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RESEARCH

Interests	Mathematics Education · Basic/Early Childhood Education · Didactics of Mathematics · Teacher Education
Areas	Education · Applied Mathematics · Statistics and Probability · Developmental and Educational Psychology · Modeling and Simulation · Computer Science Applications

RESEARCH SUMMARY

55	225	8	5	0.78	9%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 55 publications listed below, 2014–2026. Field-weighted impact is the mean over the 35 works scored for it; 1.00 is the world average for works of the same field, type and year. 3 of the 35 papers scored for it are among the world's most cited tenth for their field, type and year.

PUBLICATIONS

Journal articles 54

1. **Clement Ayarebilla Ali** (2026). Integration and Applications of Linear Algebra in STEM Programmes: A Case Study of Ghanaian Universities. *MATHEdunesa*. https://ejournal.unesa.ac.id/index.php/mathedunesa/article/view/73079
2. Azobit Charles Awindago, **Clement Ayarebilla Ali** (2026). Mayer's Model of Solving Routine and Non-Routine Problems in Linear Word Problems. *Journal of Research in Mathematics, Science, and Technology Education.*. https://doi.org/10.70232/jrmste.v3i2.62
3. Edward Abatanie Padmore, Ibrahim Mohammed Gunu, **Clement Ayarebilla Ali** (2025). Availability and Use of Learning Resources for Basic School Mathematics Instruction in Ghana. *Journal of Mathematics Instruction Social Research and Opinion*. https://doi.org/10.58421/misro.v4i2.376
4. Saviour Dogbe, **Clement Ali** (2025). Bridging the integer gap: Computer-assisted instruction's effects on student achievement, gender equity, and learning perceptions. *International Journal of Didactic Mathematics in Distance Education*. https://doi.org/10.33830/ijdmde.v3i1.13105
5. **Clement Ayarebilla Ali** (2025). Comparison between concept-based and procedure-based circle theorems. *Journal of Advanced Sciences and Mathematics Education*.
6. **Clement Ali**, Desmond Asiniba Atiah (2025). EXPLORING TEACHERS' KNOWLEDGE, PRACTICE, AND READINESS FOR A NEW MATHEMATICS CURRICULUM IMPLEMENTATION. *Mathematics Research and Education Journal*. https://doi.org/10.25299/mrej.2025.vol9(1).20668
7. **Clement Ayarebilla Ali** (2025). Indigenous Symbols Indigenize Concreteness Fading in Multiplication of Numbers. *Journal of STEM Education Innovations and Research*. https://doi.org/10.63504/jstem.v25i4.2645
8. Azobit Charles Awindago, **Clement Ayarebilla Ali** (2025). Student Creativity in Mechanical and Non-Mechanical Word Problems. *Turkish Journal of Mathematics Education*. https://doi.org/10.66114/tujme.116
9. Edward Ike Atawura, **Clement Ayarebilla Ali** (2025). Using the graduated sequence instruction to combat errors in pre-calculus. *Journal of Mathematics and Science Teacher*. https://doi.org/10.29333/mathsciteacher/16058

