Francis Kodwo Awuah

Department of Teacher Education
Kwame Nkrumah University of Science and Technology

ORCID 0000-0002-0920-1680 · Google Scholar scholar.google.com/citations?user=3QVralMAAAAJ&hl=en · Profile knust.peerford.com/staff/527844f9-a4f2-4a0e-912c-0a206fcc773c

RESEARCH

Interests: mathematics education · probability · problem-solving and AI

Areas: Education · Statistics and Probability · Human Factors and Ergonomics · Modeling and Simulation · Applied Mathematics · Computer Networks and Communications

RESEARCH SUMMARY

34	146	6	2	5.70	30%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 34 publications listed below, 2011–2026. Field-weighted impact is the mean over the 27 works scored for it; 1.00 is the world average for works of the same field, type and year. 8 of the 27 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Mathematics Education Lecturer 2020–present
Teacher Education, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

EDUCATION AND QUALIFICATIONS

Doctor of Philosophy in Mathematics Education
Institute of Science and Technology Engineering Education, University of South Africa, Pretoria, South Africa

DISTINCTIONS, MEMBERSHIPS AND SERVICE

Faculty examination officer 2025–2037
Teacher Education, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

PUBLICATIONS

Journal articles 33

1. Francis Atsu Soku, Gabriel Asare Okyere, Sylvester Ali Frimpong, **Francis Kwadwo Awuah** (2026). An APOS Analysis of Students' Mental Construction of the Unbiasedness of the Maximum Likelihood Estimator. *African Journal of Research in Mathematics Science and Technology Education*. https://doi.org/10.1080/18117295.2026.2693344
2. **FK Derick Folson: Awuah** (2026). Digital pedagogies for inclusive and contexualised core mathematics education in pre tertiary evidence from Ghana. *e-Learning resarch and practice journal*.
3. Patrick Kyeremeh, **Francis Kwadwo Awuah**, Daniel Clark Orey (2026). From Cultural Awareness to Integration: Faculty Attempt to Incorporate the Outside-of-School Geometry into Geometry Teaching. *Science & Education*. https://doi.org/10.1007/s11191-026-00745-5
4. Akwasi Sakyi Denteh, **Francis Kwadwo Awuah** (2026). From Recall to Reasoning: A Systematic Review of Cognitive Demand in Technical and Vocational Mathematics Assessment. *GHANA JOURNAL OF EDUCATION AND TEACHING*. https://doi.org/10.64712/ghajet.v14i3.891
5. **Awuah F K** (2026). Global perspertives on Artifivcial intelligence in mathematics Education : A systematic

review and its implications on students learning outcomes. *e-Learning resarch and practice journal*.

