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Find (Y)our Place in the Universe: Humanizing Curriculum through Unit (Re)design

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When youth have criticality, they are able to see, name, and interrogate the world not only to make sense of injustice but also to work toward social transformation. Thus students need spaces to name and critique injustice and ultimately have the agency to build a better world for all.

Gholdy Muhammad, 2020, p. 120

Why Curriculum (Re)Design?

Given the current state of events in the world, now seems as apt a time as ever to work toward social transformation in the classroom. Dr. Gholdy Muhammad (2020), associate professor of Literacy, Language, and Culture at The University of Illinois at Chicago and advocate for best practices in culturally responsive instruction, proposes a framework for revitalizing curriculum to encourage social transformation. Muhammad's words instill in us a sense of urgency as educators.

We, the authors - Ashley Olsen, Abby Stitt, and Jessica Van Kerkhove - read them as a call to build a unit that both invites students into content and propels them beyond themselves. Given the weight and breadth of

this task, we began with an immediately accessible resource: our district's core language arts program.

Our purpose for redesigning a curriculum unit was twofold:

1. To humanize, or make equitable, both its content and modes of presentation; and
2. to foster critical stances toward texts that create space for social transformation.

To apply the redesign process, we began with an astronomy unit from our district's third-grade core language arts program. Originally, the unit followed a student reader and workbook to teach students about the planets, constellations, and space exploration, emphasizing informational literacy skill standards in the reading and writing strands of the Common Core State Standards.

Whether designing a unit from scratch or redesigning an existing unit, (re)designing curricula stands to enrich the educational experiences of both educators and students. In sharing our rationale for engaging in this process, we lay a foundation for making sense of our redesigned curriculum unit. In this

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article, we first introduce ourselves and our district. We then put forward key theories and ideas that informed our curriculum redesign. We discuss how we applied these theories and ideas to our unit redesign processes before reflecting on redesigning curricula.

District and Author Background

We work at a small rural school outside Missoula, Montana, that currently serves PreK through 8th grade students. The local community is nestled in a beautiful, quiet valley in close proximity to several river access points. There is a long history of agriculture in this place, with several family-owned ranches that have spanned generations. While ranching is still a visible industry in the area, more and more families are supported by other means, whether family-owned businesses outside of agriculture or commuting to Missoula and other areas for work.

Our school district is over 100 years old and has served anywhere from 80 to 100 students for the last decade. Though small in size, our students come from varied backgrounds, and they have a range of social and academic strengths and needs. The classroom highlighted in our process was a 2nd and 3rd grade combination class with 18 students.

This predominantly white classroom community included two children of Turkish descent and one Native American student. Olsen, who taught the class, is white and of mostly northern European descent. Several students had diagnosed learning disabilities with IEPs in place for social/emotional and academic purposes. This classroom also included three children who had very recently experienced the trauma of losing a parent.

Together, we have 27 years of teaching experience, with 23 of those years being at this particular school. We are either on track to earn or have earned a Master's degree. We love the experience of teaching in a small school, especially because of the close relationships we can develop with our students. We also appreciate the autonomy we have from our administration to implement the curriculum redesign process.

Theoretical Perspectives

Defining fundamental theories and ideas as they apply to our unit redesign and connecting them will assist in building some common understanding. In this section, we briefly describe culturally responsive teaching through the lens of Muhammad's (2020) culturally responsive framework. Next, we define critical literacy as it connects to Muhammad's framework and culturally responsive teaching.

Culturally and Historically Responsive Teaching

Muhammad (2020) addresses the value of learning standards that delve beyond basic skill development. She proposes a culturally and historically responsive framework that includes not only skill development but also the following concepts:

- **Identity:** Students learn about themselves
- **Intellect:** Students build essential understandings that inform their learning
- **Criticality:** Students assume responsibility to read the world and address issues surrounding power and equity

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These measurable learning goals (or *pursuits*, as Muhammad terms them) make literacy education more responsive to students' cultures.