10. **Clement Ayarebilla Ali** (2024). A Phenomenological Study of Adinkra Values in Exemplifying Concreteness Fading in Multiplication of Numbers. *Journal of STEM Education: Innovations & Research*. https://www.researchgate.net/profile/Clement-Ali-3/publication/389429109_178_Article_Values_JSTEM2024/links/67c1e36b96e7fb48b9d38f71/178-Article-Values-JSTEM2024.pdf
11. Chris Eric Morkle, **Clement Ayarebilla Ali** (2024). APOS Framework Didactize Equivalence Linear Simultaneous Equations in Senior High School Mathematics. *Journal of Research in Mathematics, Science, and Technology Education.*. https://doi.org/10.70232/jrmste.v1i2.13
12. Matthew Bugre Ndebil, **Clement Ayarebilla Ali** (2024). Cooperative learning as a strategy of improving mathematics performance and attitudes. *International Journal of Educational Innovation and Research*. https://doi.org/10.31949/ijeir.v3i1.7163
13. Michael Tangkur, **Clement Ayarebilla Ali** (2024). Crossroads in Mathematics Games: Integrating Indigenous and Exotic Games. *Journal of Research on Mathematics Instruction (JRMI)*. https://doi.org/10.33578/jrmi.v5i2.84
14. **Clement Ayarebilla Ali** (2024). Cultural Symbols Didactize Concreteness Fading in Basic Multiplication. *Journal of Instructional Mathematics*. https://doi.org/10.37640/jim.v5i1.1954
15. **Clement Ayarebilla Ali** (2024). Digital Didactics Embedded in Ethnomathematics Assessment of Online Mathematics Instruction. *Unnes Journal of Mathematics Education*. https://doi.org/10.15294/ujme.v13i3.13292
16. Mohammed Mutawakil Issahaku, **Clement Ayarebilla Ali** (2024). Exploring Student and Teacher Factors Influencing Students' Performance in Mathematics. *Futurity Education*. https://doi.org/10.57125/fed.2024.06.25.03
17. **Clement Ayarebilla Ali** (2024). Exploring effective differentiated instruction in the teaching and learning of mathematics. *ASEAN Journal for Science Education*. http://www.ejournal.bumipublikasinusantara.id/index.php/ajsed/article/view/320
18. **Clement Ayarebilla Ali**, Emmanuel Asemani, Michael Tangkur (2024). Pupils' didactical Mileu in an inclusive discourse in basic triangle geometry. *International Journal of Didactic Mathematics in Distance Education*. https://doi.org/10.33830/ijdmde.v1i2.9523
19. **Clement Ayarebilla Ali** (2024). Student Teachers' Culture of Selective Amnesia in Studying Content Standards Algebra. *Scientia: Journal of Mathematics Education*. https://billiton.id-sre.org/index.php/sjme/article/view/7
20. **Clement Ayarebilla Ali** (2024). Student-Teacher Experiences in Numeration Systems. *Turkish Journal of Mathematics Education*. https://doi.org/10.66114/tujme.94
21. **Clement Ayarebilla Ali** (2024). THE INTERSECTIONS OF INDIGENOUS RELIGION, CHRISTIANITY, AND ISLAM IN MATHEMATICAL SYMMETRY. *Symmetry: Culture and Science*. https://www.researchgate.net/profile/Clement-Ali-3/publication/381972539_The_intersections_of_indigenous_religion_Christianity_and_Islam_in_mathematical_symmetry/links/66ad15452361f42f23af14b1/The-intersections-of-indigenous-religion-Christianity-and-Islam-in-mathematical-symmetry.pdf
22. **Clement Ali**, Dickson Edem Gadaglo (2024). The nexus between concept-based and procedure-based instructional approaches in addressing errors in circle theorems. *JRAMathEdu (Journal of Research and Advances in Mathematics Education)*. https://doi.org/10.23917/jramathedu.v9i3.3273
23. Issaka Alorki, **Clement Ayarebilla Ali** (2023). Attitudes Coded as Measures of Determining Students' Performance in Mathematics. *Futurity Education*. https://doi.org/10.57125/fed.2023.12.25.12
24. Samuel Kojo Biney, **Clement Ayarebilla Ali**, Nixon Saba Adzifome (2023). Errors and misconceptions in solving linear inequalities in one variable. *Journal of Advanced Sciences and Mathematics Education*. https://doi.org/10.58524/jasme.v3i1.195
25. **Clement Ayarebilla Ali** (2023). Exploration of the ability of preservice mathematics teachers using Kolb's experiential learning theory & learning styles. *Indonesia Journal of Science and Mathematics Education*. https://www.academia.edu/download/123311035/6130.pdf
26. **CA Ali**, Ernest Kofi Davis (2023). PUPILS'RECOGNITION OF GEOMETRIC TESSELLATIONS AS PATTERNS OF TRADITIONAL CULTURE. *Symmetry: Culture & Science*. https://www.researchgate.net/

profile/Clement-Ali-3/publication/374836816_Pupils'_recognition_of_geometric_tessellations_as_patterns_of_traditional_culture/links/65df6e2ee7670d36abe5a105/Pupils-recognition-of-geometric-tessellations-as-patterns-of-traditional-culture.pdf

