

FOREGROUNDING BLACK AFRICAN IMMIGRANTS IN MATHEMATICS EDUCATION RESEARCH

*LOS INMIGRANTES NEGROS AFRICANOS EN PRIMER PLANO EN LA INVESTIGACIÓN
SOBRE EDUCACIÓN MATEMÁTICA*

*DAR DESTAQUE AOS IMIGRANTES NEGROS AFRICANOS NA INVESTIGAÇÃO SOBRE
EDUCAÇÃO MATEMÁTICA*

Oyemolade Osibodu
(York University, Canada)
mosibodu@yorku.ca

Kwesi Yaro
(University of Alberta, Canada)
kyaro@ualberta.ca

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ABSTRACT

Generally, research with Black youth/population in mathematics education have largely focused on their mathematics experiences in the context of United States with a special focus on issues of race/racism, equity, and social justice. While these studies are important and have informed our understanding of the schooling experiences of Black youth, there is a dearth of research with specificity on the mathematics learning experiences of Black African immigrant youth. In this paper, using duoethnography, we analyze our previous projects with Black African immigrant youth/families to argue for more nuances in the theoretical and methodological lenses when engaging with this population.

Keywords: mathematics education. African immigrants. black youth. African indigenous knowledge.

RESUMEN

Por lo general, la investigación sobre la educación matemática de los jóvenes y la población negra se ha centrado en gran medida en sus experiencias matemáticas en el contexto de Estados Unidos, con especial atención a las cuestiones de raza/racismo, equidad y justicia social. Si bien estos estudios son importantes y han contribuido a nuestra comprensión de las experiencias de escolarización de los jóvenes negros, hay una escasez de investigaciones específicas sobre las experiencias de aprendizaje de las matemáticas de los jóvenes inmigrantes negros africanos. En este artículo, utilizando la duoetnografía, analizamos nuestros proyectos anteriores con jóvenes y familias inmigrantes negroafricanos para abogar por más matices en las lentes teóricas y metodológicas a la hora de trabajar con esta población.

Palabras clave: educación matemática. inmigrantes africanos. juventud negra. conocimiento indígena africano.

RESUMO

De um modo geral, a investigação sobre a juventude/população negra no domínio da educação matemática tem-se centrado, em grande medida, nas suas experiências matemáticas no contexto dos Estados Unidos, com especial incidência em questões de raça/racismo, equidade e justiça social. Embora estes estudos sejam importantes e tenham contribuído para a nossa compreensão das experiências de escolarização dos jovens negros, existe uma escassez de investigação específica sobre as experiências de aprendizagem da matemática dos jovens imigrantes negros africanos. Neste artigo, recorrendo à duoetnografia, analisamos os nossos projectos anteriores com jovens/famílias imigrantes negro-africanos para defender mais nuances nas lentes teóricas e metodológicas quando nos envolvemos com esta população.

Palavras-chave: educação matemática. imigrantes africanos. juventude negra. conhecimento indígena africano.

Introduction

Our relationship as emerging scholars stems from our common interest in researching with African immigrant populations in the context of mathematics education. We both draw on African centred perspectives in pursuing our research agenda. Specifically, Kwesi's work draws on Afrocentric perspectives characterised by Ubuntu philosophy to investigate and understand the role continental and diasporic African parents play in their children's mathematics learning. Molade's work, drawn from a decolonial perspective, seeks to disrupt inequities and disentangling coloniality in mathematics. In this paper, we draw on our respective research projects to offer both theoretical and methodological lenses inspired by African centred/Indigenous worldviews in researching African immigrants' mathematics learning experiences in Canada.

Generally, research with Black youth/population in the context of mathematics education have largely focused on mathematics experiences of Black youth in the United States with a special focus on issues of race/racism, equity, and social justice (e.g., Bullock, 2018; Gholson & Wilkes, 2017; Martin, 2012). While these studies are important and have informed our understanding of the schooling experiences of Black youth, there appears to be a dearth of research with specificity on the mathematics learning experiences of Black African immigrant youth.

