

## **DR. SIMON KARUKU**

**Name:** Dr. Simon Karuku

**Title/Qualification:** Doctor of Philosophy

**Position:** Lecturer

**Department:** Education

**School:** Education and Social Sciences

**Area of Specialization:** Mathematics Education

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### **Short Biography**

Simon Karuku is a lecturer in mathematics and mathematics education. He has more than five years' experience in teaching and research in institutions of higher education.

### **Research Interests**

Simon Karuku's research interests are at the intersection of mathematics and mathematics education. He is interested in the application of mathematics in biosciences as well as in the nature and dynamics of student-teacher interactions in mathematics teaching and learning.

### **Publications in Journals:**

1. Njiru, S. M., Karuku, S. & Nyaga, M. N. (2020). Performance ranking in school mathematics: A device that conceals and naturalizes inappropriate teaching strategies. *Educational Research & Reviews*, 15(8), 465-472.
2. Njiru, S. M., Nyaga, M. N. & Karuku, S. (2019). Effects of performance ranking in Mathematics on students' and teachers' identity development. *International Journal of Secondary Education*, 7(1), 17-28.
3. Njiru, S. M. & Karuku, S. (2015). An exploration of factors that contribute to low performance in physics: A case of a secondary school in Kenya. *International Journal of Innovation and Scientific Research*, 17(2), 381-390.
4. Halai, A. & Karuku, S. (2013). Implementing language-in-education policy in multilingual mathematics classrooms: Pedagogical implications. *Eurasia Journal of Mathematics, Science & Technology Education*, 9(1), 23-32.
5. Kibua, T. K. & Karuku, M. (2006). Some results on nonparametric estimation of variance function. *East African Journal of Physical Sciences*, 7(1), 51-64.

6. Kibua, T. K. & **Karuku, M.** (2006). Bandwidth selection in smoothing functions. *East African Journal of Statistics*, 1(2), 161-174.

## **Books/Book Chapters Published**

1. Mohamed, M. & **Karuku, S.** (2017). Implementing a competency-based curriculum in science education: A Tanzania Mainland case study. In F. S. Otulaja & M. B. Ogunniyi (eds.), *The world of science education: Handbook of research in science education in sub-Saharan Africa* (pp. 101-118). Rotterdam, *The Netherlands: Sense Publishers.*
2. **Karuku, S.** & Tennant, G. (2016). Towards a harmonized curriculum in East Africa: A comparative perspective of the intended secondary school mathematics curriculum in Kenya, Rwanda, Tanzania and Uganda. In A. Halai & G. Tennant (Eds.), *Mathematics education in East Africa: Towards harmonization and enhancement of education quality (Springer Briefs in Education)* (pp. 9-25). Dordrecht, The Netherlands: Springer International Publishing.
3. Mohamed, M., Halai, A. & **Karuku, S.** (2016). Issues for quality enhancement and harmonization of education in East Africa. In A. Halai & G. Tennant (Eds.), *Mathematics education in East Africa: Towards harmonization and enhancement of education quality (Springer Briefs in Education)* (pp. 1-7). Dordrecht, The Netherlands: Springer International Publishing.
4. Pegg, J., & **Karuku, S.** (2012). Explanatory reasoning in junior high science textbooks. In S. P. Norris (Ed.), *Reading for evidence and interpreting visualizations in mathematics and science education* (pp. 65-81). Rotterdam, The Netherlands: Sense Publishers.

## **Presentation of Papers at Academic and Professional Conferences**

1. **Karuku, S.** (2017, June 23). Status of Primary and Secondary School Mathematics Curriculum in Eastern Africa. Paper presented at the 4<sup>th</sup> Strathmore International Mathematics Conference. June 19-23, 2017. Nairobi, Kenya: Strathmore University.
2. **Karuku, S.** & Tennant, G. (2014, September 2). Comparative analysis of secondary school mathematics curriculum in Kenya, Rwanda, Tanzania and Uganda. Paper presented in the 4th Capacity and Network Project Workshop, September 1–12, 2014, Dar es Salaam, Tanzania.

3. **Karuku, S.** (2013). Accessing the other's lived mathematical experience: Experiences from the "field". In M. V. Martinez & A. C. Superfine (Eds.), *Proceedings of the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (p. 1309). Chicago, IL: University of Illinois at Chicago.
4. **Karuku, S.** (2013). What's in a mathematics lesson? An exchange or a gift? In S. K. Kwofie, M. B. Ogunniyi, O. Amosun, K. R. Langenhoven & S. Dinie (Eds.), *Proceedings of the 21st annual meeting of the Southern African Association for Research in Mathematics, Science and Technology Education* (pp. 76-78). Bellville, Cape Town: University of the Western Cape.
5. **Karuku, S.** & Simmt, E. (2012). Students' experiences of seeking injustice-induced help in a mathematics classroom. In L. R. van Zoest, J.-J. Lo, & J. L. Kratky (Eds.), *Proceedings of the 34th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 347-350). Kalamazoo, MI: Western Michigan University.
6. Halai, A. & **Karuku, S.** (2012). Learning mathematics in multilingual classrooms: Policies and practice. *Proceedings of the 12th International Congress on Mathematics Education* (pp. 6118-6127). Seoul, Korea: International Congress on Mathematics Education.
7. **Karuku, S.** (2010). Reasoning demands in mathematics textbooks. In P. Liljedahl, S. Oesterle & D. Allan (Eds.), *Proceedings of the 2010 annual meeting of the Canadian Mathematics Education Study Group* (p. 219). Burnaby, BC: Simon Fraser University.
8. **Karuku, S.** (2012, October 31). Glimpses of the Kenyan and Tanzanian education systems. Invited lecture given to the third year Bachelor of Education students at the Grand Valley State University, Allendale, Michigan, USA.
9. **Karuku, S.** (2012, July 26). The gift of pedagogy: Implications for mathematics teaching. Paper presented at the 2nd International Mathematics Research Meeting. July 23-27, 2012. Nairobi, Kenya: Strathmore University.
10. Pegg, J. & **Karuku, S.** (2012, May 29). Opportunities for reasoning about explanations in junior high science curricular materials. Paper presented at the 40th annual conference of the Canadian Society for the Study of Education (CSSE). May 27-30, 2012, Waterloo, ON: Wilfrid Laurier University.
11. **Karuku, S.** (2011, November 25). A comparative analysis of syllabuses for grades 1-9 in Canada (Alberta), Kenya and Tanzania with particular reference to mathematics. Paper presented in the Research

Seminar Series, Institute for Educational Development–East Africa, Aga Khan University, Dar es Salaam, Tanzania.

12. **Karuku, S.** (2011, May 27). Seeking help that helps: Lived experiences of Canadian mathematics students. Paper presented in the Curriculum and Pedagogy Institute Seminar Series, University of Alberta, Canada.
13. Pegg, J. & **Karuku, S.** (2010, November 20). Using science textbook and laboratory resources to engage students in constructing scientific explanations. Paper presented at the annual conference of the Alberta Teachers Association Science Council. Edmonton, Canada.
14. **Karuku, S.** (2010, October 22). Reasoning demands in mathematics textbooks. Paper presented at the annual conference of Mathematics Council of the Alberta Teachers Association. Calgary, Canada.
15. **Karuku, S.** (2008, May 7). Some graph-theoretic methods in dynamical systems analysis. Paper presented at the GRACE Student Workshop in Mathematics. Brandon University, Canada.