According to Muhammad (2020), "When these four learning pursuits are taught together, the learning becomes humanizing and more complete—giving students opportunities for personal, intellectual, and academic success." (p. 63) In developing students' abilities to interact with their identities and intellects, engage in criticality, and celebrate the human experience, we signal to our students that such pursuits alongside literacy skills have value.

Critical Literacy's Role in Culturally Responsive Teaching

When considering criticality in our redesign process, we pulled from the definitions of Muhammad (2020) and McLaughlin and DeVoogd (2019). Significantly, these definitions are rooted in Freire's (1985) argument that reading the word should always involve reading the world. As educators, it is our job not only to teach skills to students but to help build a better understanding of the world around them through challenging and intellectually invigorating content (see figures).

According to McLaughlin and DeVoogd (2004), "...we can nurture engagement by encouraging students to read for authentic purposes, make personal connections, focus on comprehension, and respond in meaningful ways" (p. 36).

Muhammad (2020) takes the act of critical thinking a step further by pushing students to understand systems of power and take responsibility for promoting anti-oppression. Students' ability to do this

powerful work is leveraged through their capacity to think, read, speak, and listen.

McLaughlin and DeVoogd (2019) suggest examining several layers of meaning and their implications: why an author chose to write about a certain topic, viewed that topic through a particular lens, and included some perspectives but omitted others. Through critical inquiry, readers may uncover a network of power dynamics that they can eventually work to dismantle through social action.

Multimodal Approaches to Language Arts Teaching

When beginning the process of (re)designing curriculum to align with Muhammad's (2020) Culturally Responsive Framework, educators must consider multimodal strategies. By *multimodal*, we mean acknowledging that literacy goes well beyond reading printed, written language texts.

In today's world, students are exposed to a wide array of modalities, including text, images, graphics, video, and audio sources outside the classroom. This widening exposure reflects that, as Reid and Kachorsky (2020) note, people inherently *communicate* through various modalities, such as speaking, writing, gesturing, creating works of music or visual art, mathematical sign systems, and others.

Educators may recognize these diverse modes of communication by incorporating multimodal resources and strategies into their teaching. Multimodal components are embedded throughout the Common Core State Standards. For example, students are expected to engage in collaborative discussions about source texts.

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Accessing Multimodality and Criticality through Layered Text Sets

Layered text sets become a powerful way to initiate the curriculum (re)design process because they allow us to combine the principles of multimodality and criticality. By starting with a single text and layering it with other texts that center on the same topic but are diverse in perspective and modality, we create multiple entry points for students to access texts. Doing so aligns with Lorena Germán's textured teaching traits of learning that are student-driven, community-centered, and experiential (Germán, 2021).

We want to emphasize the importance of the *multimodal* text, which refers to that expanded definition of what counts as text. To align with the principles of multimodal instruction, the texts within the set should incorporate a variety of modalities. These texts could take the form of conversations, works of music or visual art, websites, film, or theatrical performances, or written language texts (Reid & Kachorsky, 2020). Text sets are most meaningful when curated with a specific learning community in mind, making the curriculum (re)design process an ever-evolving one.

Tailoring these text sets to a unique group of learners creates the potential for even stronger access. We can do this by using what are called *mirror texts*, which are texts in various modalities that directly reflect individual students' cultures and identities within the learning community (Bishop, 1990; Quiroa, 2004). Quiroa (2004) identifies literature as a potential mirror in her dissertation, "Literature as mirror: Analyzing the oral, written, and artistic responses of young Mexican -origin children to Mexican American-themed picture storybooks." The

original metaphor of literature as windows, mirrors and sliding doors comes from Rudine Sims Bishop (1990).

When we broaden access, we support students' ability to draw connections across texts and deeply process content. Importantly, students are better positioned to critique systems of power evident in texts when given the opportunity to make meaning through diverse modes. Leveraging text sets to involve students in content and allowing them to demonstrate their understanding in diverse modes will help students work toward the goals of the standards, as well as increase student engagement and promote their ability to process information. The ability to build a mental model or make meaning of a text is a crucial component of engaging in criticality.