27. **Clement Ayarebilla Ali** (2023). Preservice Teachers' Experiences in Experiential Instruction in Place Value. *Indonesian Journal of Science and Mathematics Education*. https://doi.org/10.24042/ijsme.v6i1.10440
28. **Clement Ayarebilla Ali** (2023). Re-enacting Mathematics Values through Cultural Symbols. *Indonesian Journal of Science Technology Engineering Art and Mathematics Education*. https://doi.org/10.31258/ijsteame.v2i2.13
29. Enock Yeng, **Clement Ayarebilla Ali**, Nixon Saba Adzifome (2023). Relationship between familiarity and competency in integrating information and communication technology into mathematics instruction. *Contemporary Mathematics and Science Education*. https://doi.org/10.30935/conmaths/13405
30. Anita Larteley Addico, **Clement Ayarebilla Ali**, Nixon Saba Adzifome (2023). Student-teachers' technological pedagogical content knowledge preparedness for mathematics instruction. *Journal of Advanced Sciences and Mathematics Education*. https://doi.org/10.58524/jasme.v2i2.116
31. Joseph Baidoo, **Clement Ayarebilla Ali** (2023). Students' mathematics and real life contexts in solving algebraic word problems. *Al-Jabar Jurnal Pendidikan Matematika*. https://doi.org/10.24042/ajpm.v14i2.19272
32. **Clement Ayarebilla Ali** (2023). Using indigenous artefacts to support conceptual field approach of learning special trigonometric angles. *Journal of Mathematics and Science Teacher*. https://doi.org/10.29333/mathsciteacher/13698
33. **Clement Ayarebilla Ali** (2022). Applications of Basketry to Geometric Tessellations. *Building on the Past to Prepare for the Future: Proceedings of the 16th International Conference. King's College, August 8–13, 2022*. https://books.google.com/books?hl=en&lr=&id=IoGIEAAAQBAJ&oi=fnd&pg=PA18&dq=info:-TvUWFHncyQJ:scholar.google.com&ots=dVpb5WaEB_&sig=39Mzb4gymzZgQ053xnPEqOq59VE
34. Collins Asoma, **Clement Ayarebilla Ali**, Nixon Saba Adzifome, Appiah-Kubi Eric (2022). Mathematics Teachers' Problem-Solving Knowledge, Practices and Engagement among Public Junior High Schools in Berekum West, Ghana. *EAST AFRICAN JOURNAL OF MANAGEMENT AND BUSINESS STUDIES*. https://doi.org/10.46606/eajess2022v03i01.0143
35. Michael Tangkur, Michael Johnson Nabie, **Clement Ayarebilla Ali** (2022). Mathematics teachers' knowledge of indigenous games in teaching mathematics. *Al-Jabar Jurnal Pendidikan Matematika*. https://doi.org/10.24042/ajpm.v13i1.11693
36. **Clement Ayarebilla Ali** (2022). The didactical phenomenology in learning the circle equation. *International Electronic Journal of Mathematics Education*. https://doi.org/10.29333/iejme/12472
37. **CA Ali**, Kweku Esia-Donkoh (2021). A Comparative Study of SAM and ADDIE Models in Simulating STEM Instruction. *African Educational Research Journal*. https://eric.ed.gov/?id=EJ1324100
38. **Clement Ayarebilla Ali**, Peter Akayuure (2021). Didactics has evolved to digital age didactics. *digiTAL 2021*. https://www.researchgate.net/profile/Andre-Calitz-2/publication/356187806_The_Impact_of_COVID-19_on_Students_Completing_a_Blockchain_Course/links/61d5bf3ae669ee0f5c880135/The-Impact-of-COVID-19-on-Students-Completing-a-Blockchain-Course.pdf#page=78
39. Ernest Kofi Davis, **Clement Ayarebilla Ali**, Douglas Darko Agyei (2021). Effectiveness of Semiosis for Solving the Quadratic Equation. *European Journal of Mathematics and Science Education*. https://doi.org/10.12973/ejmse.2.1.13
40. **Clement Ayarebilla Ali** (2021). Ghanaian Indigenous Conception of Real Mathematics Education in Teaching and Learning of Mathematics. *Indonesian Journal of Science and Mathematics Education*. https://doi.org/10.24042/ijsme.v4i1.7382
41. **Clement Ayarebilla Ali**, Hans Kweku Anderson (2021). Pre-Service Teachers' Pedagogical Content Knowledge In Transferring From Basic Musical Notations To Basic Fractions. *Journal of STEM education*.
42. **Clement Ayarebilla Ali** (2021). Visually impaired student-teacher knowledge and use of basic assistive

technology tools for mathematics. *African Educational Research Journal*. https://eric.ed.gov/?id=EJ1324075