6. VK Akwensi, **AWUAH FK**, K Agyekum (2026). Integrating AI in Mathematics Education while Preserving the Human Element: The Ghanaian Perspective. *E-Learning Research and Practice Journal*. https://www.researchgate.net/profile/Theophilus-Kankam-2/publication/408475453_Designing_Inclusive_Learning_Environments_Application_of_Universal_Design_for_Learning_to_Enhance_Visual_Arts_Education_for_Students_with_Learning_Disabilities/links/6a4a4dd81681584dea2ce92c/Designing-Inclusive-Learning-Environments-Application-of-Universal-Design-for-Learning-to-Enhance-Visual-Arts-Education-for-Students-with-Learning-Disabilities.pdf#page=29
7. Farouq Sessah Mensah, Philip Adjei Acheampong, **Francis Kwadwo Awuah**, William Obeng-Denteh, Augustina Adu, Leticia Nana Sam (2026). Making workplace mathematics visible: an analytical framework of vocational mathematical affordances in welding and fabrication in Ghana. *Frontiers in Education*. https://doi.org/10.3389/feduc.2026.1916537
8. Emmanuel Larbi Ayetey, **Francis Kwadwo Awuah**, Emmanuel Bright Owusu (2026). Perceived Calculus Readiness and Markov-Informed Intervention Scenarios among Preservice Teachers in Colleges of Education. *East African Journal of Education Studies*. https://doi.org/10.37284/eajes.9.3.5420
9. Richard Osei Boateng, **Francis Kwadwo Awuah** (2026). Teaching Plane Geometry Through Real-Life Applications: A Systematic Review. *International Journal of Research and Innovation in Social Science*. https://doi.org/10.47772/ijriss.2026.1026edu0023
10. Philip Adjei Acheampong, **Francis Kwadwo Awuah**, Farouq Sessah Mensah (2026). When mathematics remains trade-blind: recontextualization and workplace mobilization in Ghanaian welding and fabrication education. *Frontiers in Education*. https://doi.org/10.3389/feduc.2026.1898213
11. Derick Folson, **Francis Kwadwo Awuah** (2026). Workplace Experience Learning at the Pre-Tertiary TVET Level in Ghana: A Phenomenological Study. *SAGE Open*. https://doi.org/10.1177/21582440251411964
12. Richard Boateng Osei, **Francis Kwadwo Awuah**, Manasseh Danso (2026). YouTube Tutorials Videos and Student Achievement in Mathematics: A Case in Bosomtwe Girls' STEM School. *EIKI Journal of Effective Teaching Methods*. https://doi.org/10.59652/823dgj68
13. Emmanuel Appoh Andam, **Francis Kwadwo Awuah**, William Obeng-Denteh (2025). A Systematic Review and Bibliometric Analysis of Probability Concepts: Research Methods and Frameworks. *East African Journal of Interdisciplinary Studies*. https://doi.org/10.37284/eajis.8.1.2989
14. Francis Atsu Soku, Gabriel Asare Okyere, **Francis Kwadwo Awuah** (2025). APOS Theory-based research in Mathematics Education: A systematic literature review. *East African Journal of Education Studies*. https://doi.org/10.37284/eajes.8.2.3070
15. Emmanuel Appoh Andam, **Francis Kwadwo Awuah**, William Obeng-Denteh (2025). Analysis of Grade 11 Students' Conceptual Understanding in Probability Concepts: A Perspective of Skemp Understanding Theory. *East African Journal of Education Studies*. https://doi.org/10.37284/eajes.8.2.2987
16. Derick Folson, **Francis Kwadwo Awuah** (2025). Assessing Cognitive Alignment in Pre-Tertiary TVET Core Mathematics: A Ghanaian Case Study of Curriculum and Exit Examination. *East African Journal of Education Studies*. https://doi.org/10.37284/eajes.8.2.2886
17. Derick Folson, **Francis Awuah** (2025). Assessing Topic Alignment in Pre-tertiary TVET Core Mathematics. *Interdisciplinary Journal of Education*. https://doi.org/10.53449/yzxenc70
18. VK Akwensi, **FK Awuah**, K Agyekum (2025). Blending Intelligence: Using Artificial Intelligence (AI) In Research Without Losing The Human Touch. *EDITORS: Eric Appau Asante*. https://www.researchgate.net/profile/Prosper-Setsoafia/publication/394107007_Are_They_AI-Literate_Exploring_The_Impact_Of_Generative_AI_Literacy_On_Academic_Performance_Among_Ghanaian_University_Students/links/688a221df7e6f27ff4763257/Are-They-AI-Literate-Exploring-The-Impact-Of-Generative-AI-Literacy-On-Academic-Performance-Among-Ghanaian-University-Students.pdf#page=110
19. Patrick Kyeremeh, **Francis Kwadwo Awuah**, Daniel Clark Orey (2025). Challenges regarding the integration of ethnomathematical perspectives into geometry teaching: The faculty reflection. *Asian Journal for Mathematics Education*. https://doi.org/10.1177/27527263251326330

20. **FK Awuah** (2025). Determinants of AI-Driven Tools Adoption by Senior High School Mathematics Teachers: A Partial Least Squares Structural Equation Modelling Approach. *African Journal of Science, Technology and Mathematics Education*. https://repository.up.ac.za/items/2ae838f8-2f84-4a1c-a075-2d92e0c91eeb

