

Research Background

- In 2016, Canada had nearly 1.2 million individuals identifying as Black, with over 170 different places of birth among Black immigrants (Statistics Canada, 2019).
- Alberta's Black population expanded fivefold between 1996 to 2016, with immigration as the main driver of this growth, making the province one of the fastest growing African immigrants in Canada (Statistics Canada, 2019).
- The growth in Black immigrant population in the Prairies, especially in Alberta indicates the urgency for research relating to African immigrants.
- Although African immigrant children are unique, their school participation experiences are usually absorbed into categories of other minority groups.
- Also, just as studies of immigrants in general are likely to miss culturally-specific experiences of African immigrants, studies of school experiences in general are likely to miss disciplinary-specific aspects of mathematics learning.

Theoretical Frameworks

Afrocentricity

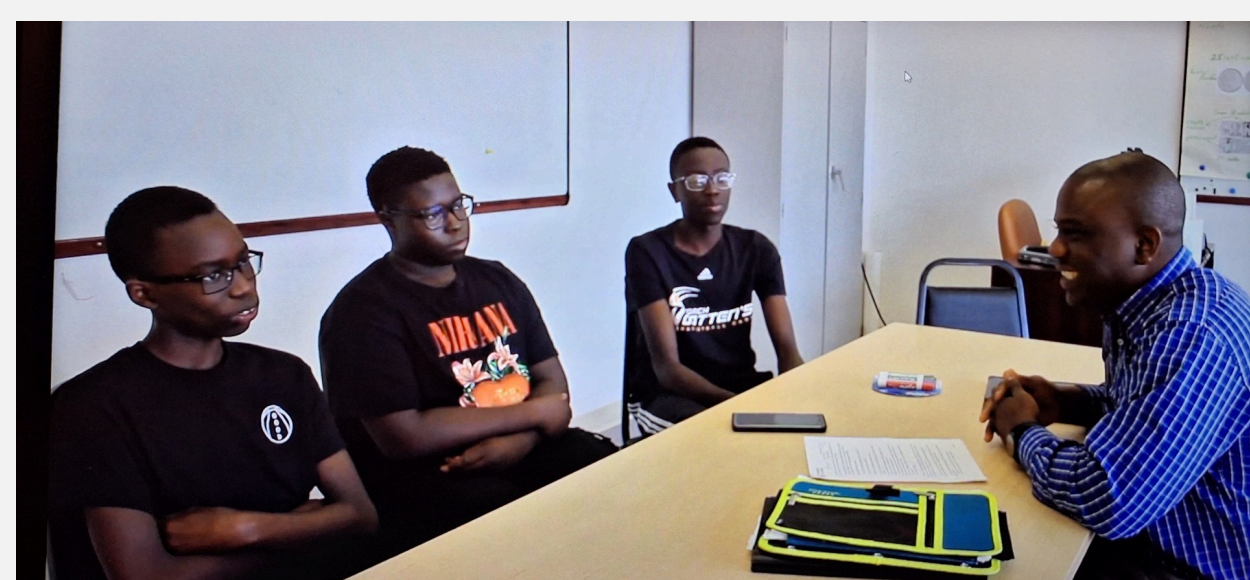
- Afrocentricity provides a unique perspective for this research, focusing on African-centered worldviews, beliefs, and philosophies (Asante, 1991).
- African value systems emphasize interconnectedness and communalism, where the individual's existence is inseparable from the community ("Ubuntu") (Tutu, 1999).
- The concept of Ubuntu, as it is known amongst Zulu people in South Africa parallels Nkonsonkonson, the Ghanaian Adinkra Symbol (a traditional symbol) which signifies unity and human relations (Osibodu & Yaro, 2023)
- Specifically, this work is largely informed by Ghanaian Indigenous Knowledge systems which are communicated through Adinkra symbols.
- Adinkra visual symbols originated from Akan tribe in Ghana. They symbolize the richness of Akan culture and serve as a means for communicating the philosophical thoughts and values of Akan people.

Positioning Theory and Storylines

- Positioning theory emphasizes how people interpret their experiences through existing storylines, which offer specific positions, interaction expectations, and roles (Harré, 2012).
- Storylines are lived stories for which told stories already exists (Harré, 2012). They are broad, culturally shared common-sense narratives that function as frameworks for participants to make sense of any communication (Andersson et al., 2022).
- Research in mathematics education has explored the power of storylines in defining available positions worldviews (Wagner & Herbel-Eisenmann, 2009).
- We see alignment between positioning theory and Afrocentric worldviews, particularly in the centrality of storytelling and the development of positioning as praxis (Herbel-Eisenmann et al., in review)

Research Methodology; Data Collection and Analysis

1. We drew on focus group interview data from 12 African immigrant students (0-5 since immigration and in Grades 6-9) enrolled in schools in the Greater Edmonton region in Alberta, Canada to identify the storylines relating to their mathematics learning experiences.
2. The data analysis process involved two levels of iterative analysis, moving back and forth between inductive–deductive approaches in making sense of the data (Yaro, 2021).
3. First, we individually worked on the transcribed interviews to identify storylines using focal areas pertaining to our research—the mathematics, the children's perspectives, and the storylines.
4. Phase two of the analysis involved collaborative coding where we met as a research team to discuss, compare, and refine our coding.
5. We identified the storylines used by African immigrant children in the study to articulate their perceptions and experiences of mathematics within Canadian and Alberta Education context. These storylines were then interpreted in the context of Ghanaian Indigenous Knowledge systems.

