

Looking Upstream: Discourse Analysis and Water Justice in Literacy Education

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Abstract

“Looking upstream” refers to going beyond the negative effects of the current problems which disproportionately impacts historically marginalized families—water contamination, flooding, and scarcity—to see causation: why is the problem happening in the first place? In this article, we “look upstream” at our language and literacy practices and attempt to see how these are entangled with representations of our place in the water cycle. We examine a few curricular artifacts from our Literacy Clinic—dually focused on responsive literacy instruction and water justice—to illustrate our entanglements with linguistic systems, discourses, and narratives. Part of the way forward, we argue, is changing the ways we speak, write, and read in relation to our shared environment, including water and all forms of life.

Keywords

water justice, teacher education, positive discourse analysis, Literacy Clinics

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The effects of global climate change in Missouri include dangerous heat and extreme precipitation. Situated in the largest river drainage basin in the United States, we are experiencing increasingly extreme flooding in the spring, warmer winters, more drought in the summer, and more violent storms (Hensen & Masters, 2022). As literacy educators serving in metropolitan St. Louis, we also see inequitable access to high quality literacy instruction. In 2023, fewer than half of all Missouri 4th graders scored proficient or advanced in English Language Arts. Among 7th graders, just 37% scored proficient or advanced. We are in a place and a time to bring our strivings toward water justice and literacy justice into an integrated field of practice.

Folding the granular work of explicit and responsive literacy instruction into water justice practice is not easy, but it can be done. For example, a teacher in our Literacy Clinic describes how the poetic rhythm of Jorge Tetl Argueta's *Agua, Aguita: Water, Little Water* brings students into the text to explore issues of water justice: "[My] students ...looked at [the book] again and used the author's poetry style to write their own poems about water issues that resonated with their own lives while focusing on specific writing objectives such as writing in full complete sentences."

To understand the complexities of water justice here in St. Louis, we must highlight the context of everyday life. Ongoing inequities across Black and white school districts, including disparities in school funding, map onto multiple water-related hardships: contamination at superfund sites, health disparities consequent to extreme heat and lack of hydration, and outdated infrastructure (Interdisciplinary Law Clinic, 2019; NRDC, 2024). The Ferguson Commission's report "Still Separate, Still Unequal" (2020) proposes that we *look upstream* from our intertwined problems, a metaphor that encourages us to seek and see causation: why is this happening, what adjustments would help us change the course? In this article, we shift our gaze upstream to see how our Clinic practices are enmeshed with representations of our

place in the water cycle. Part of our collective way forward, we argue, includes changing the ways we speak, write, read and teach about our shared environment.

Critical Ecoliteracies in a Literacy Clinic Setting

Our Literacy Clinics are free, supervised learning environments nested within a land grant university. Here, teachers teach evidence-based literacy 1:1 or in small groups. We have recently redesigned a Clinic to focus on literacy instruction in the context of the environment and, in particular, water justice. After administering literacy assessments, teachers develop text sets, beginning with student curiosity: *What meaning does water have in our lives?* With respect to textual heterogeneity, teachers are coached to attend to syntactic complexity, genre, voice, morphology, grammatical construction, semantics, perspective, and authorship. Teachers notice and name intra-textual layers of meaning making and intertextual connections with respect to subject matter. When read together as a set, these collections offer opportunities to look for the root causes of water-related inequities *and also* to appreciate joyful, responsible, relationships with water. Drawing on backwards design principles, teachers prepare culturally responsive and explicit lessons in phonics, fluency, comprehension, and writing. By the light of their own textual understandings and inquiry, teachers can guide students in strategic decoding and comprehension. With the understanding that critical language awareness helps nourish climate literacies, teachers explore the scholarship of advanced literacy instruction, climate literacy, and children's literature. Together, we read Richard Beach, Barbara Comber, Rebecca Woodard, Grace Lee Boggs, Autumn Peltier, Carole Lindstrom, Janice Harrington, and Jorge Tetl Argueta, to name just a few of our inspirations. The clinic culminates in a presentation.

Ecolinguistics is the study of the ways language use can exploit or protect a sound and sustainable existence (Chawla, 1991; Halliday, 1990). Stibbe (2014) writes, "ecolinguistics... is about critiquing forms of language that contribute to ecological destruction, and aiding in the search for new forms of language that inspire people to protect the natural world" (p. 1). Halliday (1990) illuminates the assumptions built into language, noting that "[l]anguage makes it hard for us to take seriously the notion of inanimate nature as an active participant in events" (p. 29). With these ideas in mind, we position humans as a species inhabiting a living planet where all living and nonliving

beings are interdependent and all life is dependent on water, which neither increases nor decreases in total amount, but rather flows and is transformed from place to place and from state to state (gas, liquid, solid) in an ongoing cycle. The total water content of our planet dates from four billion years ago. 96.5% of the water on this planet is in the oceans. The rest is stored in polar ice caps, glaciers, snow, groundwater, lakes, rivers, streams, soil, atmospheric water vapor, plants, and all of us animals. The water we rely upon in St. Louis comes from the Missouri River, the longest river in the United States. Near the confluence of the Missouri and Mississippi Rivers, the City of St. Louis Water Division operates two water treatment plants. In 2023, these two facilities filtered and processed an average of 124 million gallons of Missouri River water per day (St. Louis City Water Division 2023). Our very existence here depends on a colossal and ongoing system of re-routing, collecting, and filtering water that was always and already passing by our city in the form of a giant river making its way across the continent from Montana to the Gulf of Mexico.

