



What matter(s) in education beyond the human?

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Abstract

The current sustainability crisis is born from a specious notion that humans are separate from and in a position of control over nature. In response, this study challenges us to move past such an anthropocentric model of education to allow for (re)making Earth's narrative and raises the question, how can education be re-conceptualized to embrace learning as becoming-with (Haraway, 2015, 2016a)? The project focuses specifically on understanding how voices that are often silenced, such as those of children and the more-than-human world, are, in fact, ghostwriters of Earth's narrative.

The purpose of this study is to break the mold of the status-quo: the binary distinctions (human/nature, teacher/student, formal/non-formal education) that place one as superior to the other. By flattening out these hierarchies and centering agential, more-than-human assemblages, the study aims to reimagine education beyond the human as a multidirectional process of learning as worlding and becoming-with the Earth (Haraway, 2016a).

Research Questions

The following questions guide this inquiry:

- (1) How can research(ers) transcend the human condition to see beyond anthropocentric models of education?
- (2) What matter(s) in education beyond the human?

Conceptual Framework

This work takes an innovative approach to frame education as learning through becoming-with (Haraway, 2016a), which I refer to as storyworlding. Storyworlding includes this sympoietic making of Earth's narrative by including its multi-species/mattered narrators. It demonstrates how education beyond the human is, in fact, learning through sympoiesis as co-authors of our Earthly narrative.

The conceptual framework of this study approaches the human/nature divide by employing Haraway's (2003) concept of natureculture. The impossibility to disconnect nature from culture is apparent. Additionally, storyworlding as I introduce here, combines the concepts of becoming-with (Haraway, 2016a), inter/intra-action (Barad, 2008; Haraway, 2015) and common worlding (Haraway, 2008; Nxumalo, 2016; Taylor, 2017; Taylor & Pacini-Ketchabaw, 2015). Storyworlding eliminates the bifurcation between formal and non-formal education by framing all learning as becoming-with (Haraway, 2016a). It replaces the dualistic model of teacher-student, including the idea of nature-as-teacher, by framing education

outside of these dualisms. Storyworlding occurs when multispecies, multi mattered assemblages (re)write Earth's narrative through their inter/intra-actions and becoming-with one another.

Methodological Framework

The methodological approach employed in this study is a natureculture ethnography. This innovation on a traditionally human-centered data collection and analysis technique centers the more-than-human world through a focus on agential, multispecies/mattered assemblages. A naturalcultural ethnographic approach to research and analysis incorporates the traditionally silenced voices of the more-than-human world and children as it moves from a focus on children and their entanglements to entering and becoming within more-than-human assemblages which include children.

Research Context and Participants

The study site for this research is a small, coffee producing region of rural, Southeastern Brazil. More broadly speaking, this research takes place in the fluid boundary between the Anthropocene and the Chthulucene. For Haraway (2016b), the Chthulucene is a parallel pathway that offers a space for imagining alternative futures and possibilities. Within the Anthropocene, it is difficult to see beyond the human as protagonist - the name alone centers humans as a geological force (Crutzen & Stoermer, 2000). The Chthulucene, in contrast, is a place to see how "human beings are with and of the earth, and the biotic and abiotic powers of this earth are the main story" (Haraway, 2016b, p. 55). This study includes human (n=27) and more-than-human participants as they storyworld with children, plants, teens, winds, adults, birds etc. who share in their becoming in the Chthulucene.

Data Generation and Analysis

Data is not generated and then labeled as fixed in this study. It is emergent in its assemblages. Data is a co-narrator in sympoietic storyworlding. The following data generation methods were employed in this study.

Walking conversations. In order to focus on children's entanglements with the more-than-human world, this study used 'walking interviews' as a way to learn more about children's ecological learning and relations between children and other species (Somerville, 2007; Somerville & Green, 2011; Somerville & Powell, 2019; Taylor & Pacini-Ketchabaw, 2017).

School participation. This study took place, in part, in a multi-grade, one-room schoolhouse that serves pre-school and elementary school children from ages 3- to 9-years old. The school is entangled with coffee production. As storyworlders, we shared our daily lives in school with one another: the students, teachers, dogs, coffee, smoke, books, colored pencils, school chef, wooden blocks, researcher etc. in a 'formal' school setting.

Art and 'things' of importance. Children chose to share their artwork (drawings, writings etc.) along with things of importance in their lives (i.e. a batman mask, their pencil sharpeners etc.) These types of visual methods such as those incorporating multimodal art (Odegard, 2019) and drawings (Leitch, 2008; Sachdev, 2017; Somerville, 2013) are valuable tools for our shared storyworlding that diversify the means of expression.

Audio/visual recordings. The children had access to a shared digital camera and audio recorder to include the sounds and images with whom/which we were entangled. Children recorded themselves telling stories and took photographs of their worlds. In total, more than 1,000 photographs and video clips were generated.

Reflections, musings, and fieldnotes. Handwritten and typed fieldnotes are included in both data generation and analysis for this project. The notes may have their own voice as they continue to speak beyond the time that they are 'recorded.'

Diffraction analysis as data generation. Barad's (2007) concept of diffraction as a methodological tool for analysis offered a way to stay with and listen to the data (Hackett & Somerville, 2017). Data analysis for this study focuses on the assemblages, rather than the human actors alone, to highlight the ways that research can go beyond the human without erasing the human.

Findings and Contributions

The innovative methodological and conceptual approaches utilized in this study revealed layers of entanglements that make Earth's narrative. This study highlights children's entanglements with fire and smoke, animals such as dogs, cats, and chickens, water and pollution, death and dying etc. Through these examples, our human-centeredness is inherently broken down and natureculture is revealed as becoming-with Earth.

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<https://doi-org.ezproxy1.lib.asu.edu/10.1080/14733285.2016.1199849>