Redesigning Our Curriculum

In its stand-alone form, our district's core ELA program's astronomy unit for third grade carefully sequenced informational reading skills, designed to build upon previous units within the program's suggested curriculum. It incorporated texts that vary in structure and, to an extent, modality. The print student reader included detailed illustrations that captured students' attention and informed the written text. An additional text designed to be read aloud along with projected illustrations and several videos were also part of the existing unit.

However, thinking more expansively about what counts as text allowed us to identify missing modalities in the curriculum text sources. For example, we noticed visual art and music were missing. We recognized that the opportunity for students to process illustrations could be more robust. Furthermore, because Core Knowledge

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Language Arts (Amplify, 2021) designed the unit to target literacy skills alone, elements of Muhammad's (2020) Culturally and Historically Responsive Framework needed to be incorporated.

Drawing students' attention to each of Muhammad's pursuits throughout the unit and designing learning products that prompt students to showcase their interaction with each pursuit lets them know that we are assessing capacities outside of standards-based skills. With Muhammad's learning pursuits in mind, we redesigned this unit to center students' curiosity by utilizing multimodality to facilitate criticality via layered text sets, thereby uniting students with countless other perspectives across space and time (see Figures 1 and 2).

In the following sections, we describe how we modified the existing unit to humanize its content and modes of presentation. We redesigned the unit to include more layers of multimodality and criticality to promote student engagement and growth.

Incorporating Multimodality

When redesigning the existing third-grade astronomy unit, we prioritized multimodality. When considering multimodal strategies, educators can pick from various methods, including Visual Thinking Strategies (VTS). Essentially, educators can use visual texts to support literacy instruction across content areas and initiate Philip Yenawine and Abigail Housen's VTS questioning strategies outlined by Cappello and Walker (2016, p. 318):

- "What's going on in this picture?"
- "What makes you say that?"

- "What more can you find?"

Applying this questioning structure allows students to analyze complex visual texts, use text-dependent questioning, engage in multiple views of a visual text, and make claims using evidence. These actions all correlate with literacy skills outlined in the Common Core State Standards (Cappello & Walker).

In our redesigned unit, we incorporated VTS into several works of visual art, such as Rufino Tamayo's (1946) "Total Eclipse," Roy Lichtenstein's (1975) "Eclipse of the Sun," and Alma Thomas' (1970) "Snoopy Sees Earth Wrapped in Sunset" (as featured in Oscar Holland's (2017) article, "From Cave Paintings to NASA: How Humankind has Captured the Cosmos").

Additionally, we drew on this strategy when reading picture books aloud, such as the visually nuanced *The Forever Sky* (Peacock, 2019). Picture books make powerful additions to any multimodal text set because they combine visual and print-based communication modes.

Another multimodal approach to consider is listening comprehension through incorporating audiobooks and listening centers. As Fisher and Frey stated (2014), "listening comprehension outpaces reading comprehension from early childhood through at least middle school...children can listen to and talk about much more complex ideas than they can read about" (p. 64).

The Common Core State Standards for literacy include an entire domain devoted to Speaking and Listening skills, so embracing multimodal opportunities for students to increase their listening abilities is encouraged.

Figure 1

Our revised unit’s learning intentions at a glance, written to connect to Muhammad’s (2020) framework. Standards refer to the Montana State Standards for ELA.

