

To Sustain Tribal Nations:

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Striving for Indigenous Sovereignty in Mathematics Education

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Abstract

That education is empowering is one of the U.S.'s most sacred tenets; however, for many Indigenous students, schooling has been intentionally damaging. Drawing on semi-structured interviews, in this article I highlight tribal education leaders' sensemaking about the paradoxes and promises of their work in education, as they navigate the antinomical ideas that education can be both empowering and damaging. Rooting analysis in Tribal Critical Race Theory (TribalCrit) (Brayboy, 2005), I connect tribal nation-building with various Indigenous educational efforts, including opportunities provided by the charter school movement. Findings highlight values that Indigenous leaders hold for their students' education, including cultural and linguistic sustenance, cultural congruity, and self-determination. Using mathematics as a lens to examine some of the contours of Native education, analysis illuminates complexities inherent in Indigenous education and tribal nation-building.

Introduction

That education is empowering is one of the United States' most sacred

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tenets (Grubb & Lazerson, 2004). However, for many Indigenous students, schooling has been intentionally damaging (Child, 2016; McBeth, 1983b; Goodyear-Ka'opua, Kauai, Maioho, & Winchester, 2008). Navigating the antinomial ideas that education can be both empowering and destructive, Indigenous education leaders in what is currently Oklahoma¹ are building coalitions toward education that is humanizing for Native American students. By building an international (tribal nation to tribal nation) movement, tribal nations are expanding their opportunities for self-determination and cultural sustenance in education. In this article I draw on interviews with Indigenous education leaders to understand their sensemaking about the paradoxes, promises, and perils of public education for Native American students.

The foundations of education in what is currently Oklahoma set a unique landscape on which these education leaders work. When the U.S. government forcibly removed 39 tribes to “Indian Territory” (currently called Oklahoma) arrived, they promised that no white settlers would be allowed west of Fort Smith (Takaki, 2008). After the removal, several tribal nations established schools for their citizens. Choctaw Nation operated 12 schools in 1838, and these became the model for schools opened by Creek, Chickasaw, and Seminole Nations (Reyhner & Eder, 2017). Cherokee Nation established a school system in 1841 and operated 18 schools by 1843. As usual, the federal government did not hesitate to break its promises when they no longer suited settler desires. After the Civil War, with white settlers clamoring for the land they saw Natives “not using,” the Dawes Act of 1887 took nearly 50 million acres of land from tribal control and opened it up to white settlement (McBeth, 1983b). In the early 1900s, as settlers were preparing for statehood, the federal government interfered in the self-government that tribal nations had reestablished in their new location and closed tribally-operated schools (Writer, 2008). This was the beginning of mandatory state-operated schooling (Reyhner & Eder, 2017; see also Fuchs & Havighurst, 1983), a pattern that was taking shape all around the U.S.

In addition to this theft of land, settlers moved toward another purpose: the Dawes Act also broke up communally-held land, allotting it to individuals instead of tribes, to break down Native peoples’ traditional ways of living (McBeth, 1983b) and assimilate them into mainstream society. The Dawes Commission’s role in the breakup of tribal lands made Native life and education in what is currently Oklahoma distinct from the experiences of tribal nations in other parts of the U.S. (McBeth, 1983b). Proponents of settlement wrote,

With white settlers on every alternative section of Indian lands, there will be a school-house built, with Indian children and white children together....they will

for a while speak their own language, but they will readily learn the ways of civilization. (49th Congress, 1887, p. 1763)

The senators proposed that not only should Indigenous people learn the English language, but that schooling would also instill the “work ethic” of their white neighbors (49th Congress, 1887; Takaki, 2008). These racist opinions follow the expressed policies of the Bureau of Indian Affairs federal boarding school system, beginning with the Carlisle Indian School, whose mission was to “kill the Indian and save the man” (Pratt, 1973, p. 261). As in the rest of the U.S., many Indigenous children in what is currently Oklahoma were sent to boarding schools, where they suffered horrific treatment (Ellis, 1994; Kickingbird & Kickingbird, 1979; Lomawaima, 1993; Lomawaima, 1994; Lomawaima & McCarty, 2002; McBeth, 1983a), including having their mouths washed out with lye if they spoke their Native languages (Child, 2016). What was different in Indian Territory (and later Oklahoma) was that most of the schools had students from multiple tribal nations; “thrown together indiscriminately, ignoring differences in culture, language, and traditions” (McBeth, 1983b, p. 122). This catalyzed the linguicide settlers aimed to commit, because students could not communicate with one another in a common language; thus, learning English often became the best way to develop relationships (McBeth, 1983a). While schools have been the weapon of choice for “cultural genocide” (Lomawaima & McCarty, 2002, p. 282) across the U.S., this legislation set the stage for the particular way education is used as a vehicle of colonization in what is currently Oklahoma.

Author Positionality

I have known some of this history since my childhood; attending integrated schools in what was then Indian Territory. My great-grandfather (Tsalagi/Chahta) experienced racial discrimination that remained some of his most vivid memories throughout life. I grew up in Oklahoma hearing these stories and have a strong commitment to do this work to honor my ancestors and family. However, I was raised in a mostly assimilated/White home, and I am not a citizen of a federally-recognized tribal nation, so I write from a settler perspective. I recognize that this perspective limits my understanding of Native experiences and oppression, so I have sought to honor the views of participants as faithfully as possible throughout the study, routinely reflecting on how my interpretations are influenced by my positionality.

The Present Study

While some of the historical atrocities of this legacy are documented,

the ways in which current schooling systems work to divest Indigenous students of their cultures and identities are often overlooked. Also overlooked are tribal sovereignty and the right to self-government, which are both enshrined in the U.S. Constitution, but predate the Constitution (Lomawaima & McCarty, 2002; McCarty & Lee, 2014). In this study, tribal education leaders highlight some of these contours of education for Indigenous students. They discuss mathematics education—an area that is less robust in the literature on culturally-sustaining schooling. Because of schools’ assaults on Native languages and cultures, much of the recent focus of Indigenous education has rightfully centered language; Indigenous peoples’ ways of knowing, doing, and learning mathematics and science have not received as much attention (Marshall & Kivalahula-Uddin, forthcoming).

