



Introducing the 3T-Approach

Using Literary Fiction to Enhance Climate Change Literacy

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Abstract

This essay summarizes key findings from an interdisciplinary project on the role of literary fiction in fostering climate literacy. It discusses prevalent conceptions of the cognitive and emotional impact of reading and suggests the beneficial potential of fiction through the lens of discourse awareness, critical empathy, and systems thinking. Moving from theoretical insight to practical implementation, we describe discourse awareness, critical empathy, and systems thinking in our own “3T-Approach to Climate Change Literacy”: an approach in which teachers draw on a combination of texts, textures, and tasks when planning and conducting pedagogical interventions for climate literacy.

Keywords

climate change literacy, environmental humanities, literature pedagogy, fallacies, 3T-approach

As researchers and educators in the literary humanities and in literature pedagogy, we welcome the understanding of climate literacy as primarily a “narrative capacity” that complements, enriches, and even supplants the still dominant notion that literacy in the context of ecological and climate emergencies is synonymous with climate *science* literacy (Oziewicz, 2023, p. 35). Despite the growing recognition that “[l]iterature, film, games, and art forms for young people are not additional but the most important avenues for raising climate awareness and mobilizing action” (Oziewicz et al., 2023, p. 2), we, like many others concerned with literacy development and research in the environmental humanities, are eager to explore the unique ways of these avenues. In this essay, we summarize main findings of a recent research project. In the hope of inspiring teachers from primary to tertiary educational contexts, we share a proposal for a pedagogical model we call the “3T-Approach to Climate Change Literacy” (for details, see [Hoydis et al., 2023](#)).

More than Facts and Feelings

While we welcome the ever-growing number of publications and educational resources insightfully crafting arguments for literary and cultural climate education (e.g., Dolan, 2022; Beach et al., 2017; Siperstein et al., 2017), the ongoing debate might benefit from a more general case for the centrality of humanities perspectives on climate literacy. In particular, we encourage scholars and practitioners to use the humanities’ analytical and critical toolkit to re-assess to practice of climate education in light of its proposed objectives. Specifically, to what end do we teach climate change narratives in literature classrooms?

With this larger question in mind, we set out to investigate what popular climate change fiction does—how it is narrated; what it allows readers to see, understand, and feel; and which patterns and plots are especially popular—and what can be done with this knowledge in education. We felt that this research requires insights from literary studies as well as from literacy pedagogies. As such, we reviewed education research and curricular policy, as well as a corpus of the most popular cli-fi texts to date compiled and analyzed by Schneider-Mayerson (2018). The corpus allowed us to learn more about actual readers’ choices of literary texts and indicated what literary analyses can tell us about the potential of using these narratives for classroom practices. This

research was integral to our probing into what might be the most pressing question in climate literacy education: How does reading lead to action?

After an in-depth review of psychological research on the ‘mind-behavior gap’ (e.g., Kollmus et al., 2002), we found that a significant number of practice-oriented scholarship—publications that attempt to chart direct routes from reading fiction to making a difference in the world—seems to operate on a particular assumption. That reading literature can change attitudes and behavior is well documented. However, this does not mean that educators can and should aim (only) at such attitudinal and behavioral change when teaching fiction. In our survey of relevant studies and policy, we came across this unacknowledged yet empirically unsupported assumption so frequently we decided to describe them as “cognitive” and “sentimental” fallacies (see Hoydis et al., 2023, 15-19). These fallacies imply that readers eventually change their ways because of the information they retrieve from a work of fiction, or that they do so because of the emotional appeal, or even manipulation, inherent in literary writing. Facts and feelings, however, are not enough when it comes to lasting behavioral change. Behavioral change might not be the primary objective of literary learning, after all.

There are three areas in which literary fiction excels and thus exerts its greatest influence. These areas are well known to educators in language arts classrooms and an in-depth narratological analysis of Schneider-Mayerson’s (2018) corpus supports our hypothesis that popular cli-fi caters to them in unique ways. The areas are discourse awareness, critical empathy, and systems thinking (see figure 1). In combination, they can contribute to shifting readerly perception, which is the relevant factor for attitudinal and behavioral change.

Cli-fi supports the acquisition of knowledge about the linguistic framing of natural and scientific issues, the role of genre and style, questions of literary form and rhetorical appeal, and suchlike. It is equally true that literary fiction has emotional effects, but these effects should not be conceived of as an emotional primer for sympathy and for taking fictional characters as role models. Rather, by allowing insights into the complexity of human minds and motives, fiction engages an understanding of human interiority that goes beyond the simplistic dualism of environmental heroes and villains—and are we not all more complicated than that dualism suggests? Last, every

narrative we studied connects climate change and other environmental topics to numerous social and cultural issues—growing up, gender roles, power and powerlessness, and so forth—in a way that no scientific account or science literacy is able to do. Cli-fi, in other words, provides crucial insights into the heavily cultured, emotionally charged, and intricately interconnected nature of social and environmental harms. We could describe this capacity of fiction as the rendition of “climate change plus x.”

This “more factor” is at the heart of the unique significance of literary and cultural learning in climate education. It also underlines the importance of the already existing expertise of teachers in the language arts classrooms who know how to deal with the discursive framing of cultural issues, the emotional contagion of literary fiction, and the complexity of individuals and societies in their daily practice. To illustrate the link of this professional concern with concerns of climate literacy, consider one example from our corpus. Saci Lloyd’s hugely popular young adult novel *The Carbon Diaries 2015* (Lloyd, 2008) obviously engages with climate change; its key value, however, is the way it connects climate and education, in multimodal ways of varying rhetorical registers, with the pains of growing up, the rejections of first love, the embarrassment of having parents, and the glory of being in a rock band. Climate science education has little to offer when it comes to factoring these concerns into climate change models and impacts—but who would disagree that these aspects are paramount for children and adolescents?