Learning Pursuit	Unit Details
Identity	I can ask questions about our solar system and beyond that help me make sense of my place in the universe. I know that I am one small part of something vast and complex, but that my questions about the cosmos matter. I can find my place in the universe by connecting to the discoveries and wonderings of others. I can draw connections between my identity and those of others who have contemplated the universe and can appreciate the ideas of others with identities different from my own.
Intellectualism	I know that the universe is billions of years old and that humans have been contemplating the cosmos for many thousands of years. I can identify some of the scientific discoveries that scientists have made, as well as recount some of the constellation narratives that are central to Indigenous cultures.
Skills	<ul style="list-style-type: none"> ● RI2/3.1: Ask and answer questions about informational texts ● RI2/3.2: Identify supporting details that justify a main idea of a chunk of text (i.e. a paragraph or chapter) ● RI2/3.3: describe scientific processes (i.e. solar and lunar eclipses, star formation) ● RI3.9: Compare/contrast two texts on same topic ● RL2/3.1: Ask and answer questions about literary texts ● RL3.7: Analyze and describe how illustrations contribute to the words in a story ● SL3.1: Engage in a variety of collaborative conversations with peers about diverse topics ● SL2/3.2: Identify key ideas and supporting details of non print-based text ● W3.10: Write for a range of tasks and purposes ● W3.2: Write informational paragraphs about a topic (foundational paragraph writing) ● Reading strategy emphases: summarize informational text; make text-text, text-self, and text-world connections; monitor comprehension by asking questions of oneself while reading
Criticality	I can discuss how some perspectives have been left out of the study of the cosmos. I can identify some of the ways that females, Black, Indigenous, and people of color have contributed to the fields of astronomy and astrophysics. I know that narratives and scientific discoveries have helped shape our collective understanding of the cosmos.
Joy	I can celebrate my ability to contemplate my place in the cosmos! I can find wonder in the discoveries made by humans that have come before me - from a variety of backgrounds like and unlike my own - and enjoy our ongoing curiosity about the unknowns in space. Curiosity about the unknown is central to our human identities!

Figure 2

Our unit’s multimodal text set at a glance

Audiovisual Texts	<ul style="list-style-type: none"> ● “The Planets” (Holst, 1918) ● “Blackfoot Star Stories - The Bunched Stars” (MT OPI Indian Education Division, 2018) ● “Connecting Earth and Sky” (The Smithsonian National Museum of the American Indian, 2012) ● A Rare Galaxy That’s Challenging Our Understanding of the Universe, Burçin Mutlu-Pakdil’s TedTalk (TED, 2018) ● Get to Know Your Galaxy! Astronomy for Kids (SciShow Kids, 2016)
Visual Texts (visual art)	<ul style="list-style-type: none"> ● “Total Eclipse” (Tomayo, 1946) ● “Eclipse of the Sun II” (Lichtenstein, 1975) ● “From Cave Paintings to NASA: How Humankind Has Captured the Cosmos” (Holland, 2017)
Print-based Texts	<ul style="list-style-type: none"> ● “Burçin’s galaxy” (Glover, 2018) ● CKLA (Core Knowledge Language Arts) Unit Reader (Amplify Education, 2021) ● <i>How the Morning and Evening Stars Came to Be</i> (Fourstar, 1978) ● “She Explained Mysteries” (Edgar, 2021) ● <i>The Forever Sky</i> (Peacock, 2019)

Figure 3

Accountable Talk sentence stems to generate meaningful participation in discussion

Accountable Talk

Purpose: Accountable talk helps students to move learning forward through academic discussions that are student led. It encourages and empowers students to draw on evidence as well as respect others ideas and thoughts, while also using criticality.

Procedure:

1. Setting rules and procedures for accountable talk is critical for its success. Respect, participate, avoid side conversations, talk on issues not people, etc.
2. Group students in one large group or two smaller groups. One large is preferred so all students are engaged in the same conversation.
3. Use sentence stems to guide discussions. For example:
 - “I agree with you because...”
 - “ I respectfully disagree because...”
 - “I would like to add on to what ___ said because...”
 - “Based on the evidence found ___ I believe...”
4. This is a student led discussion and is important for the teacher to only step in as needed, but should stay to the sidelines.

