared to move beyond anthropocentric perspectives, this analysis assumes an initial anthropocentric baseline; further research could explore how viewers differ along a spectrum of MTH inclusion.

Environmental concern and critique of human impact emerged in roughly 31% of comments, with participants voicing anxiety over pollution, climate change, and the consequences of technological or urban encroachment on ecosystems. Curiosity and reflection formed another key theme, present in about 28% of responses, as viewers posed questions, speculated about unseen details in the cellphilms, or analyzed the broader meaning behind what they observed.

Community and social connection appeared in about 23% of the comments, with users referencing shared experiences, collective emotions, or the sense of unity and division within human and MTH communities. Finally, adaptation and resilience, both of Nature, MTH entities and individuals, was a recurring motif in approximately 18% of comments, highlighting how living beings and systems respond to change, adversity, and the passage of time.

Overall, these themes demonstrated that the content elicited a complex blend of emotional engagement, critical reflection, and social awareness. The high frequency of emotionally immersive and Nature-MTH-focused responses underscored the cellphilms' ability to connect viewers both personally and collectively, while the presence of environmental critique and curiosity points to a thoughtful, questioning group of participant viewers attuned to the broader implications of what they witness. This analysis highlights how the cellphilms prompted critical reflections on several human environmental impacts and elicited concerns about environmental degradation.

SENTIMENT ANALYSIS

Sentiment analysis was used to determine the emotional tone of viewer comments, offering insight into how audiences felt about MTH entities after watching the cellphilms. Automated natural language processing and classification assisted in handling the data, while manual coding was used to categorize comments as positive, negative, or neutral and to track shifts in sentiment across different cellphilms (Liu, 2020). I used valence aware dictionary and sentiment reasoner (VADER), a lexicon- and rule-based sentiment classifier developed for short social-media text and sensitive to both the polarity and the intensity of expressed sentiment (Hutto & Gilbert, 2014), to generate an initial positive/negative/neutral pass across the comment set. Comments were classified using VADER's compound score with the standard thresholds (positive $\geqslant$ 0.05, negative $\leqslant$ -0.05, neutral otherwise), computed via the standalone vaderSentiment package (v3.3.2). I then manually reviewed and, where necessary, overrode the automated classification – most commonly in cases involving sarcasm, mixed sentiment within a single comment, or culturally specific phrasing that the tool misread.

I did a second-pass label on all 258 comments and counted the disagreements: 82 of 258 (31.78%) classifications differ in polarity label from VADER's, i.e., 68.22% agreement. They were manually adjusted during this review. Beyond simple categorization, I examined the emotional undertones expressed through full sentences, short phrases, single words, onomatopoeia, similes, and metaphors, since I judged automated sentiment scoring alone insufficient to capture the affective register this study sought to describe. Beyond simple categorisation, I examined the emotional undertones expressed through full sentences, short phrases, single words, onomatopoeia, similes, and metaphors. This close engagement with the data revealed that many comments contained overlapping sentiments, reflecting the complexity of viewers' affective responses.

Positive sentiments often expressed warmth, calm, or anticipation, such as "*Warms my heart, calming, excited for spring*." Negative sentiments conveyed discomfort, distress, or moral concern. For example: "*I was appalled and grossed out … What the fuck*!" or "*I feel his anxiety and confusion. Why are these humans torturing me*." Neutral comments tended to adopt a more analytical or reflective tone, such as: "*It would be more interesting if we could see more details of the birds*," or observations comparing human-made and natural environments. These categories helped identify how viewers emotionally and cognitively engaged with the cellphilms, with

neutral responses often signaling curiosity or critical distance rather than disengagement.

The analysis showed that many comments were deeply sensory and affective. Viewers frequently described immersive experiences that connected sight, sound, and imagined touch or smell, as in: "*LOOOVED the sound of the raindrops … soothing, relaxing*," or "*Appeasement. Comfort. Well-being … dancing in the rain.*" Such responses suggest that the films prompted embodied engagement, where sensory perception and emotional resonance were intertwined.