In this paper, we use duoethnography (Norris, 2017) as a methodology to account and reflect on our previous projects with Black African immigrant youth and families to argue for more nuances in the theoretical and methodological lenses when engaging with this population. We begin first by describing the positioning of Black youth in Canada and then share our own experiences of being Black, immigrants, and Africans in North America. Through excerpts from our respective projects, we end by exploring African Indigenous Knowledges as a plausible theoretical and methodological lens for understanding mathematics learning experiences of African immigrants in Canada.

Duoethnography as Methodology

We frame this paper as a duoethnographic encounter between two mathematics education researchers who have interest in working with African immigrant youth/families. Duoethnographies "encourage educators and learners to undertake an autobiographical examination of themselves, using the researcher as the research site" (Rose & Montakantiwong, 2018, p. 91). According to Norris (2017), duoethnographies study how two or more individuals give similar and different meanings to a common

phenomenon. The confluence of our work lies with the population we work with, African immigrants. However, our methodological experiences working with this population are not the same. To this end, our personal experiences as researchers working with the African immigrant population constitutes the site and data for this paper in interrogating our theoretical and methodological approaches. To personalise our experiences, we use first person (I) to express our individual experiences while we use (we) to refer to our collective experiences as researchers.

Positioning Black/African Youth in the Canadian Education System

Currently, out of about 300 school boards across Canada, except for Toronto District School Board (TDSB), no school board collects race-based data. By not collecting data on race and other important socio-economic demographic factors of students, we fail to address systemic barriers to success in our educational system. Data from the TDSB provides a glimpse into some disparities that exist in our educational systems for racialized communities such as ¹Black youth. For instance, there has been growing concern about the opportunity to learn gaps that exist among Black students in terms of their successful completion of high school and the academic level of study in which students are enrolled in within Toronto District School Board. Between 2006-2011 for example, only 53% of Black students were placed in academic courses as compared to 81% and 80% for white students and other racialized groups, while Black students constituted 39% and 9% placed in applied and essentials respectively (James, & Turner, 2017). Academic courses are the most academically challenging and are required for University Preparation courses taken in Grades 11 and 12; applied courses are meant to prepare students for college in grade 11 and 12; and essentials help students to meet the basic credit requirements for high school graduation and prepares students to secure menial jobs but unable to enrol in college or university (James & Turner, 2017). According to a study conducted by People for Education (2014), students in Essential English and math classes were less likely to: meet the provincial standards on math and reading tests; graduate high school; and attend post-secondary education. The study also found that schools with more Applied and essential classes are attended by students from families with much lower incomes, predominantly Black students (Parekh, 2013). In most cases, test scores and other standardized measures are used as evidence of students' ability, skill level, and knowledge of educational material. In most cases, Black African immigrants students fall victim to being labelled as academically weak (James & Turner, 2017). Having a quantified race-based data will help expose the disparities in the educational sector, however, in most cases, race-based data are used as a basis for comparing Black students to their white counterparts. Such "race-comparative approach could have deleterious effects of helping to position Black children at the bottom of a racial hierarchy of mathematics ability" (Martin, 2012, p. 49).

As scholars, we believe there is a dire need for research that moves beyond racial comparative analysis of students' achievements. Hence our work as researchers in Canada focus on paying greater attention to the lived experiences of Black youth to expose the institutional and structural barriers inside and outside of school including issues of racial inequity while also documenting their resilience within the Canadian school system as Black mathematics learners (e.g., Gholson & Wilkes, 2017; Martin, 2012). In the context of the two provinces where we live and work (Alberta and Ontario), there has been an increase in immigrant population especially from Sub-Saharan Africa (SSA) countries. For instance, Statistics Canada (2019) identified Alberta province as having the fastest growing Black population with growth from 39,955 in 1996 to 174,655 in 2016. Similarly, Ontario is home to about 52.2% (Statistics Canada, 2019) of the Black population in Canada with most immigrants coming from SSA countries. Such growth in the Black immigrant population in these provinces indicates the urgency in educational research relating to SSA Africa immigrants. In our work, we are interested in interrogating how African Indigenous worldviews might help us better interpret SSA immigrant youth/family experiences of mathematics, in and out of school settings.