The charter school movement adds a complicating layer to his landscape. Although many charter schools are colonizing forces (Burns, Nolan, Weston, & Malcom, 2016), they have nevertheless begun to play a role in self-determination efforts on the part of Indigenous groups (Bielenberg, 2000; Buchanan & Fox, 2004; Ewing & Ferrick, 2012; Fenimore-Smith, 2009; Kana’iaupuni, 2008; McCarty & Lee, 2014). Part of the initial allure of the charter school movement lay in its promise for liberation from oppressive policies, but the movement has been coopted in recent years by neoliberal agendas (Wells, Slayton, & Scott, 2002). A recent legislative change in Oklahoma has prompted Indigenous leaders to explore the possibility of opening charter schools to provide culturally-sustaining education. My primary research question was: *How do Indigenous education leaders make sense of the paradoxes and promises of education as they work toward tribal nation building?* Using qualitative methods, I highlight education leaders’ sensemaking about these paradoxes and promises as they continue the movement to provide culturally-sustaining mathematics education for Indigenous students.

Theoretical Framework

To situate Indigenous education in what is currently the U.S., I draw upon Tribal Critical Race Theory (TribalCrit) and Hampton’s (1995) theory of Indian education. TribalCrit’s primary tenet is that “colonization is endemic to society” (Brayboy, 2005, p. 429), including education. Similarly, Hampton (1995) theorizes that Indigenous education “cannot be understood apart from a historical analysis” (p. 14). The history in what is currently Oklahoma provides undeniable evidence that colonization is at the foundation of education policy; in this study, I begin with the premise that colonization *continues to be* an overriding principle of education policies. In large part, this is because “educational

policies toward Indigenous peoples are intimately linked around the problematic goal of assimilation” (Brayboy, 2005, p. 429). In fact, some contend that it may be impossible to disentangle federal policy from this goal, which underscores Indigenous peoples’ desire for self-determination in education (Brayboy, 2005).

Hampton’s (1995) theory of Indian education offers several guiding principles: that spiritual concerns are an important part of education; that Indigenous peoples’ styles of thought, communication, and learning should be considered in Indigenous education; that Indigenous education is often service-oriented and for serving the people rather than individual advancement; and that Indigenous education often has multiple, complex purposes. TribalCrit adds that “stories are not separate from theory; they make up theory and are, therefore, real and legitimate sources of data” (Brayboy, 2005, p. 430). TribalCrit also cautions that while tribal customs, philosophies, and visions for the future are central, they also “illustrate the differences and adaptability among” (Brayboy, 2005, p. 429) tribal nations. As I present my analysis, I routinely return to these theories for guidance.

Literature Review

Indigenous peoples’ efforts to exercise sovereignty and self-determination in education have taken many forms, confronted numerous challenges, and demonstrated incredible resilience since the settler invasion. Tribal nations’ moves to create humanizing education and reclaim their sovereignty include, among others: creation of culturally-congruent curricula and pedagogies, language preservation programs, and forming ethnocentric schools, all in service of tribal nation-building. Each of these efforts has carried new possibilities, but also new limitations and tensions to navigate.

Efforts to Humanize Education in Public Schools

Native Americans have worked toward humanizing education for Native students in a variety of ways. Often, these efforts focus on culturally-relevant curricula, with the promise that drawing on students’ languages and cultures in developing curricula will improve students’ academic experiences (e.g., Demmert, 2001; Kisker et al., 2012). Too often, though, efforts to make curricula relevant are reductive and essentializing (Castagno & Brayboy, 2008), and this can be especially true in mathematics education where connections are often contrived or superficial (Marshall & Kivalahula-Uddin, forthcoming). Other strategies have centered culturally-responsive pedagogies (e.g., Castagno

& Brayboy, 2008; Swisher & Deyhle, 1989), with the intention of resolving mismatches between school and home cultures to create more favorable learning environments. Another important endeavor in Native schooling is teaching Indigenous languages (e.g., Littlebear, 2000)—a crucial part of cultural sustenance in a settler-colonial state (Paris & Alim, 2014)—but one that is often quashed through funding and/or accountability policies (Winstead, Lawrence, Brantmeier, & Frey, 2008).

Tribal Nation Building

Another important function of Indigenous education is tribal nation-building. Tribal nation-building concerns the development and strengthening of tribal nations and communities through “political, legal, spiritual, educational, and economic processes” (Brayboy, Castagno, and Solyom, 2014, p. 578). In education, it refers to the purposes and desired outcomes of education that Indigenous peoples hold. Tribal nation-building, Brayboy and colleagues (2014) write, is “nestled in and based on epistemological, ontological, and axiological assumptions that the health and well-being of the nation and its communities is more important than any individual achievement (Brayboy et al., 2012; Coffey & Tsosie, 2001)” (p. 578). Brayboy and colleagues (2014) explain that despite the seeming conflict of using schooling to these ends, “given educational institutions’ rich history perpetuating physical and cultural violence against Indigenous students, we believe there are connections between what formal schooling has to offer and tribal nation building” (p. 589). Instead of self-advancement, Indigenous students’ primary motivation of attending school is often to acquire skills to build one’s tribal nation and serve one’s community.

Ethnocentric Schools

To forge self-determination and engage in nation-building, some tribes have formed ethnocentric schools. Ethnocentric schools have primarily been either reservation-based or located so that they serve primarily citizens of one or a few tribal nations (Ewing & Ferrick, 2012). Thus, many of these schools aim to provide an education that explicitly attends to cultural preservation for a specific few groups by incorporating culture into curricula and engaging local community members in school operations (Buchanan & Fox, 2004; see also Goodyear-Ka’opua, Kauai, Maioho, & Winchester, 2008).

A well-known example is Hawai’ians’ use of ethnocentric schools to bolster local control, community involvement, and cultural sustenance in education. These efforts began in 1995, and by 1999 there were more than a dozen ethnocentric schools for Native Hawai’ians, (Buchanan &

Fox, 2004; Kana'iaupuni, 2008). Aiming to provide schooling that honors students' cultures and epistemologies, these schools are designed to match pedagogies with students' ways of learning, and content with students' backgrounds (Buchanan & Fox, 2004; Goodyear-Ka'opua, Kauai, Maioho, & Winchester, 2008). Several of these are Hawai'ian-language immersion schools (Buchanan & Fox, 2004), designed to reclaim and preserve Hawai'ian language.