Although listening stations did not play a prominent role in our redesigned unit, we did include various opportunities for students to tap into the listening modality. A TED Talk (2018) about the recent discovery of a new galaxy, along with several informational videos about our galaxy and astronomical phenomena, as well as audio versions of informational and narrative texts, allowed us to engage students in the content through various modes of communication. Holst’s musical suite, “The Planets,” became the backdrop of our unit.

Through this audio-based text, we prompted students to find joy as they celebrated the various planets in our solar system. Students had the opportunity to paint what they heard in select movements of the piece and use several of its contrasting movements to work toward the intellectual

pursuit of describing how inner planets are similar to and different from one another.

In one of our redesign unit lessons, students could demonstrate their experience of joy through visual art. However, students’ self-generated questions in response to the text allowed them to demonstrate a key informational literacy skill and ability to evolve their own identities. Such overlap illustrates the potential for simultaneously addressing and assessing skills-based and non-skills-based pursuits.

Applying Criticality through Layered Text Sets

Including criticality in the redesign process greatly propels students beyond the multimodal text(s) toward meaningful recognition of marginalized groups.

Throughout the unit, students are presented with numerous opportunities to access the cultures and histories of

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Indigenous peoples through several star narratives and evoke joy by celebrating the contributions of people of color. Accountable Talk (see Figure 3) is a strategy to encourage discussions that emphasize criticality within younger grades (Michaels et al., 2008; Wolf et al., 2006).

We used the Accountable Talk strategy to discuss what students learned about contributions by Black, Indigenous, and People of Color within the field of astronomy. Using sentence stems helps to support students in stimulating discussions through Accountable Talk and interacting with their peers. Students navigated differing opinions, thoughts, and ideas in a respectful and meaningful way.

In our unit redesign, we highlighted the contributions of lesser-known people to deepen students' growing understanding of scientific concepts in the field of astrophysics. For example, as students studied the scientific process of a solar and lunar eclipse through their unit reader, they also had the opportunity to learn about 18th-century female Chinese astronomer, Wang Zhenyi, who significantly advanced our knowledge of what happens during an eclipse.

These layered texts then informed students' creation of a visual art and writing project wherein they illustrated either a solar or lunar eclipse and described it through an informational written paragraph. This project promoted the principles of multimodality and Muhammad's (2020) framework by promoting students' agency regarding chosen mode of expression and topic (solar or lunar eclipse). It is worth noting that Edgar's (2020) article also served as a powerful mirror text for female students, who could see themselves

represented in the male-dominated field of astrophysics.

The layered text set in our redesigned unit also included several other mirror texts, which we selected for students in our specific learning community of second and third-graders. One source text was the audio-recorded Blackfeet Bunched Stars narrative (OPI, 2018).

Two other source texts feature the contributions of Turkish astrophysicist, Dr. Burçin Mutlu-Pakdil. These texts include Mutlu-Pakdil's (2018) TED Talk, entitled "A Rare Galaxy That's Challenging Our Understanding of the Universe," and Glover's (2018) article, "Burçin's Galaxy."

Through all of these mirror texts, our students could see themselves represented in content as all learners gained the ability to discuss some typically marginalized perspectives and contributions. They learned that narrative and scientific discovery have shaped our collective understanding of the universe and that both forms of knowledge therefore have value.

Honoring criticality became and remains a work in progress. In our learning community of second and third-graders, we adapted our revised unit to accommodate students' excitement about Burçin's Galaxy. In our original redesign, it made sense for students to choose to create and display a written piece about either Wang Zhenyi or Mae Jemison, whom students learned about toward the end of the unit. However, students' energy surrounding this new galaxy prompted a shift in direction.

Students were instead offered the choice to revise, display, and submit as a learning product their paragraph (and accompanying visual) about either a solar or

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lunar eclipse or Burçin's Galaxy. We framed their choice by asking, "What do you think people in our school would want to learn more about?" Although this final learning product did not directly target the learning pursuit of criticality for all learners, it did emphasize identity and participation in a dynamic community of discovery. Creating a polished curriculum product seems neither possible nor advantageous, even when revising the curriculum. Indeed, as Muhammad (2020) suggests, creating humanizing curriculum is all about remaining responsive to the learning community.