¹ The data from Toronto School District School Board does separate diverse Black population (e.g., Caribbean, Sub-Saharan African immigrants etc). The data reference Black population to include all people who self-identify as Black. This includes landed immigrants/permanent residents and Canadian citizens by naturalization (James, 2017).

Being Black, Immigrant, and African in Mathematics Education: Living in the in-between

In this section, we discuss our experiences of emigrating to North America, specifically the United States and Canada. We ground our conversations around being Black, Immigrant, and African in mathematics education. We end by discussing how these experiences influenced our doctoral research projects.

Molade's Experience Living the In-Between

I am a Nigerian mathematics educator who is also a recent immigrant living and working in Canada. As a scholar whose work). I moved to the United States in 2002 to begin my undergraduate degree in Computer Engineering. I chose an Engineering major because I loved mathematics and knew that a career in teaching was not open for me. Teaching is not a career one aspires to in Nigeria leaving me with two other career paths: either become a doctor or an engineer. My young 15-year-old mind loved numbers more than I loved words, so engineering seemed like a no-brainer. When I began my undergraduate degree, despite being accepted into the electrical engineering program, I was initially enrolled in a college algebra course instead of calculus I. I was told that it was a more appropriate course for me, but I advocated for myself and was placed into calculus I. I learned how much I loathed computer programming but loved my mathematics courses and thus wanted to switch my major to mathematical sciences. My parents completely disapproved and threatened to send me back to Nigeria. My only option was to switch to electrical engineering and double major in mathematical sciences. A few years later, I earned a master's degree in applied mathematics and then relocated to Johannesburg, South Africa to become a high school mathematics teacher at a diverse school filled with students from across the African continent. While there, I contemplated on the role mathematics played in effecting positive social change. This question lingered with me throughout my doctoral studies, specifically in my doctoral dissertation which I will speak about in subsequent sections. In my undergraduate and graduate degrees, I noticed how few Black students were in my courses. I also recognized even fewer numbers of Black and female students in my courses.

Kwesi's Experience Living the In-Between

I was born and raised in Ghana, West Africa and now living and working in Alberta, Canada. Similar to Molade, my decision to join the teaching force was also partly driven by the labour market landscape at the time. Mathematics teachers were high in demand. I graduated with a first degree in mathematics/education and accepted a job post in a public high school. Six years into my career as a math teacher, I began to reflect and question my own pedagogy and the exam driven school curriculum that I worked which I thought was devoid of context. I began to ponder on ways I could connect mathematics to children's experiences (funds of knowledge), and how communities and families might shape children's mathematics learning experience in and out of school. Becoming a professional educator involves our unique interaction between our past and present. My questioning led me to pursue graduate studies in Canada; first for master's degree and later for a PhD. My experience as an international graduate student in Canada could best be described with Giroux's (2005) metaphor of border crossing. Giroux posits that beyond crossing physical borders, immigrants encounter cultural borders, wherein social codes, experiences, and language differ. As an international student from Ghana, it was not only about the change in physical space (being in a new country), but it was also about navigating oppositional cultural and linguistic boundaries to ensure I thrive in the new context (Canada) (Raisinghani, & Yaro, 2021). Some of these cultural boundaries include teaching pedagogies used in graduate school and what knowledge is valorised in this new context. Until my third year in my PhD when I was studying for my comprehensive exams, I had always doubted my own cultural knowledge (AIK or Afrocentricity) as a frame of reference both in classroom discourse and in scholarship. My encounter with literature on AIK and Afrocentricity was the turning point in my scholarship as a graduate student and now as an emerging scholar. Perhaps, exposing me earlier to different (non-western) theories would have offered me more possibilities to conceptualise and develop my understanding of my research.

