

Community Cultural Wealth in Latinofuturism: Leveraging Speculative Fiction for STEM + Arts Asset-Based Pedagogies

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Abstract: In this conceptual paper, we present our work in progress towards the theorization and operationalization of an asset-based pedagogy for STEM + Arts content infused with the aesthetic and speculative fiction movement of Latinofuturism. As Latine scholars, we aim to contribute to the education field with an alternative approach to support the Latine population who is still disproportionately underrepresented in the STEM fields. Through our review of the literature and media, we use the theoretical framework of Community Cultural Wealth, specifically its six forms of capital, to examine Latinofuturism as a genre that can connect STEM + Arts themes with Latine culture through speculative practices. We propose that asset-based pedagogies situated in Latinofuturism aesthetics provide emancipatory opportunities for Latine to dream and think beyond the current barriers of access to STEM + Arts and create a new STEM culture *for* and *with* Latine.

Introduction and background

Our pluralistic world is more connected than ever, and so is the opportunity to exchange ideas and to collaboratively work to address, solve, or even improve the situation of complex challenges that affect us all. Such unprecedented and complex “wicked problems” (Rittel & Webber, 1973) include global pandemics, severe issues to our food systems due to climate change, systemic racism, wars, and their humanitarian and economic ripples, among many other issues. As education practitioners and researchers of increasingly pluralistic and interconnected societies, we need to reflect on our pedagogical practices and ensure we adequately support learners within our spaces. In this conceptual paper, we present our initial work towards the theorization and operationalization of an asset-based pedagogy for STEM + Arts (a) content infused with the aesthetic and speculative fiction movement of Latinofuturism. Through the theoretical lens of Community Cultural Wealth (Yosso, 2005), we examine Latinofuturism and show its leveraging potential to encourage Latine learners to participate, expand their cultural practices, and enrich the STEM + Arts disciplines while contributing to the solutions and improvement efforts of our 21st-century complex challenges.

The underrepresentation of Latine in STEM Education

The increase in the racial and ethnic composition of the population in our countries and classrooms is evidence of the expansion of pluralism of ideas, and it is an opportunity for education researchers and practitioners to embrace and nourish marginalized Students of Color (b) with unique cultural practices and strengths. For instance, from the latest data collection in 2019, more than half (52%) of all public elementary and secondary school students in the U.S. attended schools where Students of Color made up 50% or more of the total enrollment (NCES, 2022). Also, the most recent census data in the United States showed that the Latine population (i.e., Hispanic and Latina/o) comprises 19% of the total population in the United States, becoming the largest minority (U.S. Census Bureau, 2020).

However, some minorities are excluded and underrepresented in the Science, Engineering, Technology, and Math (STEM) fields. The Latine population is one of them who are still disproportionately underrepresented in STEM classrooms and workplaces. In fact, Latine youth face numerous barriers to entering and participating in the STEM fields. Several explanations of these barriers point to the nature of school curricula and structural and cultural factors, such as curriculum not culturally relevant but designed for the majority white middle-class; lack of funding to pursue a college education; difficulty in adapting to the culture of STEM college classrooms; and unnecessary rigor within competitive, exclusionary, and elitist environments (González et al., 2005; Chapa & De La Rosa, 2006; Flores, 2011; McGee, 2020). Therefore, new curricula, pedagogies, and educational environments that invite, embrace, and nourish Latine culture are more paramount every day.

The asset-based framework of Community Cultural Wealth

Some educational institutions have operated under the deficit view model towards minorities, treating these marginalized populations as lacking abilities and possessing deficits that need to be addressed by pouring knowledge into their empty minds. We can resist and eradicate this damaging worldview by changing our mindset

to embrace the cultural practices and strengths these populations already possess and incorporate them into our learning environments. This has been the aim of the strength-based and *asset-based pedagogies* tradition. This tradition has been advanced by many scholars, such as the work of Funds of Knowledge by Luis Moll and Norma González; the Third Space by Kris Gutiérrez; Culturally Relevant Pedagogy by Gloria Ladson-Billings; Community Cultural Wealth by Tara J. Yosso; and Culturally Sustaining Pedagogies by Django Paris and H. Samy Alim. We specifically inform our conceptual work with the theoretical framework of Community Cultural Wealth (CCW; Yosso, 2005).