Reflections on Curriculum Redesign

How have students' perspectives shifted due to this revised unit, and what changes might any district or individual practitioner expect to see when trying to humanize curriculum? Change in perspective and behavior can sometimes be so subtle as to go unnoticed unless one explicitly looks for it. Such is usually the case in communities - the classroom being no exception - where we spend so much time with one another. Having prodded at texts and engaged in extensive discussion with peers surrounding the astronomy content, students' burgeoning curiosity became increasingly visible throughout the unit.

Notably, their tendency to lean deeply into the process of questioning heightened. A trip to a university planetarium near the end of the unit reinforced this sense of wonder, and their response to the trip indicated a shift in perspective. Appropriately, their ceaseless questions took center stage; whether they were aware of it at the moment or not, they were reflecting a central learning pursuit of the unit, which was to wonder as people have been doing for millennia about the marvels of

the cosmos. Perhaps our students' growing tendency to question in our students hints at what educators might expect to observe as a result of any humanizing curricular shift.

Students were poised in that moment at the planetarium, and - we hope - still are, to question, whether they were directed toward a text or the wider world. One might argue that questioning is a central act of criticality. Though young students' awareness of criticality is still rudimentary, bringing queries to the forefront nurtures its growth.

Conclusions

As an entry point, redesigning this single unit of study within the third-grade curriculum served as a way to commit ourselves as educators to the necessary, ongoing, and—as we learned— the recursive, process of creating humanizing curriculum. We are shifting our perspectives toward contextualizing content standards across the grade-level continuum within the humanizing pursuits of identity, criticality, and intellect.

Despite the important shift, we recognize this unit's limitations. Although the unit promotes equity within the classroom by prioritizing multimodal learning opportunities, our response through this unit redesign to Muhammad's (2020) call for promoting criticality for students at the early to mid-elementary grade levels is evolving. Of all the learning pursuits, criticality seems to bear the most weight in terms of propelling students from the realm of skill and intellect toward meaningful action. Herein rests the potential for social justice that may yet be untapped within this unit.

While we ponder this dimension of Muhammad's (2020) framework, we also acknowledge the exciting possibility that wide

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exposure to diverse and marginalized perspectives beginning at the earliest grade levels prepares students for more direct involvement in uncovering and dismantling injustice as they advance in their schooling. We recognize that participating in criticality is the work not of a single unit or year but of one's life.

In sharing our approach to aligning curriculum with Muhammad's (2020) framework, we offer aspects of curriculum development for other educators to consider when designing or redesigning curriculum. One might consider looking at all facets of the curriculum unit for areas to improve upon multimodality and criticality through layering texts. Layering is a process that might begin with a single seed text which links to your curriculum.

Practitioners should be prepared for students' queries to shift a unit's trajectory in progress and to revise units to accommodate each unique classroom community. Humanizing curricula ought to be one that continually unfolds; engaging in that process necessitates approaching unit design with continually fresh eyes, open minds, and (ideally) through productive collaboration with colleagues.

We approached the task of redesigning a third-grade astronomy unit within our core language arts program with the hope that our young students would deepen their understanding of diverse perspectives and contributions and, over time, develop the ability to examine critically the world and all of the systems of power at work within it. The process of redesigning this curriculum initiated what we hope will be the work of our students' lives: engaging with the world in

ways that bring about social transformation by striving against injustice.

However, to work against injustice and ultimately build a better world, one must first be capable of recognizing injustice; creating spaces to build awareness of diverse and marginalized perspectives is where we chose to center our redesign efforts.

Acknowledgements

As educators who teach at different grade levels in the same school district, we are grateful for the opportunity to collaborate on curriculum design and share our process with others. Our joint reflection on this redesigned unit has strengthened it and created space for the ongoing crucial work of humanizing curriculum at all grade levels.

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