Dialoguing Across - Analysis

Molade and Kwesi's journey matters for a variety of reasons. It sheds light on barriers to advanced mathematics course enrolment, nuancing African immigrants STEM interests, becoming "Black" in mathematics/STEM, African immigrants in teacher education, and experiencing racialization as a mathematics tutor and student. The most prominent is to challenge the narrative of the "model immigrant" which tends to cite Africans (Nigerians in particular) as being very successful in receiving countries (Ukpokodu, 2018). This adds a different dimension to the success narrative of African immigrants as we elucidate barriers many African immigrants encounter in the host country in quest for better education. That is, when the quest for success is largely tied to parental wishes and parental pressures.

While there are frequent headlines around success narratives of African immigrants, there is scant research of African immigrant experiences in K-12 schools and even fewer focused on their mathematics experiences particularly at the secondary level. Ukpokodu's (2018) research examining the academic achievement of African immigrant students (AIS) found no substantial evidence to the "model minority claim" in U.S. K-12 schooling. She further asserted that the African immigrant youth are not a monolithic group. For example, experiences of voluntary and involuntary immigrants would necessarily be different and will have implications for the ways they navigate the education system. In addition, Ukpokodu (2018) indicated that the "model minority" label "carries the implication that AIS can easily negotiate the school system and achieve high-level academic success" (p. 84) leading to little support from schools.

In Ihejirika and colleagues (2020) scoping review of scholarship conducted in Canada focused on SSA immigrants, of the 48 articles that fit the criteria, we note that only one (Schroeter & James, 2015) was centred in an educational context. Schroeter & James's (2015) research explored the experiences of nine students in a specialized program offered at a French school. Of the nine students, six were Black African-born students with refugee backgrounds. Their study revealed the ways this specialized program was a form of streaming for these students. Further, the needs of these students were dismissed because their experiences were conflated with students who are disengaged.

Other studies with African immigrant students have largely focused on those in postsecondary contexts (Wilson-Forsberg et al., 2020), issues related to language and literacy (Kiramba et al., 2020), and racial socialization (Mwangi, 2014). In Wilson-Forsberg and colleagues (2020) for example, we note how the young African men in the study reflecting on their high school education were discouraged from taking academic mathematics (the top level in mathematics in Ontario) in grade 11. A participant in the study, Mohammad shared, "They did the same thing to me when I wanted to take academic math in grade 11. They told me I wouldn't pass it and that I should stick to applied math or data management" (p. 700). Mohammed's comment resonates with Molade's undergraduate mathematics learning experience in the United States. While these experiences are worth sharing, as scholars with strong roots in SSA, we wonder how we might use AIK as both a theoretical and methodological lens to better understand mathematics schooling experiences of African immigrant youth in Canada.

Centering African Indigenous Knowledges in Mathematics Education Research

Problems related to education are culturally and place specific hence it is important that interpretative work draws on culture-centric perspectives both theoretically and methodologically. Patel (2016) challenged, "many theories can be used to explain experiences and data, but they do not do so equally" (p. 60). All theories and methodologies draw on a particular lens that are consequential in guiding how one designs and interprets the data generated in the research. James (2017) argued that taking a specific cultural stance provides insights into the complexities of peoples' lives in a given context. Indeed, our previous works indicate that SSA immigrants' mathematics experiences are (re)shaped by their African centred worldviews and values (Osibodu, 2020; Yaro, 2021). To this end, our work with the African immigrant population draws largely on African Indigenous Knowledges (AIK) as we use this as both a

theoretical and methodological lens to investigate mathematics learning and participation experiences of African immigrant youth and their parents in the Canadian/US contexts.