The 3T-Approach to Climate Change Literacy

What can be said about *The Carbon Diaries* also applies to all kinds of “[l]iterature, film, games, and art forms” (Oziewicz et al., 2023, p. 2). This is the first, and foundational, insight into what we came to call the 3T-Approach to Climate Change Literacy (see figure 1).

The first T stands for *texts*. Because every text is different—and therefore affords different ways of understanding climate change in its socioecological complexity—it has different appeal for proficient and emerging readers. This means that teachers need to consider each text in light of its specific aesthetic, epistemic, emotional, and

multimodal affordances for individual learners. It is thus crucial that we stop thinking about *the* literary text for a classroom: every text is different and so is every reader.

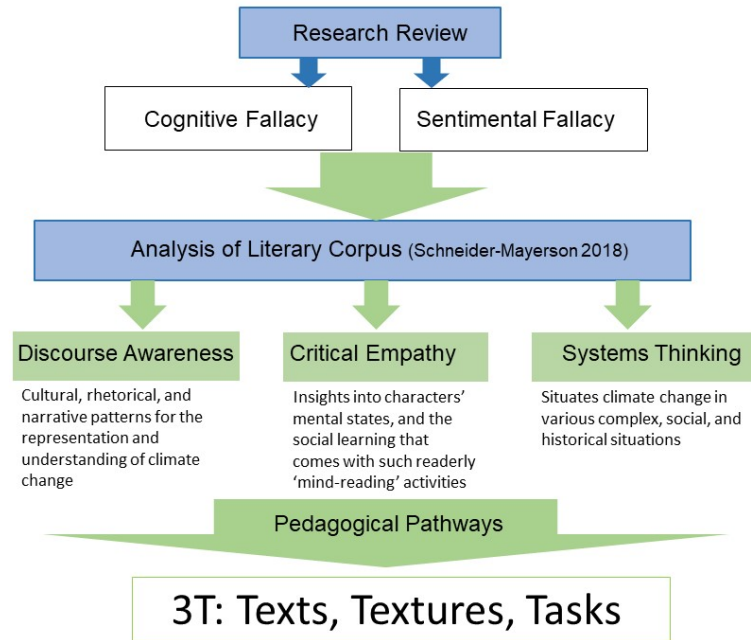


Figure 1: The 3T-Approach: Fallacies and Pedagogical Pathways.

The second T is *textures*. Teachers' knowledge of what an individual text offers allows to create more dynamic and exciting ensembles of texts (that we call "textures") to cater to diverse groups of learners. This strategy allows teachers to make sure the immensely complex topic of climate change is represented in appropriate ways. If we combine song lyrics, films, and games with picture books, graphic novels and short stories, we are not only able to support individual learner needs better. We create a richer tapestry of literary and cultural forms of making sense of the climate emergency—and thus support children and young adults in finding their way through this maze of meanings.

This begs the question: whether teachers are actually able to read and watch and listen so much, and on so different levels and with so many different avenues for learning. For us, the answer to this question is the collective group of learners, not the single child. So here comes our last T: for *task design*. It is up to teachers—and well within the purview of their professional expertise—to come up with a learning scenario

or task in which these different texts are on offer and brought together in meaningful communicative learning. It is, of course, no small matter to design such tasks. This is where resources for such planning and design in educational literature—handbooks, introductions and companions (e.g., Ellis, 2003; Willis et al., 2007), this journal or the [Climate Lit database](#)—are of crucial importance.

The Road Ahead: Aesthetic Affordances and Teacher Education and Training

Confident of the ability of educators to design rewarding tasks for rewarding pedagogical practice, we feel that the key challenge is not in the planning of tasks but in the steps preceding it: what can a specific literary text, film, or media artifact do? How and to what end do we combine them into richer textures for learning? There are clear implications for curriculum and policy development based on academic research that can fruitfully support teachers in their professional development, provide inspirations, and explore best practices. Most important, we see a clear indication that curricula in tertiary education pay better attention to the link of literary studies and literature pedagogy: this enables pre- and in-service teachers to confidently and knowledgably consider each of our three Ts with the necessary expertise.

This will help them to ask, as we have been doing here, what we are teaching for when we employ fiction for climate literacy pedagogy. Although behavioral change is important, discourse awareness, critical empathy, and systems thinking are the more immediate forms of learning with stories. This awareness allows for the integration of other, even seemingly contradictory, educational objectives, for instance, in the discussion of whether it is better to support hope (Redmond, 2024; Römhild and Weik von Mossner, 2024) or prepare students to “stay[...] with the trouble” (Haraway, 2016; Bartosch, 2021; Zimmerman, 2023). “How do we decide?” might be another ill-posed question: If “[c]limate literacy requires harmonizing multiple ways of knowing [...] into a lived, emotionally charged, and personally felt understanding of the planetary predicament [...]” (Oziewicz, 2023, p. 34), then the emotional, cognitive, medial, and communicative diversity of literary textures is key, and reading, feeling, writing, and talking with one another the indispensable educational moment. Research and educational practice will benefit from exploring these ideas in more depth now and in future.

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