The asset-based framework of CCW is a critical race theory approach to recognize and acknowledge the strengths of Communities of Color toward social and racial justice. CCW focuses on *wealth*, defined as the historical accumulation of resources and assets to resist forms of oppression (Yosso, 2005). In her work, Yosso (2005) challenges the assumption that Students of Color come to school with cultural deficiencies, but she calls to value and embrace their prior experiential knowledge and cultural practices from their home and their communities. In order to accurately inform our conceptual paper, we include here the definitions of each of the six not mutually exclusive or static forms of capital that nurture this community cultural wealth (Yosso, 2005): (1) *Aspirational capital*, defined as the “ability to maintain hopes and dreams for the future even in the face of real and perceived barriers” (p. 77). (2) *Linguistic capital* refers to “intellectual and social skills attained through communication experiences in more than one language and/or style” (p. 78). This capital also includes communication abilities via music, visual art, and poetry. (3) *Familial capital*, the “cultural knowledge nurtured among *familia* that carry a sense of community, history, memory, and cultural intuition” (p. 79). (4) *Social capital* alludes to “networks of people and community resources for instrumental and emotional support” (p. 79). (5) *Navigational capital*, “skills of maneuvering through social institutions” not created with minorities in mind (p. 80). And (6) *Resistant capital*, which is ‘knowledge and skills fostered through oppositional behavior that challenges inequality’ (p. 80).

From our literature reviews and other studies in progress, we have found that the particular aesthetic movement called *Latinofuturism* (Merla-Watson, 2019) employs speculative fiction to imagine new possibilities and futures while displaying evidence of all of the six capitals of CCW. In the following sections, we refer to each of the above definitions to show how CCW is present in Latinofuturism and why it can be leveraged to center Peoples of Color in their own learning and teaching. This theoretical move has the potential to empower Peoples of Color to reimagine the irrelevant pedagogical standards designed for the dominant population.

Latinofuturism

Speculative practices, dreaming and thinking beyond the present social and technological realities and future-oriented, is a powerful form of resistance and agency against inequity. Speculative fiction, an umbrella term that includes the genres of science fiction, fantasy, and horror, has been used by critical pedagogues to reimagine our present, or as Thomas (2013) put it, for “reading and rereading, writing and rewriting the world” (p. 4). Thomas & Stornaiuolo (2016) describe this practice, *restorying*, as using new media tools to reimagine the world and retell popular stories by changing to an alternate identity, time, place, mode, perspective, or metanarrative. Learning scientists have used speculative practices and their potential to empower youth, especially from minoritized communities, to engage in constructing and thinking on meaningful and more equitable futures (Holbert et al., 2020; Mirra & Garcia, 2020).

Latinofuturism, describes a broad range of Latine speculative aesthetics produced by creators of Latine origin (Merla-Watson, 2019). This speculative form of fiction denotes Latine aesthetics of various media, drawing inspiration from Afrofuturism and focusing on topics such as *indigenismo* (indigenous cultures), *mestizaje* (interracial mixing), and *coloniality* (dominant/dominated), which question narratives of progress and technological advancement (Merla-Watson, 2019). However, it is still a matter of discussion if Latinofuturism should include indigenous-futurism from the Indigenous Peoples of Mesoamerica and Latin America. Latinofuturism sees Latine people not as passive consumers of the speculative but as creators that repurpose speculation towards emancipatory ends (Merla-Watson, 2019). The work of Sedas et al. (forthcoming) on everyday ingenuity as a culturally-relevant practice of engineering of some Latine participants provides a concrete example of how we envision Latinofuturism to be integrated into a STEM + Arts asset-based pedagogy.

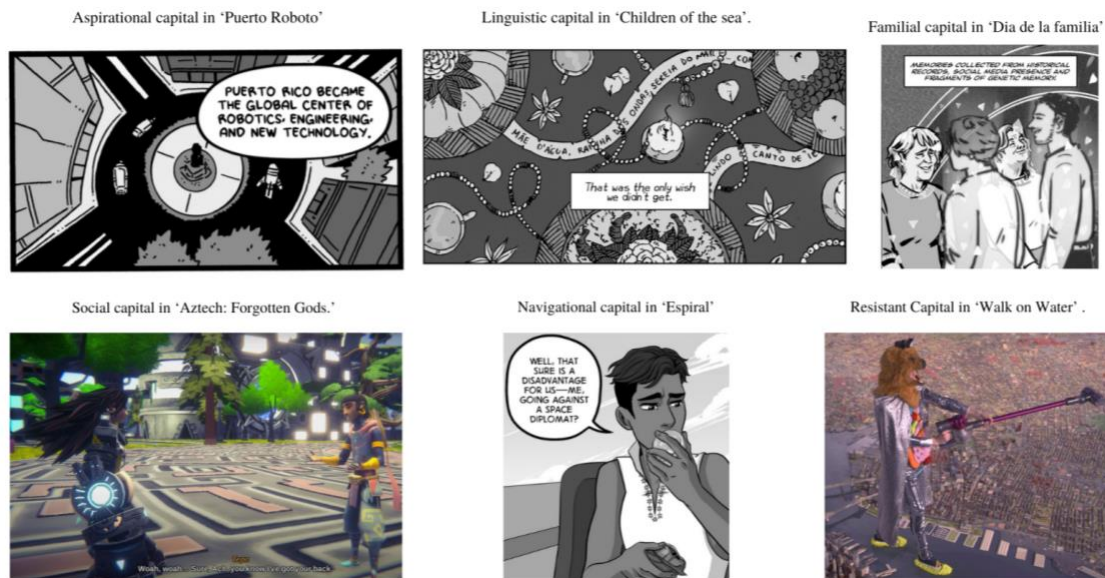
Community Cultural Wealth in Latinofuturism