43. **C. A. Ali**, Jones Apawu, Paul Kobina Effrim (2020). Incidence of Mathematics Anxiety on Junior High Students' Learning of Mathematics in Ghana. *International Journal of Psychology and Education*. https://journals.uew.edu.gh/index.php/ijope/article/view/36
44. **Clement Ayarebilla Ali** (2019). Didactical conceptual structures in extending the triad to the tetrahedron exemplified in the teaching and learning of equations of the circle. *University of Cape Coast*. https://ir.ucc.edu.gh/server/api/core/bitstreams/ced216e8-3778-4b5b-8104-b10cc58261b7/content
45. **C. A. Ali** (2019). Exploring the expository techniques of teaching and learning mathematics in Ghana: The case of Shama Senior High School. *International Journal of Basic Education Research and Policy*.
46. **Clement Ayarebilla Ali**, Ernest Kofi Davis (2018). Harnessing Indigenous Basketry Resources for Prenumber and Early Number Work. *Journal of Education and Learning*. https://doi.org/10.5539/jel.v7n2p210
47. **C. A. Ali** (2018). Student-Teachers Applications Didactical Conceptual Structures in the Three Pillars of Constructivism in Parabolas. *International Journal of Basic Education Research and Policy*.
48. **Clement Ayarebilla Ali**, Peter Akayuure (2016). Exploring Postgraduate Students' Research Knowledge and Skills in Normality Tests and Verifications. *US-China Education Review A*. https://doi.org/10.17265/2161-623x/2016.01.005
49. P Akayuure, **Clement Ayarebilla Ali** (2016). Incorporating Indigenous" Bukre" Game into Mathematics Lessons: A Teaching Experiment. *Online Submission*. https://eric.ed.gov/?id=ED618692
50. **Clement Ayarebilla Ali**, Peter Akayuure (2016). Infusing Competencies and Skills of Vocational Instructors: Innovations to Boost Science and Technology for National Development. *American Scientific Research Journal for Engineering, Technology, and Sciences (Global Society of Scientific Research and Researchers)*.
51. **Clement Ayarebilla Ali**, Eric Magnus Wilmot (2016). Pre-Service Teachers' Didactic Conceptual Structures in the Absolute and Quadratic Inequalities. *IOSR Journal of Mathematics*. https://doi.org/10.9790/5728-1204026269
52. **Clement Ayarebilla Ali** (2016). Preservice Teachers' Applications of Integrated Design Models for Teaching and Learning of Solids. *Journal of Mathematics and System Science*. https://doi.org/10.17265/2159-5291/2016.10.001
53. **CA Ali**, P Akayuure (2016). Student-Teachers' Knowledge and Skills in Contemporary Quantitative Methods in Action Research Reporting. *IOSR Journal of Research and Method in Education (IOSR-JRME)*. https://scholar.google.com/scholar?cluster=11671732924404802 94&hl=en&oi=scholarr
54. **Clement Ayarebilla Ali** (2014). Application of principal component analysis in monitoring educational prospects in mathematics related careers in the upper east region of Ghana. *Education and Science Journal of Policy Review and Curriculum (ESJPRCD)*. https://scholar.google.com/scholar?cluster=14143196947739313114&hl=en&oi=scholarr

Conference papers 1

1. **CA Ali**, Douglas D Agyei (2017). 4T Models of Anthropological Moments of Didactical Praxeologies in the Parabola with Digital Technologies. *Innovative and Creative Education and Teaching International Conference (ICETIC)*. https://www.researchgate.net/profile/Joao-Carlos-Leitao/publication/321528929_Atas_ICETIC_FullPapers/links/5a2673134585155dd42193cb/Atas-ICETIC-FullPapers.pdf#page=70