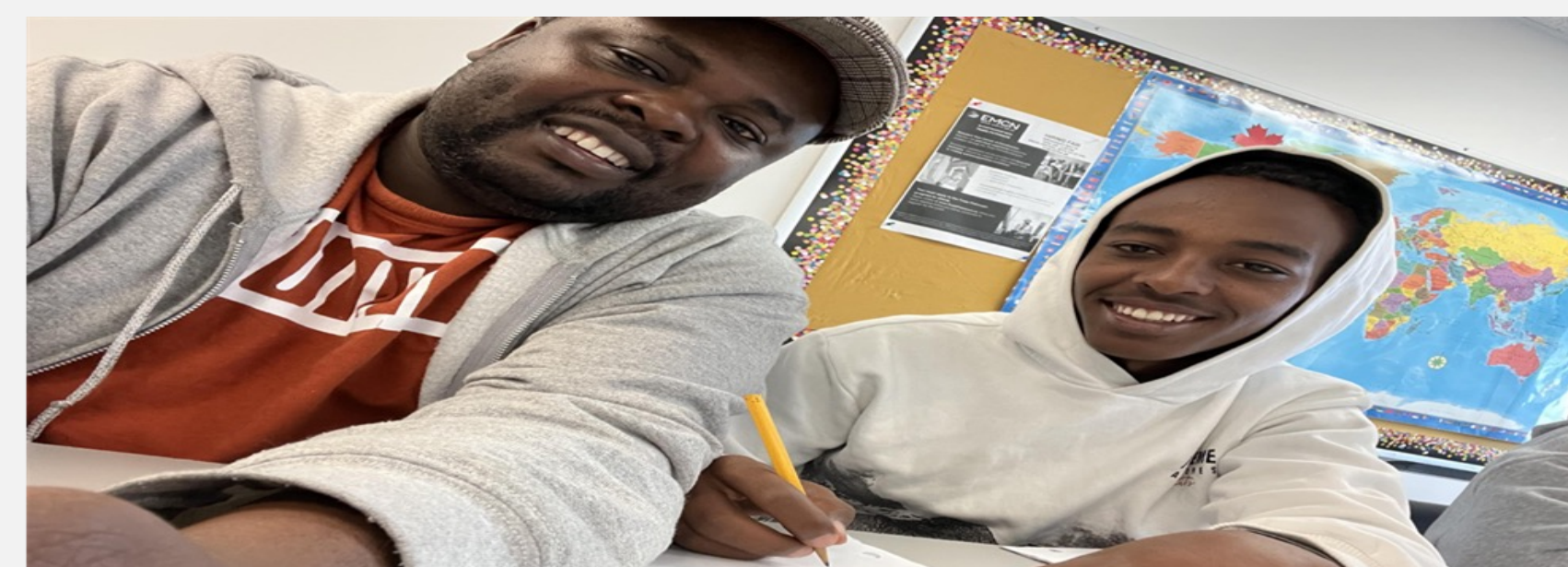


Research Questions/Goals

Overarching Research Question

1. What storylines do African immigrant children's (0-5, since immigration) in Grade 6-9 use to describe their perceptions and experiences of mathematics learning in Alberta, Canada?

Our goal in this study is to foreground and interpret the prevailing storylines from AIK or Afrocentric worldviews in Albertan (Canadian) school contexts.



Storylines Children's used to describe their mathematics learning experience

1. Mathematics learning is collaborative
2. African immigrant children are capable mathematics learners
3. Family and community support is essential for children's mathematics success
4. Mathematics is relevant in everyday life
5. English language is not a hindrance to success in

Summary

Storylines identified above align with African Indigenous perspectives that espouse virtues of community and collaboration (Ubuntu or Nkonsonkonson), perseverance, and resilience (Wawa Aba).

Implications

1. This work ignites the conversation on ways educators could develop culturally-responsive and inclusive mathematics pedagogies that build on African immigrant children's experiences.
2. The study calls for home-school collaborations in children's mathematics education among marginalized populations.
3. Employing African Indigenous worldview or Afrocentricity as a theoretical and methodological underpinnings for this work provide a deeper insights into the impact of cultural perspectives on students' mathematics experiences.

REFERENCES

Andersson, A., Ryan, U., Herbel-Eisenmann, B., Huru, H. L., & Wagner, D. (2022). Storylines in public news media about mathematics education and Minoritized Students. *Educational Studies in Mathematics*, 111(2), 323–343. <https://doi.org/10.1007/s10649-022-10161-5>

Asante, M. K. (1991). The Afrocentric idea in Education. *The Journal of Negro Education*, 60(2), 170. <https://doi.org/10.2307/2295608>

Harré, R. (2012). Positioning theory: Moral dimensions of social-cultural psychology. In J. Valsiner (ed.), *The Oxford handbook of culture and psychology*. Oxford, UK: Oxford University Press.

Osibodu, O., & Yaro, K. (2023). Foregrounding black African immigrants in mathematics education research. *Prometeica-Revista de Filosofia y Ciencias*, (27), 803-812.

Statistics Canada. (2019). *Diversity of the Black population in Canada: An overview*. Statistics Canada Catalogue no. 89-657. Ottawa: Statistics Canada.

Tutu, D. (1990). Afterword: A christian vision of the future of South Africa. *Christianity Amidst Apartheid*, 233–240. https://doi.org/10.1007/978-1-349-20527-1_15

Wagner, D., & Herbel-Eisenmann, B. (2009). Re-mythologizing mathematics through attention to classroom positioning. *Educational Studies in Mathematics*, 72(1), 1–15. <https://doi.org/10.1007/s10649-008-9178-5>

Yaro, K. (2021). Understanding African immigrant families' support for their children's mathematics learning in Canada (Unpublished doctoral dissertation, University of British Columbia)