Ethnocentric charter schools. In recent years, tribal nations have begun to take advantage of opportunities presented by the charter school movement to form ethnocentric schools. Charter schools have been hotly contested: to some, they signify freedom from cumbersome regulations and opportunities for innovation (Bielenberg, 2000; Lomawaima & McCarty, 2006); to others, they represent unregulated sites of oppression, with militaristic environments and a myopic focus on test scores (Golann, 2015; Lack, 2009). Despite the polemics, the number of charter schools on reservations is increasing each year and charter schools now comprise 15 percent of all reservation-based public schools (National Alliance for Public Charter Schools, 2013).

Lomawaima and McCarty (2006) hopefully point out that Native-operated charter schools offer opportunities for "mediating the pressures of the standards movement and exerting local control" (p. 162). Although local control is sometimes afforded through these Native-operated schools, the pressures of accountability and standards often remain in place (Buchanan & Fox, 2004). In some cases, tribal nations have been able to write their own standards, but in most, states, school boards, and/or federal accountability regimes continue to compete with tribes' sovereignty in education. One promising counterexample is the case of the Pemayetv Emahakv "Our Way" Charter School, whose school board is the tribal council (Ewing & Ferrick, 2012).

Although much hope has been placed in these ethnocentric charter schools, they still face a myriad of challenges. Many Hawai'ians lament their accountability to state testing requirements as directly conflicting with their priorities. As Buchanan and Fox (2004) put it, "Standardized performance tests can be expected to measure exactly those things from which these schools have fled, while providing no information about the effectiveness with which the schools have instilled the values which lie at their core" (pp. 102-103). Similarly, McCarty and Lee (2014) documented challenges that Native American Community Academy (NACA) schools have faced in their efforts to both carry out their mission, and comply with state and federal achievement mandates. Kana'iaupuni (2008) found that culturally-responsive environments can be beneficial for students' learning as measured by tests, but that many gains are obscured by

testing and reporting methods (see also Hawai'i Educational Policy Center, 2004). While increasing student achievement according to dominant standards is often a priority for Indigenous-operated schools, under current federally- and state-mandated accountability requirements, it often eclipses all other priorities of Indigenous communities.

I do not take a position here that is pro-charter, nor do I discuss in depth the controversies surrounding the larger charter movement. Instead, I highlight how tribal leaders are utilizing the education landscape that currently exists to continue the cultural sustenance of their nations. This is a story of resistance and resilience of people on a landscape that changes rapidly, and yet not essentially. While the types of schools and pressures come and go, the U.S.' aims of assimilation and imperialism—along with Indigenous peoples' persistence—have remained.

Methods

Drawing upon semi-structured interviews, I examine the narratives that leaders tell, and the various goals they hold for their students' education. To answer my research question, I used an interview protocol that asked participants to tell me about their involvement in education and their tribe(s); the current state of mathematics education and its fit with tribal values, goals, and visions; cultural congruity of education with students; how they might envision mathematics education for the future; and what they hope mathematics education will do for students. Each semi-structured interview was conducted over the phone and lasted approximately 1.5 hours. I took detailed field notes during the interviews and sent emails with follow-up questions when necessary.

Following Critical Race Methodology (Solórzano & Yosso, 2002), I center the voices, experiences, and knowledge of participants in analysis. Importantly, I do not seek to portray the viewpoints of these Indigenous leaders as representative or to paint Native people as a monolith; rather, I highlight the work and sensemaking of five individual citizens of five different nations as they work—sometimes together, sometimes independently—to accomplish similar goals in what is currently Oklahoma.

Because data for this analysis come from a larger study about mathematics education for Indigenous students, many of the interview topics pertain to mathematics. However, participants often talked about mathematics as embedded in a broader conversation about self-determination, cultural sustenance, and tribal nation-building, and our interviews strayed from content-specific topics. Participants seemed to see mathematics education as integrated with an overarching vision for education. Thus, some of the findings are math-specific, but some are content-neutral.

Participant Selection

In consultation with the Director of American Indian Education for the state of Oklahoma, I reached out to tribal education leaders (identified by the director as such) to participate in interviews. Five of those contacted agreed to be interviewed for this project. All participants who consented to be part of the study were male, but this is not representative of tribal education leaders across the state. In any context, gender shapes the perspectives, experiences, and epistemologies of participants (Harding, 1993; Moreton-Robinson, 2013), so it is important to note that this study lacks female-, two-spirit-, and/or queer-identified participants. This is certainly a limitation, but since “representativeness” was not sought for this study, it is not a ruinous one.

All participants have been given pseudonyms; I share broad strokes from their work histories, but for the sake of anonymity I withhold job titles and other identifying information. Joseph is Khoiye—a citizen of Kiowa Nation—and is looked to as an education leader by Native people across the state. Similarly, Rodel, a citizen of Caddo Nation, has held education positions at various levels of state government and is well-known statewide. Tom is Tsetsèhestàhese—a citizen of Cheyenne & Arapaho Tribes—and has served in various education organizations, including as education director for his nation in the past. Andrew (Paiute/Pawnee/Comanche) has worked in higher education admissions and for teacher training organizations. John is Chahta—a citizen of Choctaw Nation—and has been a mathematics teacher as well as a school leader.

Data Analysis

Once the data collection process was complete, I analyzed interview field notes and email exchanges using the constant comparative method (Boeije, 2002). I read and re-read data throughout the study. Data analysis began with open coding. I included *in vivo* codes—using the language of participants (Charmaz, 2006) when possible—to analyze emic meanings. *In vivo* codes “anchor your analysis in your research participants’ worlds” (Charmaz, 2006, p. 57), and help the researcher evaluate whether participants’ meanings have been captured. Building upon these codes, I then coded the data for emergent themes (e.g., challenges of education, cultural congruity, cultural/linguistic sustenance, tribal sovereignty). As themes emerged, rather than reconciling views that seemed to conflict, I put the data in conversation with each other to examine the paradoxes inherent in Indigenous education. Thus, I sought to resist essentialization of an Indigenous view, but to foreground the complexities involved in participants’ meaning-making about education.

Throughout the research process, I shared my interpretations of data with participants (McCarty & Lee, 2014), engaging in regular member checks to authentically represent the “multiple realities” (Guba & Lincoln, 1989, p. 37) of participants.