Emotional bonds with MTH entities were also evident. Comments like "*Grace. Fragility. Magic. Need protection*" reflected care and empathy, while others expressed discomfort tied to environmental harm, such as associations with pollution or nuclear power. Some viewers explicitly recognized MTH agency and intrinsic value, noting cooperation among animals or the ecological significance of trees sustaining multiple life forms. These responses indicate a shift away from purely anthropocentric perspectives toward more relational understandings.

Many comments also addressed human impacts on the environment, often critically. Viewers reflected on pollution, habitat destruction, and extractive practices, as seen in remarks like "*It's sad a nest should be made of natural materials*" or "*It's astonishing that it's permissible to disfigure the shores.*" Others engaged broader ecopedagogical concerns, including climate crisis, pesticides, and ecological balance, suggesting that the cellphilms prompted reflection on complex environmental issues.

In terms of distribution, positive sentiments were most prevalent, comprising approximately 41% of responses and often expressing joy, fascination, or appreciation. Negative sentiments accounted for 31%, typically reflecting discomfort, ethical concern, or critique of human behavior. Neutral comments made up 28%, focusing on observation or analysis without strong emotional language. Overall, the predominance of positive sentiment suggests that the cellphilms fostered favorable emotional orientations toward MTH entities, while still encouraging critical reflection.

This 41% positive – 31% negative – 28% neutral distribution is broadly consistent with Hiltunen and Rainio's (2023) reception study of environmental short films, which similarly found that emotional affectivity outweighed analytical or critical response among viewers[17]. It also echoes Dewi et al.'s (2022) observation that short-form environmental media tends to elicit immediate affective commentary rather than sustained social critique. Read against these prior studies, my results suggest that the predominance of positive, affect-laden comments is not unique to this project's cellphilms but may be a broader feature of how audiences respond to short environmental media in general. At the same time, my sample's positivity rate sits at the higher end of what comparable studies report, which is consistent with the relational sampling bias discussed in the Limitations section; the friends and family recruited for this study likely amplified an effect that would be more muted, or more mixed, with a general audience.

At the same time, this method has clear limitations. Sentiment analysis simplifies complex emotional expression into broad categories, often missing nuance, mixed feelings, or varying intensities within a single comment. It can struggle with sarcasm, irony, and cultural context, leading to potential misinterpretation. Additionally, AI tools and platform dynamics, such as YouTube's algorithms, may introduce biases based on incomplete or unrepresentative data. As a result, while sentiment analysis provides useful patterns, it cannot fully capture the depth and subtlety of human-MTH relationships expressed in the comments.

Nevertheless, the sentiment analysis of the cellphilm comments captured how viewers emotionally connect with natural environments and MTH entities, revealing insights into their feelings of wonder, care, or concern. The analysis revealed viewers affective responses and highlighted ecological values, awareness and/or tensions.

OUTLINING ECOPEDAGOGIC SIGNIFICANCE

Analyzing the cellphilm data revealed strong engagement with ecopedagogical tenets, particularly reflexive learning and conscientization (41%), as viewers critically reflected on environmental degradation and H-MTH-N relations. Transformation themes (38%) appeared in discussions of resilience and systemic change, while ecopedagogic literacy around (un)sustainability (31%) and ecocide/climate change (31%) emerged through concerns about pollution, deforestation, and environmental crisis. Eco-justice (28%) was reflected in critiques of inequality and anthropocentrism, while global citizenship (18%) appeared more implicitly.

Using a postdigital ecopedagogical lens, the analysis showed how YouTube mediates these engagements. For example, "Gecko escaping floor varnishing" blurred domestic and ecological boundaries, creating an intimate digital encounter (20 views, 10 comments)[18]. "Resting under the fig and pomegranate trees" (34 views, 0.7011 watch hours) evoked sensory reflection and contemplative awareness, supporting forms of environmental citizenship, though deeper conscientization requires participatory and dialogic engagement beyond viewing.