AIK refers to the traditional norms, social values, and mental constructs that guide, organize, and shape African ways of living in making sense of the world (Chilisa, 2020). These worldviews are clearly distinct regarding their unique African cultural and historical traits. Asante (1990) used the term Afrocentricity to describe hosts of AIK such as beliefs, and philosophies that guide inquiry and analysis. In this section, we focus on describing the major tenets of AIK by drawing on aspects of our work to elucidate theoretical and methodological applications.

What characterises AIK can be articulated in axiological terms. Axiologically, AIK in research takes into consideration values and ethics in search for truth and advancement of knowledge. In the context of an AIK paradigm, questions of axiology interrogate the African values, which one holds and applies throughout the research processes. AIK is deeply entrenched in interdependence and interconnectedness of all things, and this translates to the social lives of African people. The individual is a non-existent being without the community or the collective society. In other words, within the African value system, communalism prevails as opposed to individualism. The most common maxim which characterises this axiological system is “Ubuntu” (a Zulu word) which translates; “I am because you are: You are because I am”. Specifically, Ubuntu is a traditional African philosophy, defined as communicating, caring, and sharing with humans in harmony with all of creation. Tutu (2000) argues that it is about the essence of being human; it is part of the gift that Africa will give the world. It embraces hospitality, caring about others, being willing to go the extra mile for the sake of another. Without essentializing Africa as a continent, it is worth to indicate that the philosophical thought and meaning of Ubuntu transcends where it originated (Zulu – South Africa). For instance, in Ghana, Ubuntu could mean **Nkonsonkonson** (a "chain link" as in Adinkra symbol – a traditional symbol from the Akan tribe in Ghana) which literally means unity and human relations. Again, the concept of **Ebi** in Yoruba (Ethnic group from Southwestern Nigeria), articulates the philosophical thought of Ubuntu and is well expressed in many African proverbs across the continent. Ubuntu as a philosophical thought has many implications for research with the African immigrant population but here, we will only focus on a few in relation to our research.

Diasporic and Continental African families support for children’s mathematics learning – Kwesi’s project

I (Kwesi) worked on “African immigrant support for children’s mathematics learning” (Yaro, 2021). In this study I employed the concept of cultural capital framework and Afrocentric worldviews to understand the experiences of African immigrant parents in supporting their children’s mathematics learning at the upper elementary and middle grade levels (Grades 4 - 8) in Canada. Prominent among the findings of this study is the manifestations of African value orientation of oneness and communalism (Ubuntu) in parents’ participation in their children’s mathematics learning. For instance, African immigrant parents in the study were aware of the gatekeeping function of mathematics and its role in reproducing or disrupting race or class hierarchies hence they leveraged on various social networks and sense of community through frequent meetings to discuss issues relating to their children’s learning broadly, and collaboratively offer mathematics support to each other’s child. This sense of community support is an indicator of African value orientation of communalism (Ubuntu), succeeding together. Viewing parents’ participation in children’s mathematics learning through an Afrocentric lens allows me to see ways in which the African value system shapes these immigrant parents' involvement practices in Canada. Similar findings were reported in my study with parents with low formal education in rural Ghana (Yaro, 2015) and African immigrant families in Canada (Yaro, 2021)

Again, the spirit of communalism (Ubuntu) among these participants shaped my understanding of the concept of family as going beyond the nuclear to include extended members (uncle, aunt, nephews, niece, nannies, grandparents, elders in the community, etc.). Furthermore, the sense of communalism from the AIK lens translates to Africans’ participation in a research process as subjects and human agents rather than objects (Mkabela, 2005). Methodologically, participatory work should be built on trusted