Findings

I begin by highlighting some of the means through which participants are engaging in tribal nation building, while exploring some of the challenges and paradoxes of these efforts in the current context. In this section, I illuminate connections, tensions, and nuances in participants’ various efforts. Finally, I spotlight one project that three of the participants are involved in, and their sensemaking about opportunities to secure sovereignty in education and to influence a broader conversation.

The Promises:

What do Indigenous Education Leaders Want for Their Students?

Participants named several ways mathematics education and education more broadly can be used for tribal nation-building. Broad themes include: cultural and linguistic sustenance, congruity between schools and students’ cultures, and sovereignty for tribal nations. Many Native education leaders have already built vibrant movements toward realizing these goals, but substantial challenges remain.

Cultural and linguistic sustenance. Tribal nation-building in education contexts involves explicit resistance to assimilation (Brayboy et al., 2014). But more than that, it involves concerted efforts to reclaim and sustain languages, traditions, and cultural practices for a healthy national future.

Cultural sustenance through Indigenous language programs. All participants mentioned preserving languages as central to tribal nation-building. Joseph framed this in the history of linguisticide in education: “You couldn’t speak the language; you couldn’t learn about who you were.” He mentioned that this is still the case—although current laws (e.g., the Every Student Succeeds Act) give lip service to preservation of Indigenous languages (ESSA, 2015), most schools still do not allow students to speak their Native languages and even when they do, state tests given in English only ensure that such efforts will be sidelined (see Winstead et al., 2008). Joseph added, “We really need to change our system of indoctrination of our students in order for them to flourish.”

Joseph and colleagues, recognizing this indoctrination as extremely problematic, set out to combat it on multiple fronts. First, they began

working with the Oklahoma Director of World Languages with the aim of modifying teacher certification requirements. They successfully campaigned to alter the requirements so that fluent speakers of Native languages could receive a teaching certificate with any bachelor's degree—under the altered requirements, it need not be in education. Joseph explained that teachers qualifying under this new rule may apply for alternative certification and “go in and teach a Native language, and [simultaneously] work on professional learning to help support their knowledge of teaching.” This change in certification requirements was critical to building school-based Indigenous language programs. Joseph added that the Director of World Languages for the state of Oklahoma knew that tribes were better positioned to assess prospective teachers' language proficiency, “so she gives that responsibility back to the tribes to assess potential candidates...It really elevates the role of the tribes in the process and their involvement in public schools to promote Native language revitalization.”

These lobbying efforts not only resulted in more teachers of Indigenous languages in schools, but also allowed students to meet world language requirements for graduation by studying their heritage languages, rather than Latin or French. Joseph shared that in one town, he started “the Kiowa 1 and Kiowa 2 language program that met the requirements for a world language to graduate. And I started that in the early 90s and it's still going on now.” He added, “That's my proudest legacy.” Furthermore, he said in many cases, “the tribes are able to support those language programs by actually paying the Native language instructor for the district,” making these programs beneficial for the district in multiple ways.

Cultural sustenance through culturally-relevant curricula.

In addition to the high-priority project of creating and supporting Indigenous language programs, John emphasized the importance of cultural relevance in mathematics curricula: “More than anything, using students' own lives, their own stories, their own imaginations to create that concrete math knowledge is paramount to anything that we can do in math education.” He added, “it's important to make sure that culture is honored.” Joseph spoke about an example of mathematics curriculum in Diné schools based upon traditional practices of growing corn, as well as Indigenous navigation systems; but, he cautioned that such curricula must be grounded in Indigenous communities' knowledge, not transplanted from other tribal nations.

Joseph and Tom have been busy writing grants and lobbying for increased funding to broaden support for culturally-relevant education materials. Joseph added that their vision included:

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Build[ing] a[n online] clearinghouse for Indian education resources, specifically addressing the 39 tribes in Oklahoma. A tendency in Oklahoma is to focus on the five tribes—Cherokee, Choctaw, Creek, Seminole, and Chickasaw—and we wanted to broaden that because there are 34 other tribes [in what is currently Oklahoma].

Although they have not yet received the funding sought to develop a true clearinghouse, they have continued to add to the resources they have already compiled online (e.g., “American Indian Education,” 2018; “Indian Education,” 2018); Joseph explained, “We developed... an online curriculum resource committee that... requested authentic historical and cultural information from tribes, all 39 tribes. And we’ve now gotten those resources back and we’re housing that information on the Oklahoma State Department of Education website.” These resources give teachers “classroom instructional strategies, lesson plans, resources, videos, materials that really help to supplement when teachers want to address a focus on the Native presence in their classrooms, besides the two days they usually give on Thanksgiving.”

The importance of cultural relevance in tribal nation-building shows in their extensive work in developing these materials and making them accessible. Joseph and Tom do more than call for bringing (loosely-defined) culture into education. By ensuring representation from all 39 federally-recognized tribal nations in the state, they are offering resources that may be much more specific to students’ personal experiences, enabling teachers to bring more powerful connections to students’ cultures into school. Moreover, by specifically asking tribal nations to submit materials and determine what materials are showcased on the state website, Joseph and Tom honor the knowledge and wishes of tribal leaders and elevate their role in education. However, although the statewide availability of these resources is a valuable step toward cultural preservation, Joseph and Tom acknowledged that it does not guarantee that schools will use them.

Cultural sustenance through local control. One of the primary sources of cultural frictions and neglect of Native cultures in schools, Andrew highlighted, is that “tribes have... no formalized role in education at the local level. They have to be invited in to these places and these spaces, and they’re very much at the mercy of districts, of superintendents and school boards.” For example, John noted that the school board and administrators are not representative of the populations they serve--“the establishment in our district is almost 100% Caucasian,” even though a large proportion of students are Indigenous. Andrew pointed out this absurdity, “that seems so backwards to me, given all the ways that tribes have sovereignty over their people and their land; the idea that they don’t play any formal role in education is just crazy.”