A PQI approach further highlighted how meaning emerged through assemblages of human, MTH, and digital elements. "Solar eclipse NDG Montreal" (41 views) demonstrated a convergence of affect, urban space, and shared witnessing,

[17] The predominance of positive, affect-laden comments in this sample resonates qualitatively with Hiltunen and Rainio's (2023) reception study of three Finnish environmental films, in which respondents' emotional and affective reactions were "emphasized more than issues related to information and knowledge." Their study used qualitative thematic analysis of open-ended questionnaires (62 responses from 28 participants) and reports no comparable sentiment distribution, so no direct numerical benchmark is possible; the parallel is one of emphasis, not proportion. Notably, they also found hope and anxiety intertwined, with positive and negative emotions frequently mixed within single responses - a nuance my three-category coding cannot capture, as noted in the limitations below.

[18] The fifty cellphilms can be viewed at: https://www.youtube.com/@Ecopedagogy-ca/videos

while "Nest made partially of plastic …" (10.22% CTR) exposed entanglements of wildlife and human impact. "Sound from playing crystal bowls" (180 seconds, 8.2% CTR) emphasized sensory immersion, particularly sound, as a pathway to ecological connection.

SUMMARY OF THE ANALYSIS

The findings revealed strong concern for H-MTH-N relationships, often marked by feelings of ecological anxiety, memory, and affective response. Comments showed how cellphilms can prompt reflection on human-made environments and their impacts on MTH entities, including critiques of technology and dominant cultural perspectives, as well as occasional Global South insights that challenged Western assumptions. Viewers' responses were both self-reflexive and postdigital, blending appreciation, confusion, and critique. Many formed personal, affective connections with MTH entities, linking digital viewing to lived experiences, memories, and spatial awareness. Sensory and emotional engagement was evident across multiple cellphilms, with reactions ranging from awe and empathy to discomfort and alienation, particularly in relation to environmental harm.

Overall, the comments demonstrated that cellphilms elicit embodied, affective, and critical engagement beyond passive viewing. By activating sensory awareness and ecological reflection, autoethnographic cellphilming fostered connections with MTH entities while also encouraging awareness of environmental challenges. Integrating PQI, sensory ethnography, and postdigital perspectives highlights how these responses emerge through the interplay of digital mediation, embodied experience, and ecological perception.

Overall, the cellphilms' multisensory, relational depictions of human and MTH entanglements fostered emotional engagement, critical awareness, and a sense of belonging, aligning with ecopedagogy's aims of care, reciprocity, and planetary responsibility. Taken together, these patterns point to a concrete educational application: short, sensory-rich cellphilms paired with structured viewer response – whether through YouTube comments or an equivalent classroom discussion format – offer educators a low-barrier way to introduce affective and relational environmental learning alongside more conventional, fact-based curricula. Because the cellphilms require only a smartphone to produce and a shared platform to circulate, the same maker-viewer structure tested here could be adapted for secondary or post-secondary environmental education courses, positioning cellphilming not only as a research method but as a replicable pedagogical tool for cultivating ecological empathy and MTH awareness in learners who may never have direct embodied contact with the environments depicted.

COMPARING CELLPHILM PRAXIS AND VIEWING

My previous research explores how non-representational cellphilming can cultivate kinship, belonging, and ethical responsiveness with MTH entities through embodied, sensory, and affective practice (Chbib, 2026). Drawing on autoethnography, posthuman theory, ecopedagogy, and decolonial and Indigenous knowledge systems, the inquiry positions the researcher not as detached observer but as a relational participant within human and MTH entanglements. It treats cellphilming as a praxis of attention in which the smartphone mediates direct encounters with texture, sound, movement, weather, and other everyday ecological presences. Single-shot, often unedited cellphilms were used to remain open to the unpredictable agency of MTH entities, technology, and environment, allowing wonder, discomfort, care, and responsibility to emerge through sensation rather than explanation. In this way, the research challenges anthropocentric and representational approaches to environmental education, instead of foregrounding embodied relation, sensory knowing, and ecological interdependence

Through an iterative and deeply reflexive process, the inquiry moved from initial anthropocentric observation toward more embodied, relational practices that emphasized sensory awareness, MTH agency, and ethical engagement. This shift not only reshaped my understanding of Nature and belonging but also contributed to a practice-based, critically engaged model for advancing ecopedagogical theory and environmental education.

