Isaac Benning

Lecturer · Mathematics & ICT Education
University of Cape Coast

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PROFILE

Isaac Benning is an inspired mathematics educator with 17 years of teaching experience. Isaac is a lecturer at the Department of Mathematics and ICT Education, Faculty of Science and Technology Education, University of Cape Coast, Ghana. Isaac's classroom teaching is directed towards providing an interactive learning environment for prospective mathematics teachers to gain advanced working knowledge and skills of the teaching profession. Isaac's research activities involve professional development for mathematics teachers focussing on tracking the development of their dispositions towards effective pedagogical use of technology. Isaac is inspired to share and learn from others the professional teaching experiences and research that aim at widening the learning space for productive classroom discourse. In the last five years, Isaac has been working with and training both pre-and in-service mathematics teachers towards the pedagogical use of GeoGebra in mathematics teaching. The overarching aim of Isaac is to continuously build on his expertise needed for a management position in mathematics education where through research and teaching, he could employ his knowledge and leadership skills to advance professional teacher development in Ghana and beyond.

RESEARCH

Interests	Technology integration in mathematics education · professional development for teachers · effective mathematics pedagogy · Professional development · technology in mathematics Education · TPCK
Areas	Education · Applied Mathematics · Developmental and Educational Psychology · Gender Studies · Health Informatics · Information Systems

RESEARCH SUMMARY

17	378	8	8	7.45	45%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 17 publications listed below, 2015–2026. Field-weighted impact is the mean over the 11 works scored for it; 1.00 is the world average for works of the same field, type and year. 5 of the 11 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Lecturer 2020–present
Mathematics and ICT Education, University of Cape Coast, Cape Coast, Ghana

EDUCATION AND QUALIFICATIONS

PhD (Mathematics Education) 2016–2019
College of Education, University of Otago, Dunedin, New Zealand

DISTINCTIONS, MEMBERSHIPS AND SERVICE

Mathematics Education Research Group of Australasia (MERGA) 2018–present
Payneham, Australia

PUBLICATIONS

Journal articles 15

1. **Isaac Benning**, George Adom, Douglas Darko Agyei, Japhet Kwasi Osiakwan, Helena Naa Korkor Tetteh, Forster D. Ntow (2026). A multivariate and structural modelling analysis of teacher readiness and adoption of the TM1 laptop computer for classroom use. *Discover Education*. https://doi.org/10.1007/s44217-026-01698-1
2. Japhet Kwasi Osiakwan, John Kodwo Appiah, Mavis Okyere, **Isaac Benning** (2026). Preservice Mathematics Teachers' Understanding of Quadrilateral Properties and Hierarchical Relationships. *Journal of Education and Learning*. https://doi.org/10.5539/jel.v15n6p151
3. Ravšelj, Dejan, Keržič, Damijana, Tomaževič, Nina, Umek, Lan, Brezovar, Nejc, Iahad, Noorminshah A., Abdulla, Ali Abdulla, Akopyan, Anait, Segura, Magdalena Waleska Aldana, AlHumaid, Jehan, … **Benning, Isaac** and 89 others (2025). A global study of early reactions. *Portuguese National Funding Agency for Science, Research and Technology (RCAAP Project by FCT)*.
4. Dejan Ravšelj, Damijana Keržič, Nina Tomaževič, Lan Umek, Nejc Brezovar, Noorminshah A. Iahad, Ali Abdulla Abdulla, Anait Akopyan, Magdalena Waleska Aldana Segura, Jehan AlHumaid, … **Isaac Benning** and 89 others (2025). Higher education students' perceptions of ChatGPT: A global study of early reactions. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0315011
5. **Isaac Benning** (2023). Didactical and Semiotic Affordance of GeoGebra in a Productive Mathematical Discourse. *International Journal of Educational and Pedagogical Sciences*. https://scholar.google.com/scholar?cluster=14135402157468659910&hl=en&oi=scholarr
6. **Isaac Benning**, Chris Linsell, Naomi Ingram (2023). Examining the changes in mathematics teachers' technology dispositions through GeoGebra-mediated professional development. *Asian Journal for Mathematics Education*. https://doi.org/10.1177/27527263231163276
7. **Isaac Benning**, Ernest Kofi Davis (2023). Graduate students' experiences and evaluation of online instruction. *Social Sciences & Humanities Open*. https://doi.org/10.1016/j.ssaho.2023.100597
8. Richard Kyere Asomah, Douglas Darko Agyei, Forster D. Ntow, **Isaac Benning** (2023). Hypothetical Approach to the Teaching of Trigonometric Concepts Using Cooperative Learning. *Education Research International*. https://doi.org/10.1155/2023/2051776
9. Emmanuel Agyei, Douglas Darko Agyei, **Isaac Benning** (2023). Teaching Mathematics with Digital Technologies: A Situational Analysis of High School Teachers' Experiences in Ghana. *African Journal of Research in Mathematics Science and Technology Education*. https://doi.org/10.1080/18117295.2023.2265241
10. Emmanuel Agyei, Douglas Darko Agyei, **Isaac Benning** (2022). In-service mathematics teachers' preparedness, knowledge, skills, and self-efficacy beliefs of using technology in lesson delivery. *Cogent Education*. https://doi.org/10.1080/2331186x.2022.2135851
11. **Isaac Benning** (2021). Enacting core practices of effective mathematics pedagogy with GeoGebra. *Mathematics Teacher Education and Development*. https://eric.ed.gov/?id=EJ1306877
12. **Isaac Benning** (2018). Using Technology in Mathematics: Professional Development for Teachers. *Mathematics Education Research Group of Australasia*. https://eric.ed.gov/?id=ED592505
13. **Benning Isaac** (2016). Effect of using spreadsheet in teaching quadratic function on the performance of students. *Zenodo (CERN European Organization for Nuclear Research)*. https://doi.org/10.5281/zenodo.5223984
14. **I Benning**, Douglas D. Agyei (2016). Effect of using spreadsheet in teaching quadratic functions on the performance of senior high school students. *International Journal of Education, Learning and Development*. https://www.academia.edu/download/42406371/IKE___DD_paper_1.pdf
15. **Benning Isaac** (2015). Pre-service teachers' use and perceptions of GeoGebra software as an instructional tool in teaching mathematics. *Zenodo (CERN European Organization for Nuclear Research)*. https://doi.org/10.5281/zenodo.5224107

Conference papers 1

1. **Benning** (2024). Baseline report on the effectiveness of continuous professional development for in-service teachers in Ghana. *AFTRA Conference Proceedings*, *Lusaka*, *Zambia*.

Theses 1

1. **Isaac Benning** (2019). Professional development for using technology in mathematics teaching in Ghana. *University of Otago*. https://ourarchive.otago.ac.nz/esploro/outputs/doctoral/Professional-development-for-using-technology-in/9926480251001891