No matter how much involvement a local public-school invites or allows tribes to have, however, their competing aims may never be able to be reconciled with tribal nations' aims. Moreover, even when tribes do have some role in schools, that role is likely to be limited. Andrew said one solution to the damage inflicted by Eurocentric schools on Indigenous students is "opening up the education system at the local level and allowing tribes to access and influence content, and be real partners." However, as Rodel pointed out, from the earliest records of policy in what is currently Oklahoma to the present day, integration of Native people and settlers has always been about maintenance of hegemony and assimilating Natives. Arvin, Tuck, and Morrill (2013) warn: "The project of inclusion can serve to control and absorb dissent rather than allow institutions...to be radically transformed by differing perspectives and goals" (p. 17). Both Rodel and Andrew worried that inclusion of Indigenous people on school boards or committees does not oblige institutions to cede power or prioritize tribal cultural sustenance, so even though enhanced local control is a central aim of tribal nation-building, without a fundamental reorganization of schools, power balances are unlikely to change.

Cultural congruity. Although Indigenous education leaders viewed cultural and linguistic sustenance as crucial, their visions for math education did not stop there. Participants wanted language- and cultural-sustenance to be paired with teaching that honors who students are, who their ancestors were, and how they exist in the world.

Tribal nation-building through culturally-congruent pedagogies. Joseph described culturally-congruent pedagogies as a way of combating assimilationism in schools. He named several cultural incongruities that may lead to abrasive experiences in schools. First,

Our value system promotes experiential learning. Our elders, our parents, our grandparents allow us to experience life, to try things, to do things with your hands. They don't instruct you; they don't lecture you; they show you how to do something. You watch, you learn, and then you try.

He also emphasized a holistic view of material, rather than the fragmented approach to content often used in Eurocentric schools. Joseph described Eurocentric ways of learning as linear and out of sync with Indigenous cultures. Such cultural incongruities can be amplified in mathematics, where a tendency toward stilted, lecture-based, and disconnected education on discrete topics abounds (Martin, 2009). Students are expected to adapt to these unfamiliar ways of learning, or experience failure. To address this, Joseph, Tom, and Rodel, in addition to the wealth of resources online, put together an annual summit for tribal citizens and teachers

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across the state to come together and teach and learn about culturally-responsive education, language programs, and other work being done by tribal nations, in Joseph's words, "to build awareness and understanding about how to develop culturally-responsive pedagogy." Rodel, Tom, and Joseph want schooling that honors how students learn, rather than that which asks students to assimilate into Western ways.

Tribal nation-building through culturally-congruent values.

Schooling often works directly against tribal nation-building by asking students to forsake their communities to pursue individual achievement. Joseph, addressing this said, "our value systems are different. It's a collective, community-type approach that we have, rather than the individual, competitive, succeed-at-all-costs type mentality." Although he wants to see Native students succeed, he is wary that such success often impels students to abandon communal progress. Hampton (1995) describes the "inevitable conflict between Western education and Indian education" (p. 21) on this front; many Indigenous groups prize community advancement above individual success. In this way, Western schooling practices place students in an unnecessary quandary: they must directly contradict their community's values or be labeled as unmotivated in school (see also Brayboy, 2005).

Participants shared other values of education that can seem incompatible with tribal nation-building. Although all participants mentioned a desire for Native students to have access to success on dominant measures, Joseph and Andrew also acknowledged that this goal often comes at a high cost. When I asked, "When [Native students] finish their [K–12] coursework, what do you hope that schooling will have given them?" Joseph's initial response was, "That's the conflict with high-stakes testing and accountability." He went on to outline ways in which his vision does not square with the priorities foisted upon many public schools under current policies:

I think our students...and our tribes really need to have a role in helping to guide that process, because...we want to produce tribal citizens that will return and become engaged, effective leaders based on our norms and our mooring, not on dominant society. So, we have to prepare them to be compassionate, prepare them to be intuitive, prepare them to be thoughtful, and prepare them to be active listeners. Prepare them to be sensitive to the needs of others...just being good people. We want them to have strong character. We want them to alleviate some of the hurt that's in our community. And work together to accomplish this. Get along with one another, be cooperative, and have a common vision of the social welfare that is who we are as a Native people.

With these examples, Joseph emphasized that success in dominant culture must not be traded for community values.

Tribal nation-building through culturally-congruent epistemologies. One important feature of tribal nation-building is tribal citizens' identity formation. Andrew spoke at length about the importance of honoring Native peoples' ways of doing mathematics in this regard. He said,

There are ways that our system has completely maligned and/or ignored and/or doesn't talk about the contributions and advancements of Native people in almost every aspect of modern culture. And when we frame science, when we frame math, we don't ever talk about what Native people did and have done. We focus on the contributions of Western culture, and I think that's really to the detriment of Indian kids. All of the things I learned about Native science and Native mathematics...are things I had to go out and teach myself...and even then, I've only just scratched the surface; I learn new things every day that just blow me away. And if I had known these things when I was a kid, I certainly would have grown up far more secure in my identity and secure in the idea that my culture and my people made contributions to this world. And I can also do anything I want to. I don't think Native kids grow up believing that's true.

Andrew claimed that foundational to using mathematics to build your nation is understanding how those who came before having done so and stressed how critical such an understanding can be for students' identity formation. Moreover, he added,

I also think that there's a way—even if you're not focusing on the actual contributions in a tangible way—I think you can even relate math...more abstractly to Indigenous ideas and ways of thinking that doesn't have to be like 'Oh so-and-so Indian invented this' or 'this tribe had this fancy system for their astronomical calculations'...that stuff should be taught, but there's also a deeper way of thinking about the world and connecting with the world that's embedded in our cultures and our stories that can influence, or should be influencing, the way things are taught in the classroom...There's a way to take that...Western math curriculum...and Indigenize it.

Complicating the typical teaching of ethnomathematics (and his earlier assertion), Andrew advocated that connections can reach beyond historical knowledge, into Native epistemologies and ways of knowing (see also Bang & Medin, 2010). Such forms of cultural congruity, in his view, would contribute to tribal nation-building through tribal citizen-building in powerful ways.

Cultural congruence through recruitment and retention of Native teachers. Joseph said that one important part of any plan to increase cultural congruity is developing a stream of Indigenous teachers. "We also want to promote recruitment of Native educators—new teachers, because the numbers are startlingly disparate. We lack representative numbers of Native teachers for the percentage of Native students in our

classroom.” Without Native educators, cultural congruity is a fraught challenge for schools, as non-Native teachers are often ill-equipped to provide culturally-congruent education even if they prioritize such a goal. Beyond recruitment, Joseph, Tom, John, and Andrew are also planning how to retain and support Native teachers once they enter the profession. Joseph described these plans, “And we want to develop a master-teacher program to assist those Native teachers when they are recruited, to build their capacity in the classroom through a mentorship program. So that’s part of the vision.” Through these initiatives, Joseph described how he and others are considering culturally-responsive and culturally-sustaining education along multiple dimensions, to bolster tribal nation-building.