relationship building with collaborative partners and individuals within the African immigrant community and these actors should be integral part of every stage of the research process, from planning to dissemination of the research findings; hence community members must be the final authority in determining what is true and therefore the final arbiter of the validity of the research about their experiences (Reviere, 2001). This will require building trusted relationships with the African immigrant communities. For instance, my ongoing collaborative work with Edmonton Mennonite Center for Newcomers (EMCN) espouses the role of community, relationship building and cultural immersion in research with African immigrants. In this research I am interested in African immigrant families' (parents & children) mathematics learning experiences in the Canadian context. Thus far, I have spent about 16 months building relationships with African immigrant communities in Edmonton through attending cultural gatherings and volunteering activities with immigrant community centres. Such a relationship is key to understanding the community I research to ensure that I am culturally and socially immersed as opposed to scientific distance (Asante, 1990). Such immersion will enable me to have a fuller grasp of the ethical and moral sense of judgements pertaining to the researched community.

Critical Mathematics Education with SSA Youth - Molade's Project

I (Molade) highlight a prior project where I engaged in with five Sub-Saharan African (SSA) youth where we explored critical mathematics education to unpack how they envisioned a social justice focus on mathematics education (see Osibodu, 2020). Guiding this project were theoretical and methodological approaches that allowed for AIK to flourish. Decolonial theory, particularly from the work of Zimbabwean decolonial theorist Sabelo Ndlovu-Gatsheni was particularly instrumental. For Ndlovu-Gatsheni (2015), decolonial theory disrupts the impact of coloniality within the spheres of power, knowledge, and being.

Decolonizing methodologies build from decolonial theories as an approach to engage in research that centers the worldviews of the colonized Other and that is relational (Chilisa, 2020; Patel, 2016; Smith, 1999; Wilson, 2008). In other words, decolonizing methodologies shifts from a western way of conducting research by foregrounding and elevating multiple knowledges. Building from decolonial theory and decolonial methodologies, I drew on Ubuntu, Sankofa, and Fela-Anikulapo Music (FAM) methodology (FAM). Ubuntu (Tutu, 2000) is a Southern African philosophy emphasizing that I am because we are. Sankofa (Dei, 2012) is from the Twi people in Ghana and asserts, that we must look into our past before reflecting on the future. Lastly, I coined FAM from the late Nigerian artist Fela Anikulapo-Kuti's music which I theorised as embedding three facets including co-learning, disruption, and joy (Osibodu, 2022).

In the project, we co-learned, reflected on prior experiences and prehistoric African education, become consciously aware of multiple ways of knowing, valued these multiple ways of knowing, disrupted power within colonial discourses, and exhibited joy in the process. Youth showed how, through looking at cultural artifacts and reflecting on prior experiences, we were able to value Indigenous [mathematics] knowledge. Moreover, there was an assertion that if young children are given the opportunity to see the multiplicity of knowledges within their communities, perhaps they will enter formal mathematics spaces with more confidence and belief in their abilities. In the process, we also disrupted colonial discourses that led to deep insights into multiple ways of knowing. These included African Indigenous knowledges, elder knowledge, and embodied knowledges typically absent in western education. This then led to valuing these multiple ways of knowing even in the context of mathematics as was evident in the social issue exploration around traditional and manufactured medicines.

Conclusion

We end by turning to an African elder Dei (1994) who remarks that African youth “need to be active generators of their own knowledge...[through] a language of possibility” (p. 19). This language of possibility includes a search for “self-rule, self-regeneration, self-understanding, self-definition, self-

knowing, and self-articulation of African issues after centuries of domination and silencing” (Ndlovu-Gatsheni, 2018, p. 26). Essentially, it is important that African youth be given the space and opportunity to discuss social issues from their own experiences. However, we have learned from our previous works that experiences of African immigrants are not detached from their socio-cultural contexts and worldviews as African people living in the diaspora. Therefore, we find it imperative to push the boundaries in our works by drawing on epistemological and methodological orientations grounded in AIK to make sense of the mathematics educational experiences of African immigrant youth/families.

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