An Example of Text Analysis from the Textual Ecosystem of our Clinic

Historically, critical discourse studies have focused on negative critique of texts in an effort to expose injustices. This is important in literacy teacher education but not enough; we also need to examine and affirm texts that arc toward justice. In recent years, scholars practicing Positive Discourse Analysis have taken up multimodal content in search of the discursive construction of positive social change: expressions of liberation, solution-making, and organizing (e.g. Rogers, 2018; Calle-Díaz, L. & Rogers, 2023; Bartlett, 2012; Macgilchrist, 2007). To clarify the distinction between deconstructive and reconstructive approaches, we will turn to an example from a text we use in our Clinic from the 2014 *National Geographic Kids* book titled *Water*:

Water Warning

We drink water. We use it to cook, clean, and carry waste out of our homes. Farmers use it to grow crops, and companies use it to make products. Since the 1950's the amount of water people use has tripled. But the supply hasn't. In some places, water is being used faster than it can be replaced.

Scientists worry that soon there won't be enough water for us and the creatures who share our world.

What can you do to help?

Use water wisely (p. 41).

A deconstructive analysis of this text might emphasize how it describes consumerism's drive for an extractive relationship with water—e.g. “the amount we've used has tripled since the 1950s.” The text leaves unsaid what has tripled the demand, whether it is population growth or that people are using more water. Obscuring the reality of population growth makes it seem like the onus of responsibility for using too much lies with the individual. Logically, that means the solution does too: the reader must use water wisely. In addition, the grammar of the text (the passive construction “water is being used”) hides social actors, including anyone who profits from access to a disproportionate amount of water. There is a factual inaccuracy in the assertion that water can be replaced; water cannot be replaced. As a concept, water in this text is acted upon; it is not characterized by its own activity (e.g. flowing, gurgling, streaming). Erased is our embodied relationship with the water cycle, that each of our bodies is, on average, 60% water.

A positive discourse analysis (PDA) picks up where critical discourse analysis leaves off, searching for alternative discourses and possibilities. A PDA of this text might emphasize how the language calls attention to shared use of water by repeating the collective pronoun “we.” Warnings are for everyone. The text surfaces emotionality (e.g. scientists worry), inviting the reader to worry, too. The text implicitly stretches the reader to think beyond their individual desires (e.g. consumption) and consider relationships with “creatures who share our world.” Finally, the text invites the active participation of the reader, “What can you do to help?”

Practicing both CDA and PDA can help us see dynamic tensions connecting two bodies of practice that are often thought of separately: responsive literacy instruction and environmental inquiry (Figure 1 provides guiding questions for text analysis). For example, science teachers may teach a “water cycle unit” without addressing how to decode multisyllabic words such as *contamination*. They may not be prepared to teach the morphology of words, nor to conceptualize the water cycle in an equity frame. In a

similarly siloed process, literacy teachers may plan learning outcomes associated with reading fluency and comprehension using a text that addresses water justice (e.g. *We are Water Protectors*), without pausing to inquire, follow students' questions, and teach social scientific concepts.

Figure 1: Critical Questions Educators Can Ask Texts about Water Justice

- What are the dominant and resistant messages, ideas, narratives, and perspectives related to our relationship to water, water hardship and stewardship in this text? Is conflict or collaboration emphasized?
- How are the nonhuman beings and features of Earth represented in this text? Are they positioned as resources to be "used," i.e. passive objects of human doings (rather than subjects actively living and being)?
- Are the verb tenses in the active or passive voice? Is human agency with respect to acting in/upon water and the environment masked or explicit?
- Does the text implicitly or explicitly put the onus of water stewardship on individuals or on power structures, interlocking systems, and legacies of colonial exploitation?
- Does the text posit or present factual understandings that are grounded in the scientific method of inquiry (for example: we've had a finite quantity of water on Earth for nearly 4 billion years).

Conclusion

Discourse analysis can help us look upstream of present-day urgencies to embed literacy pedagogy in understandings about water justice. What gives us hope is creating opportunities for all teachers to initiate their own climate literacy journeys upstream. In doing so, teachers see, feel, and hear the ways in which literacies are central to cultivating responsive pedagogies. So, too, is continually striving to center students' deep, extended engagement with connected text even as they are learning and practicing phonics patterns, fluency, word recognition strategies and comprehension. In our literacy teacher education, we can model deconstructive and reconstructive reading of texts; bringing a water *justice* lens where none exists and appreciating attempts to center our relationship to water where it does exist in the texts we read, write, and design.

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