Although Tom called recruiting and retaining Native teachers a “critically important” piece of culturally-congruent education (see also Deyhle & Swisher, 1997), participants recognized that this alone is insufficient. Facing, at best, assimilationist policies, and sometimes more explicitly damaging educational practices, John pointed out that Indigenous teachers may not be well-positioned to work against these coinciding systems. Instead, he believes culturally-sustaining and humanizing education requires interrogation of, and drastic changes in, institutions and systems, as well as thoughtful professional development. He described his plans to “prepar[e] our teachers to be comfortable with integrating the personal knowledge and culture of students into math lessons, and [to] us[e] examples students may have from their personal lives,” because many teachers have never experienced education that does so. Fenimore-Smith (2009) found that it was easy for teachers to “slide back” (p. 12) into familiar pedagogies when faced with the challenging task of creating culturally-congruent curricula and instruction. John cautioned that while he finds the work of supporting a stream of Native teachers extremely valuable, these efforts cannot stand alone; they must be paired with purposeful professional development.

Toward Sovereignty

In addition to these movements, a recent change in Oklahoma’s charter school law has given federally-recognized tribes power to authorize charter schools. Thus, a team of Indigenous leaders from several tribal nations, have launched The Sovereign Schools Project (“TEDNA,” 2018). This project aims to build and support Native-operated charter schools in what is currently Oklahoma, with goals of providing culturally-congruent education, enabling tribal nations to have greater sovereignty over their students’ education, as well as sustaining Indigenous languages and cultures. The Sovereign Schools Project is working with several

tribes as they prepare to open sovereign schools in the next few years, providing support, consultation, and networking. As they discussed these promising opportunities for tribal nation-building, participants also shared contradictions and tensions they traverse.

Sovereign schools provide opportunities for cultural and linguistic sustenance. John spoke about the promises for citizen-control of their nation-building that led him to align himself with The Sovereign Schools Project. He had been working with a local public school, where he said he began “to think deeply about what it is that we are doing for our Native students.” He asked himself, “What are we doing to honor their culture, their history, their traditions, their life? What are we doing to appreciate the folks that we work with, not only our students but also their families?” These questions led him to conversation with other Native people he knew in education, and they began to think about other models of education. He described these conversations as “a journey of discovery to look through the lens of a community member, [think about] the community-led school design process... and really discover what was possible.” He said that he, and most educators, enter the work with ideas about what the community might need, but these conversations helped push him to think about what it means to “truly honor what people in the community said, and what they wanted for their children.” He saw that tribal nation-building must be driven by citizens of the tribal nation.

Andrew also saw local control as a core part of The Sovereign Schools Project’s power. He acknowledged larger policies that play a role in the projects of tribal nation-building, but pointed out that these cannot stand alone:

There are big policies, statewide prescriptions; but, I also think...some of this is very local, and local circumstances are going to dictate and make emergent the prescription and the response to the problems on the ground. And so, the problems that are going on in Oklahoma are not the same as the problems going on in South Dakota ... We have to be ready and willing and flexible to encourage communities to find solutions for themselves; but, before they can do that, they have to be given access.

Andrew spoke of the hope he has for this project to offer “tribes and tribal communities an option and an opportunity that they’ve never had before.” As he pointed out previously, however, simply being invited in to have some role in a local school system is insufficient. This is one reason Andrew believes so strongly in The Sovereign Schools Project—as charter school authorizers, “tribes determine...the performance framework that governs the school. So if the tribe, as the charter school authorizer, sets the performance framework, they get to set everything the school works toward.”

Andrew cautioned, however, that local control does not solve every

obstacle. He pointed out that tribes may not have the funds or capacity at a given moment to operate a school. Therefore, he did not present charter school authorization as a panacea or an answer for all problems facing Indigenous students. Moreover, local control may be especially challenging in what is currently Oklahoma, with what John described as “such a decentralized population of Native peoples and a diffused culture, I would say.” At the same time as he underscored the need for ownership on the part of tribes in education, he said this project is also “providing an example to [other] tribes of what’s possible.” Indigenous leaders are working to build tribes’ capacities to oversee schools, and they hope it can be an option for those nations that have the drive, conditions, and labor force to take it on.

Sovereign schools can explicitly support tribal nation-building.

Mathematics is a useful lens for seeing some of the ways that sovereign schools might support tribal nation-building. As a former math teacher, John was interested in how sovereign schools offer opportunities for “integrating quandaries or decisions that Native people might come across in their daily lives” into math lessons. As he prepares to work in a sovereign elementary school, what is immediately on his mind, as a starting point, is “the ways that we use examples or story problems and the ways in which we pose questions in mathematics” to draw on students’ funds of knowledge (Moll, 1992). However, John suggested reaching deeper into the community to find culturally-relevant problems of the community that math or science could address (see also Gutiérrez, 2002; San Pedro, 2017). He proposed “having students and their families be part of these curricular committees—you know, older students—so if it’s something for elementary, maybe having middle and high school students shedding some light and then parents as well being part of that.” He later returned to this idea:

I hope and aim to create experiences to bring to life the idea of community connections—so in what ways do we, in math, integrate all the components that are necessary to be an engaged citizen? To what extent do we integrate service as relates to identifying problems in your community and working together with your neighbors and your friends to impact change? . . . Identifying problems—identifying opportunities, actually—that could better the lives of your neighbors? To what extent do we create opportunities for students to engage and understand how important that can be?

John’s description carries several possibilities for mathematics as an instrument for tribal nation-building. The first possibility comes from what I have called *intergenerationality*, or the ways Native people might harness the collective wisdom of community members in schools, using mathematics to solve obstacles faced by the tribal nation. As I coded

data, this analytic label, intergenerationality, was one that I used to capture a salient feature of John's vision: that multiple generations of community members' involvement in curriculum development could support a robust mathematics learning program with authentic and important ties to community work. Not only would this inclusion of local families enhance the cultural connectedness of curricula, but it would give middle- and high-school students a chance to strengthen their understanding of connections between math, science, and nation-building as well. John's vision also evokes what Gutiérrez (2002) calls *critical mathematics*, which "takes students' cultural identities and builds mathematics around them in such ways that doing mathematics necessarily takes up social and political issues in society" (p. 151). This type of mathematics education, rather than solely employing math as a tool to analyze the world, emphasizes math as a tool to challenge and change the world and existing power structures that hamper tribal nation-building.