Comparatively, the basic finding of this inquiry's comment analysis is that viewing the cellphilms on YouTube created a different kind of belonging than cellphilming praxis. In the making process, belonging emerged through direct, sensory, and affective intra-action with MTH entities, while the YouTube viewing shifted belonging into a more mediated, reflective, and public form shaped by platform use and viewer comments.

In simpler terms, the first event (cellphilming praxis) was embodied and relational: I felt kinship through touch, sound, movement, and response as I cellphilmed. The second event (cellphilm viewing) was interpretive and social: viewers encountered the cellphilms through digital circulation, and their comments showed how the films invited reflection, but not always the same depth of bodily connection or co-presence.

The core consequence is that cellphilming itself produced affective kinship through lived encounter, whereas YouTube produced a different reception – one that was still meaningful, but more distanced, mediated, and conversational. This difference matters because it shows that ecopedagogic meaning changes when experience moves from embodied making to online viewing.

In my email invitation to partake in my research-creation, I asked the participating viewers to concentrate on their emotions, senses and feelings. This skewed the comments in favour of my research aims. I nevertheless found that viewers engaged with my ecopedagogical content, moving beyond traditional content and discourse analysis to explore the affective, embodied, and sensory dimensions of their responses. Kinship and belonging were shown to be enhanced in the data analysis. The online platform enabled participatory engagement, blurring boundaries between digital and physical experience. Viewers often connected what they saw on screen with real-world sensations, suggesting partial resonance with

the embodied belonging that I experienced in situ. However, while my cellphilming relied on direct, relational co-presence and responsiveness to environmental cues, online engagement remained interpretive and mediated through memory, imagination, and language.

Analyzing YouTube comments revealed limitations for fostering embodied ecological awareness. Unlike *in situ* practice – where belonging emerged through sensory attunement, reciprocity, and co-creation with MTH entities – the platform's design compresses multisensory encounters into brief, affective reactions. Although comments sometimes expressed sensory imagination, these remained projections rather than lived entanglements, lacking the ethical and relational negotiations central to my praxis.

Methodologically, combining post-qualitative inquiry and sensory ethnography showed that while viewers expressed awe and occasional embodied responses, their engagement differed from the intra-active belonging of cellphilming. Online belonging was shaped by discourse, platform norms, and human-centered sentiment. Ultimately, belonging is not lost in digital translation but transformed from an embodied, co-constitutive experience into a mediated, interpretive form of ecological connection that, while valuable, remains relationally attenuated.

Limitations

Relying solely on YouTube limited audience diversity and forms of engagement reduced the range and depth of responses to the cellphilms. Although participation was open, recruiting friends, colleagues, and family introduced ethical concerns, as existing relationships may have created implicit pressure and influenced consent. Even though the identity of the participants was anonymized, the invitation to participate also blurred informal participation with formal data collection, lacking clarity around privacy, data use, and withdrawal. This relational sampling almost certainly also shaped the *content* of the findings, not just their ethics: the high proportion of positive sentiment (41%) and the recurring themes of wonder and empathy reported in the Sentiment Analysis and Outlining Ecopedagogic Significance sections should be read as likely inflated by respondents' courtesy toward, and prior familiarity with, the researcher, rather than as a neutral measure of how the cellphilms would land with an unfamiliar audience. A stranger-recruited sample would be needed to disentangle the affective power of the cellphilms themselves from the social obligation of commenting on a friend's or family member's creative work.