21. Philip Adjei Acheampong, **Francis Kwadwo Awuah** (2025). Examining the Real-life Application Problems in Welding and Fabrication Students' Mathematics Exercise Books. *East African Journal of Arts and Social Sciences*. https://doi.org/10.37284/eajass.8.1.2730

22. Patrick Kyeremeh, **Francis Kwadwo Awuah**, Daniel Clark Orey (2025). Exploring geometry found outside of school: insights from faculty perspective. *Research in Mathematics Education*. https://doi.org/10.1080/14794802.2025.2521289

23. Esenam Dorwu, **Francis Kwadwo Awuah**, Patrick Kyeremeh (2025). Exploring mathematical values held by high school mathematics teachers. *Discover Education*. https://doi.org/10.1007/s44217-025-00457-y

24. Esenam Dorwu, **Francis Kwadwo Awuah**, Patrick Kyeremeh (2025). From professing to doing: mathematical values practices of high school mathematics teachers. *SN Social Sciences*. https://doi.org/10.1007/s43545-025-01151-4

25. Philip Acheampong, **Francis Kwadwo Awuah** (2025). MATHEMATICS CONTENT AND TECHNICAL AND VOCATIONAL EDUCATION TRAINING: A SYSTEMATIC REVIEW. *Physical and Mathematical Education*. https://doi.org/10.31110/fmo2025.v40i4-01

26. Patrick Kyeremeh, **Francis Kwadwo Awuah**, Daniel Clark Orey (2025). Modeling the antecedents of integration of ethnomathematical perspectives into geometry teaching among faculty: A logistic regression analysis. *JRAMathEdu (Journal of Research and Advances in Mathematics Education)*. https://doi.org/10.23917/jramathedu.v10i1.6374

27. Emmanuel Appoh Andam, **Francis Kwadwo Awuah**, William Obeng-Denteh (2025). Probability Concepts: A Systematic Literature Review of Students' Learning Difficulties, Errors and Misconceptions. *East African Journal of Arts and Social Sciences*. https://doi.org/10.37284/eajass.8.2.3008

28. Johnson Amoakohene Asante, **Francis Kwadwo Awuah**, Derick Folson (2025). Teachers' Readiness and Self-Efficacy in Implementing Inquiry-Based Learning in Primary Mathematics Education: A Case of Sekyere Kumawu District, Ghana. *SAGE Open*. https://doi.org/10.1177/21582440251375212

29. Patrick Kyeremeh, **Francis Kwadwo Awuah**, Esenam Dorwu (2023). Integration of ethnomathematics in teaching geometry: a systematic review and bibliometric report. *Journal of Urban Mathematics Education*. https://doi.org/10.21423/jume-v16i2a519

30. **Francis K. Awuah**, Ugorji I. Ogbonnaya (2020). Grade 12 Students' Proficiency in Solving Probability Problems Involving Contingency Tables and Tree Diagrams. *International Journal of Instruction*. https://doi.org/10.29333/iji.2020.13255a

31. UGORJI I. OGBONNAYA, **FRANCIS K. AWUAH** (2019). QUINTILE RANKING OF SCHOOLS IN SOUTH AFRICA AND LEARNERS' ACHIEVEMENT IN PROBABILITY. *Statistics Education Research Journal*. https://doi.org/10.52041/serj.v18i1.153

32. Derick Folson, **Francis Kwadwo Awuah** (2014). Combating Examination Malpractices in the Basic Education Certificate Examinations (BECE) in Ghana. *International Journal of Computer Applications*. https://doi.org/10.5120/17536-8113

33. **FK Awuah** (2011). Optimal packing of fm station progammes case study: Kaase Fm station, Kumasi, Ghana. *African Journal of Mathematics and Computer Science Research*. https://academicjournals.org/journal/AJMCSR/article-full-text-pdf/7063CC62149.pdf

Theses 1

1. **FK Awuah** (2018). Grade 12 learner's problem-solving skills in probability. *PQDT-Global*. https://search.proquest.com/openview/0376e7a4e970d7131f07c0df875bb3bb/1?pq-origsite=gscholar&cbl=2026366&diss=y