Sovereign Schools can support nation-building through citizen-strengthening. Andrew, John, and Tom hope that The Sovereign Schools Project will support tribal nation-building endeavors by strengthening tribal citizens. Andrew said that in the next year he will be consulting with the Pawnee and Comanche Nations, which are both poised to authorize schools, and "we're going to spend a bunch of time talking about what we want...[I'll ask] What things do you care about and what results do you want to see?" Andrew said he would frame school development with tribal council members by asking, "What experience—or what kind of school makes an excellent citizen of Comanche Nation? Right? Because the whole point of...education is to educate citizenry to sustain your nation, your people, right?" In his view, these are questions no one but tribal leaders can answer.

The way I would frame it for tribal leaders is: you need to authorize and build schools that are going to build excellent citizens. And I don't know what that is for you, but I'm sure if you thought about it, you could articulate what an excellent Comanche Nation citizen does and is. And you want to build an education system with that as its foundation for quality.

Andrew theorized that in their role as authorizer, tribal nations have greater power to "drive the behavior" of school leaders. Further, with these questions, Andrew highlighted ways in which these sovereign schools may be vital tools for tribal nation-building—for tribal nations to "strengthen themselves and their people" (Brayboy et al., 2014, p. 579).

Sovereign schools can support language sustenance. Indigenous leaders also hope sovereign schools will provide increased opportunities

for language revitalization. Rather than having to advocate to a local school board for language programs, sovereign schools will give tribal nations the power to write such programs into their charters. However, Andrew admitted that because of the nature of tribal citizen dispersion in what is currently Oklahoma, each student in a sovereign school may not have access to their own heritage language, but he hopes that “they will have the option to participate in some Indigenous language...Logistically it’s hard to say we’re going to get all 39 languages in Oklahoma under the same roof...[but] we could offer some options.” Considering that few public schools offer Indigenous language programs, even after Joseph and Tom worked to change the requirements, it is likely that tribally-authorized schools will increase the number of such programs. Such school-based language programs are important for tribal nation-building because they begin to turn a primary tool of colonization into a tool for cultural revitalization.

Sovereign schools can provide cultural congruity. Andrew called out the cultural incongruity that often exists between charter schools’ values and tribal nations’ values, saying, “I totally understand why there are lots of brown communities that don’t trust charter schools. I understand why the NAACP has that stance on charter schools” (see Board of Directors, 2015). I get that. And in a lot of ways, I totally agree with it...[however,] most schools...are a phenomenally colonizing force in communities.” John cited several reasons that charter schools may hold a greater potential for damage to communities: there is often less oversight from the community (Buchanan & Fox, 2004) and freedom from regulations that apply to public schools (Fox, Buchanan, Eckes, & Basford, 2012; National Commission on Excellence in Education, 1983), and parents may place greater trust in schools that have national reputations, especially those that promote economic opportunity via entry into top colleges. Although some contend that charter schools may allow more potential to harm than traditional public schools, Andrew, John, and Tom also pointed out that they simultaneously hold greater promise for self-determination and cultural sustenance for tribal nations. John said as charter authorizers, tribes hope to hold the power to guard against damaging practices, using the charter authorization to sustain and nourish their nations’ people and cultures.

While participants noted this potential for charter authorization to enable tribes to have more control of their students’ education, and to provide culturally sustaining education, Andrew acknowledged ways in which charter schools have been used against minoritized groups, and Indigenous communities in particular. He expanded on his desire for students to remain in or return to the community, and his concern about the potential for schools to encourage the opposite:

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I've been to charter schools—especially some no-excuses charter schools—you know, run by white people in minority communities that put a strong emphasis on leaving the community and [they] drill it into the kids, like 'This community isn't good enough for you.' Like, 'You can do so much better than here.' And that—that blows me away. Like, no; you have this backwards! The strength of these kids and these families is in this community already! It's here!

When a tribal nation, by contrast, authorizes and oversees the charter school, a very different message can be communicated. Tribal nation-building can become the overarching priority of schooling, offering greater congruity between tribes' values and schools' values.

Cultural congruity through shared values. Participants repeatedly returned to the competing goals of preparing students for universities and resisting assimilation. John confirmed the importance of students' being "academically prepared to do anything they wish to do." However, he stressed that while some may aim for college, he is wary of these aims being imposed on students: "I hope that they will have the opportunity to accomplish whatever they set their mind to." Andrew also stipulated that the school system that leads to an "excellent" tribal nation citizen is not necessarily that which increases the number of students attending top colleges. He elaborated,

I don't necessarily believe that the best system is the system that gives your kids greater access to mainstream institutions. I think there are some tribes for whom mainstream institutions are going to make a lot of sense because of what the tribe's priorities and needs are, but I don't want tribes to be stuck in the mindset that all of our kids have to go to the best colleges every time or they're failures. Because in my experience, what happens when you send your students to the best schools is they don't come back. And that's the experience of a lot of tribes. And so, you have to be building something that your kids are going to want to come back and run. That should be the goal. That should be what you aspire towards.

Continuing this caution against using Western, dominant measures such as test scores or college attainment as criteria for success, Andrew said, "I have not been to a lot of charter schools that are deemed 'excellent' by a whole lot of people that aren't *very* colonizing forces in their communities." He does not say these schools are *necessarily* colonizing forces; but, in his experience, the pursuit of Western notions of "excellence" supersedes culturally-conscious practices, even when attempting to uphold anti-assimilationist values. Andrew continued, "My critique of the system is that, by and large, the schools that we uphold as avatars of quality and progress in the school reform movement are not great places for children." Thus, although some nations' leaders may prize dominant notions of success, Andrew held that tribes' other images of good schooling are often in competition with these, and that mainstream

ideals of excellence should be interrogated, always with an eye toward their effects on students and communities.