To evidence how each of the six forms of capital that nurture CCW are displayed in Latinofuturistic media, we present evidence from comics, art installations, and video games (Figure 1). (1) *Aspirational capital*. In Latinofuturistic speculation, creators imagine futures, materialities, and possibilities for themselves to generate new worlds (i.e., worldmaking). For example, in “*Puerto Roboto*” (Santiago & Reyes Rico, 2021), the author dreams and creates a futuristic world where Puerto Rico is the “global center of robotics, engineering, and new

technology.” (2) *Linguistic capital*. In “*Children of the sea*” (Pueyo & Luis, 2021), a character finds a prayer to the goddess Lemanjá which is written in Portuguese, as well as many signs and writings as part of the comic. Students could use their own linguistic resources and mother tongue to restorey STEM + Arts practices and include multilingual elements in their artifacts, also to access artistic references in many languages. (3) *Familial capital* connects with Latinofuturism as it includes inquiry on the past, heritage, and history. In Latinofuturism, family history, knowledge, and practices are brought to dialogue with STEM + Arts practices. For example, in “*Día de la vida*” (Pérez & de la Torre, 2021), memories and stories of the past come alive through holograms that emulate dead family members. (4) *Social capital*. As Latinofuturism centers Latino communities as protagonists, students could cultivate and foster their relationships. In ‘*Aztech: Forgotten Gods*’ (2022), an indigenous-futuristic video game, the character is seen supported by other members of the community. Many of the challenges in the game are solved through the community’s wisdom and resources. (5) *Navigational capital* appears in Latinofuturistic stories and aesthetics, as they often include narratives of challenging and reimagining social institutions. In “*Espiral*” (Manzano, 2021), the main character learns to navigate a complicated diplomatic negotiation and succeeds due to his kindness and through promoting intercultural exchange between future Latin America and space. Lastly, (6) *Resistant Capital* is broadly depicted in Latinofuturistic artifacts as its main themes are migration and coloniality. Engaging with and producing Latinofuturistic media includes reflecting on historical inequalities that the Latine diaspora has faced and also how Latine people have continued to resist. For example, in “*Walk on Water*” (Guadalupe Maravilla, 2019), futuristic *coyotes* (people smugglers) resignify immigrant labor; they use futuristic vacuum cleaners and sounds to “clean” the space of New Yorkers Political phobias and blockages (Ramirez, 2021).

Figure 1.

Community cultural wealth in Latinofuturistic media (see endnote c).



Towards an asset-based pedagogy situated in Latinofuturism

We have shared our theoretical considerations on how situating STEM + Arts pedagogies within the aesthetics of *Latinofuturistic* movement may provide a nourishing learning environment since these aesthetics display the six forms of capital denoted in CCW already present in Latine populations. Providing latine youth with these opportunities may constitute an example of much needed culturally relevant STEM curricula that invite Latine to participate while embracing and celebrating their cultural backgrounds. Asset-based pedagogies infused with Latinofuturism may present opportunities for Latine to engage with STEM + Arts practices while *restorying* their past, present, and future narratives in these fields. Our present and future work includes a systematic literature review of empirical studies that describe the use of Latinofuturism in such asset-based pedagogies and also concrete examples of how Latine youth bring their community cultural wealth to reimagine STEM education that is relevant to them and their own communities and cultures.

Endnotes

- (a) We use the term “STEM + Arts” instead of the “STEAM” to symbolically give the Arts its place as equal to the other disciplines and signal the implicit trouble of the STEAM construct, as explained by Mejias and colleagues (2021).
- (b) The National Center for Education Statistics uses the designation of “Students of Color” to those who are Black, Hispanic, Asian, Pacific Islander, American Indian/Alaska Native, and of Two or more races.
- (c) Power and Magic Press, Publisher of “MAÑANA: Latinx comics from the 25th Century,” granted written permission to use figures in this educational publication.

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