In addition, there were 258 comments posted made by nineteen individual viewers – meaning that of the 41 people who initially agreed to participate, fewer than half actually left a comment during the five-week window. This attrition is itself informative: it suggests that agreeing to watch is a lower-commitment act than agreeing to comment, and that the 19 who did comment may represent a further self-selected subgroup – those most comfortable sharing personal or emotional reflections with the researcher, or most personally invested in supporting the project. I did not follow up with non-commenting participants to ask why they did not post, which limits my ability to distinguish disengagement from simple reluctance to write publicly.

A related concern is that the 258 analyzed comments were not evenly distributed across the 19 commenters; on average each viewer left roughly fourteen comments, and I did not calculate, or report how concentrated this distribution was. It is therefore possible that the thematic and sentiment percentages reported above (e.g., the 41% figure for emotional/sensory immersion) are disproportionately shaped by a small number of unusually prolific commenters rather than representing the range of the full group. Future iterations of this analysis should report comments-per-participant alongside theme frequencies to make this risk visible rather than implicit.[19]

Prompting viewers to focus on affect and sensory responses may have further shaped feedback, constraining authenticity. In addition, YouTube's platform raised privacy issues, as comments are embedded within commercial data systems with uncertain visibility and retention. The cellphilms themselves also posed representational ethical questions regarding MTH entities filmed without consent.

These limitations show how researcher proximity, platform constraints, and methodological framing can affect the ethical integrity of audience research. Despite this, the project demonstrates the potential of cellphilms to evoke ecological empathy, while highlighting the need for complementary embodied and participatory approaches beyond digital platforms.

These limitations collectively highlight the complex navigation required when I tried to bridge digital ecopedagogies with ecological consciousness, belonging, and ecoliteracy. They underscore the necessity of situating techno-mediated environmental education within critical examinations of technology's material impacts, while acknowledging the persistent pull of anthropocentric frameworks in even the most conscientized research paradigms. Ultimately, I suggest that effective ecopedagogies may lie not in resolving these contradictions, but in consciously working through them as sites of generative tension, agency, and exploration. Translating my praxis into all levels of standardized education curricula for both adult and young participants would require further study.

CONCLUSION

This research demonstrates several concrete insights about ecopedagogic cellphilming potential. While the year-long autoethnographic practice for my dissertation produced deep, sensory-rich encounters that shifted perception from human-

[19] Comments posted in French and Portuguese were translated into English using online translation tools (perplexity.ai and DeepL.com) prior to analysis. While useful for inclusion, machine translation can flatten or shift affective and idiomatic nuance – sarcasm, regional expressions, and emotionally loaded phrasing are especially prone to distortion in automated translation. Because this study's entire analytic lens depends on close reading of affective and sensory language, this is a non-trivial limitation: some portion of the sentiment and thematic coding for non-English comments may reflect translation artifacts rather than the commenter's original expression.

centered observation to MTH kinship. The participant YouTube viewing experience translated this into an indirect, imaginative, and interpretive connection generating a different, mediated form of affective belonging. Viewers did not co-create with ants, wind, or textures, but instead engaged through memory, projection, and affective resonance (i.e., feeling calm, discomfort, nostalgia, or care). This form of belonging was less embodied and reciprocal, yet still meaningful, emerging through sensory imagination rather than direct intra-action.

The YouTube responses suggested that cellphilms can evoke empathetic engagement and a sense of connection, even within digital environments. Humans who cultivate empathy enhance both personal, familial, communal, social, and professional relationships by facilitating better collaboration, problem-solving, and emotional support.[20]

The data also reveals that digital circulation transforms not only meaning but the quality of belonging itself. As the cellphilms moved from embodied practice to online viewing, comments demonstrated empathy, ecological concern, and sensory engagement, but often recentred human perception and emotion. Viewers expressed connection such as finding peace in landscapes or unease in environmental damage, yet this connection remained mediated by platform structures, language, and personal interpretation. Unlike the in-situ practice, where MTH agency co-shaped the encounter, YouTube engagement flattened these relations into text-based responses, producing a more distanced, discursive form of ecological belonging.