Limits on sovereignty. Some participants spoke about the paradox that tribally-authorized charter schools may provide a step toward self-determination, but still face limits imposed by federal legislation. One example is that sovereign schools must still comply with state testing regimes. Andrew acknowledged this, saying, “charter schools have to do those tests, too, but it’s just the test. Everything else about the schools is—the tribe is free to set their own standards.” Although Andrew is hopeful for greater autonomy through this project, the reality of federal laws and the ways in which funding can be tied to standardized tests means that schools may have less freedom than they hope; testing requirements tend to erode the educational self-determination of tribes (Buchanan & Fox, 2004; McCarty & Lee, 2014).

Furthermore, the state’s power in changing charter school legislation represents an inversion of authority. Federally-recognized tribal nations are sovereign entities, with a government-to-government relationship with the United States, not with individual states. Thus, state governments should not be in the position of granting permission to tribal nations to authorize schools, yet the federal government has deferred to states to exercise this power, subverting the sovereignty of tribal nations yet again (Castagno & Brayboy, 2008; Ewing & Ferrick, 2012). Limits like these belie the support the U.S. claims it has for tribal nation-building.

Future hopes for sovereign schools. Participants working with The Sovereign Schools Project (“TEDNA,” 2018) point to broader hopes for their work. Andrew said,

Maybe, if we’re successful, we can start a conversation with other ed reformers and point out that there’s a different way to do this work, that doesn’t involve destroying the cultural connections that hold communities together...there’s a way to do this and make it rigorous, and give people lots of options, and it doesn’t have to be that tone...of ‘you can’t be yourself here.’

Andrew’s statement shows the hope he and his colleagues hold for sovereign schools’ reach beyond tribal nation-building. They plan to launch a new organization next year to support the schools that tribes are authorizing, providing professional development and support for culturally-relevant curricula. In the spirit of Hampton’s (1995) theory of Indian education, they hope that their efforts will benefit other minoritized children in addition to the citizens of their nations.

Discussion and Conclusions

The findings presented here illuminate nuances of Native education. There are no simple prescriptions, and along every solution pathway, challenges and complications arise. Nevertheless, Indigenous peoples in what is currently Oklahoma and across what is currently the U.S. have persistently adapted their strategies to meet the demands of the moment.

To understand how Indigenous education might move toward cultural sustenance, we need a fuller view of ways that schooling functions in oppressive systems and works to erode cultural ties, especially in subjects like mathematics and science which have been largely overlooked in such efforts (cf. Bang & Medin, 2010; Medin & Bang, 2014), and are often treated as culturally- and race-neutral (Bishop, 1990; Ukpokodu, 2011). In this article, Indigenous education leaders have provided important perspectives, illuminating ways in which the absence of Indigenous peoples' math in the curricula can impact students, as in Andrew's case, as well as the ways common pedagogical practices in math education work against students' cultural values, as in Joseph's narrative. Moreover, this study highlights Native education leaders' sensemaking as they work toward anti-oppressive mathematics education (see also Kumashiro, 2001). Moving beyond pan-Indian ideas about cultural relevance, Joseph, Andrew, and John called for an increased and formal role for local tribes in developing curricula, visions, and aims for mathematics education. Data reveal the importance of cultural congruity in mathematics education; this includes honoring Indigenous epistemologies, attending to cultural harmony in pedagogies, and utilizing holistic conceptions of mathematics. It also entails an explicitly anti-assimilatory stance that includes honoring community values and vitality over individual achievement, but looks beyond the examples named here, to push toward critical interrogation of all components of math education that may implicitly ask students to suppress parts of who they are.

Furthermore, the data reveal how Native education leaders envision mathematics education expressly as a tool to support tribal nation-building. Andrew and John imagined integrating local dilemmas that communities face into math curricula in charter schools that are authorized and directed by tribal nations. Supporting community and intergenerational involvement in identifying problems and opportunities "that could better the lives of your neighbors" holds power to reinforce tribal nation-building efforts by focusing students' mathematical thinking on tribal nations' issues, harnessing wisdom from the local community, melding service and education, and honoring the priorities, work, and

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values of students' own tribal nations. In brief, findings direct us to local communities for guidance, illustrating immense promise and opening new possibilities for self-determination and tribal nation-building with mathematics education as a core component.

As participants' narratives revealed, providing cultural and linguistic sustenance, cultural congruity, and self-determination are important pieces of tribal nation-building, but participants also illuminated paradoxes of these efforts. While participants described how tribal nations, as charter school authorizers, may have greater power to forge deeper connections between traditional stories, culturally-resonant ways of learning and knowing, and mathematics education, local control does not guarantee these connections. In what is currently Oklahoma, providing culturally-appropriate education is a particularly challenging endeavor because of the dispersion of tribal citizens. There can be remarkable variation even within a tribal nation in what citizens view as significant elements of a tribe's culture; when schools serve multiple tribal nations, this challenge is substantial. Despite these cautions, Indigenous education leaders in what is currently Oklahoma have devised multiple strategic efforts to strengthen tribal nations through education in the current policy landscape and will surely continue to adapt these as new hurdles arise. As Tom reminded us, "the Native spirit has endured."

Finally, this analysis offers important implications for the field of education as the charter school movement grows. Andrew referenced the NAACP's stance in opposition to charter schools (see Board of Directors, 2015); this statement encapsulates the experiences of many minoritized communities, such as that charter schools' freedom from accountability to school boards, tendency to exacerbate segregation patterns, diversion of funds from public schools, and expulsion of students can operate in oppressive ways. However, tribal nations' use of charter authorization may offer greater liberatory promise than options currently available to them through the traditional public-school system, and in the case of cultural preservation, some tribal nations may desire ethnocentricity in schools. This issue highlights the importance of looking across minoritized communities, and not basing stances or recommendations on one community's experience. These data highlight complexities, perils, promises, and paradoxes that Indigenous education leaders navigate as they work toward tribal nation-building, and provide a timely contribution to current debates.

One of my favorite sayings...[is] "it's better to light one candle than to curse the darkness." So we light one candle at a time to support the journey of our Native students.

—Joseph (Khoiye)

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Note

¹ Following Professor Damien Lee, I use the phrase “in what is currently” Oklahoma rather than “what is now” Oklahoma, in order to “open possibilities for imagining futurities beyond the settler state” (damienlee, 2018; see also Lee, 2017).

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