Viewing the cellphilms after the performative act of cellphilming models a complementary but limited ecopedagogical pathway. While the accessibility of smartphones and short-form films allows viewers to engage emotionally and reflectively, the absence of embodied practice constrained the depth of relational understanding. Viewers demonstrated empathy, awareness, and even critical perspectives on issues like pollution or climate change, but often did so without fully engaging the multisensory, ethical, and reciprocal dimensions that characterized the filming process. The process of recording, editing, and sharing introduced layers of mediation that distanced viewers from the original experience, transforming it into a curated digital representation. As a result, YouTube interactions tended to center human emotions and interpretations, often overlooking the ecological complexity and MTH agency present in the cellphilms. Viewing alone fostered awareness and affect, but not the same level of kinship grounded in co-presence and sensory attunement. The platform's text-based and metric-driven structure further reduced rich, multisensory relationships to simplified sentiments, reinforcing anthropocentric perspectives.

While digital sharing increased accessibility and prompted reflection, it also risked flattening ecopedagogical depth and limiting critical engagement with issues such as eco-justice and power dynamics. Viewer comments that ranged from awe and empathy to critique and eco-anxiety, demonstrated that watching can still provoke meaningful ecological reflection, but this reflection operates at a cognitive level rather than through lived-affective, material engagement. This gap suggests that viewing can initiate belonging, but cellphilming praxis sustains and deepens it.

Most importantly, affect remains central, even when transformed by mediation. Viewing the cellphilms activated emotional and sensory responses (i.e., wonder, discomfort, and care) that allowed viewers to "feel with" ecological situations, even at a distance. However, this affective belonging was shaped by the constraints of YouTube's platform, which prioritized human expression and simplified complex MTH relations. As such, environmental learning through viewing occurs through watching-with and talking-with but lacks the full depth of feeling-with that emerges through embodied practice. Together, these findings show that while digital viewing can extend ecopedagogical impact, it produces a different, more attenuated form of belonging that benefits from being paired with *in-situ*, participatory engagement. Ultimately, the study's situatedness strengthens rather than undermines these findings: they suggest that ecopedagogy can take hold through open-ended, reflexive encounters as much as through tightly controlled methodologies. Read this way, the study's limitations become part of the evidence indicating that transformative learning emerges precisely where human control, digital platforms, and MTH agency collide.

Future research should address key limitations while building on the demonstrated potential of ecopedagogic cellphilming. Despite ethical challenges in participant recruitment and platform privacy, studies can test the method's transferability by implementing it with independent groups of young learners in classroom settings, measuring shifts in ecological literacy, empathy, and MTH kinship through pre/post sensory engagement scales and behavioral observation.

Longitudinal research could track how embodied cellphilming (*in situ*) differs from mediated reception (YouTube-style viewing) over time, using controlled comparisons to quantify the making/reception gap while refining consent protocols for friends/colleagues. Comparative studies across demographics, regions, and age groups would reveal how affect translates across gender, race, class, and cultural contexts, addressing current study's relational bias.

Finally, despite digital tool contradictions (mineral extraction, platform mediation), research should integrate cellphilming with emerging AR/AI for augmented autoethnography – visualizing hidden MTH networks – while partnering with ethical tech initiatives. These directions leverage the research's core insight: sensory media reliably fosters belonging, even if imperfectly, offering a scalable model for justice-oriented environmental education.

[20] In recent research, YouTube comments appeared to lack empathy. YouTube comments can be seen as snapshots of people's immediate reactions, often lacking the nuance and empathy present in face – to – face conversations. The lack of empathy in comments may be partly due to YouTube's algorithm, which promotes engagement through controversial or emotionally charged content. This can lead to more negative interactions and less empathetic discourse (Guan et al., 2019; Habibi, 2025; S. Yang et al., 2022). This emphasizes the need for users to practice more empathetic communication online by fostering more constructive interactions.

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